

SCOMM

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STATE OF ALASKA

DEPARTMENT OF REVENUE

OFFICE OF THE COMMISSIONER

STEVE COWPER, GOVERNOR

P.O. BOX 5
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July 14, 1989

The Honorable Mike Davis
Alaska State Legislature
Chair, Legislative Council
119 N. Cushman Street, Suite 205
Fairbanks, AK 99701

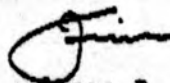
ATTN: Ms. Catherine Reardon

Dear Representative Davis:

You and the members of the Legislative Council subcommittee wanted to know more about what we had in mind for a comparison of the oil investment climate here and elsewhere. I hope you find this as clear and candid as we tried to make it.

If you need further information, Commissioner Malone asked that I coordinate responses from the Department.

Sincerely,



James B. Rhode
Special Assistant
to the Commissioner

International Oil Comparisons

Proposal Revised July 7, 1989

The Goal

The goal is to be able to show each year, on a risk adjusted basis, how governments and the oil industry share profits in Alaska compared with how profits are shared in competing oil areas of the world.

The comparisons will not be lease/royalty/tax rates by themselves, total dollars of profit or profit per barrel, or simply the rates of returns of the various companies in different places. There must be a range of adjustments, to include geological uncertainty, political instability, inflation and other risk factors that enter into the investment decision.

The Benefits

To date, the debates over tax and leasing changes have focused on the profitability of the industry within Alaska. There has been little useful comparison with the other American energy states and scant attention to how Alaska ranks

globally.

But, of course, Alaska competes with other locales for exploration and development spending by the oil companies. A creditable analysis of the over-all economic climate for the industry here, done every year and with the companies invited to participate, would give policy makers key base line information.

This base line information would not, automatically, make a case for higher "government take" from the industry, or dictate the form of any increase. The analysis might show, variously, that some types or rates of tax need to be lowered or postponed, that special incentives were necessary, or that no changes were in order.

Currently, the State is not able to make a truly complete analysis of such matters as optimum rates of production, sought reductions of royalty payments, suggested revisions of the leasing system, lifting the export ban on Alaskan crude, and other long term issues - let alone such matters as the impacts of existing or proposed taxes.

Final Product

The final product of this effort will be an economic model that can be used on a personal computer (or, if need be, Revenue's new computer in the Oil and Gas

Audit Division). This model can be updated each year at modest cost, in a range of \$5-10,000 per year. We are told costs would be reasonable for adding new oil areas for comparison; costs would depend on the number of areas and the competition among vendors.

Method

Comparisons might be done on the basis of the same field sizes in a number of different areas, on the basis of actual fields and defined prospects, or both. The process consists, broadly, of five steps. First, all outlays to explore, develop, and produce a field, past and future, must be identified. Second, all revenues must be projected in a defensible manner. Third, royalty and tax effects must be calculated, including allowances, if any, for the recovery of capital, deductions, the extent to which costs from one field may be used to offset profits from another, the credits granted, and so forth. Next, after-tax outlays and revenues have to be weighted for time - how early or late an expense is incurred and when income is received. The resulting numbers are "discounted cash flows" which yield a percentage rate of return. Finally, this return has to be adjusted for various factors of risk, notably geological uncertainty and political instability (to include risks arising from environmental controversy).

Which adjustments to make, and which measurements and indices to use for these adjustments is a problem that will require expert advice (see below). What can be

stated at this point is that such adjustments can be done relatively, on a scale. For example, observers who disagreed on the absolute percentage to subtract for levels of political instability (5%, 10%, 15%) could agree that risks are higher when there is an on-going civil war than in a place where royalty contracts are enforceable in the courts and where tax changes are (say) incremental and few. The fact that adjustments are judgmental does not mean the process is arbitrary. In the end, all the most important decisions of policy makers are matters of judgment rather than of theory or math.

Who

Arguably, lease/royalty/tax comparisons could be prepared by outside consultants. There are several problems with this approach. The studies may be inconsistent and, probably, done on an irregular basis. Ordinarily, the Legislature could not expect to have much part in the process, either. But most importantly, if the work is done inside a line department the Legislature will be in a position to hold persons to account for the quality of the work. Classified employees live and die by their budget; consultants move on.

However, outside consultants are indispensable to proceeding with this project. They can help set the parameters of the comparisons, advise on the limitations of software packages, assist in grading data and estimating data, and provide a variety of view points on debatable issues. In short, a balanced panel of consultants offers

the best hope of adequate confidence in the comparisons that are made.

For this reason, we favor having three consultants who have, respectively, mostly oil industry experience, mixed government and oil clientele, and largely a public sector practice. We suggest no less than three to insure minority views. Moreover, a log should be kept of disputes for the help of those reviewing the final products.

In addition, we encourage the direct participation of the oil industry, and of both the non-partisan (e.g. Legislative Finance) and appointed staff of the Legislature. Further, the Legislators might wish to delegate members who could exercise an oversight role at various stages of the effort.

Costs and Time

We estimate the cost of the project not to exceed \$125,000 and, based on contacts with persons who have done such analysis before, we estimate good, serviceable results could be obtained within six months of the starting date, with a risk of slippage on the order of 30 days or less, i.e. funding by August 1 would mean a reporting date of February 1, or March 1 at the latest.

Our cost estimate is based on the following considerations.

Professional Fees

\$40,500

Airfare and Expenses	19,500
Computer Software (Purchase)	25,000-50,000
Contingency	<u>15,000</u>
Total	\$125,000

*50,000 encumbered for
computer + software*

75,000

Professional fees are based on nine (9) days of consulting at \$1,500 per day for each of three persons, consisting of three work sessions in Anchorage (for design of the study, a mid-way review, and critique of the final draft), advice given by phone and fax during the course of the study, and appearances before the Legislature by a spokesman for the panel.

Travel costs have been placed on the high side because the consultants are likely to come from Europe and the eastern U. S..

We believe that existing, tried software can be used after minor adaption.

No further money or time would be committed, unless and until that was decided by mutual agreement of the Department and the Legislature.

REPRESENTATIVE
SEN GRUSSENDORF

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RULES COMMITTEE
LEGISLATIVE COUNCIL

DISTRICT 3
ELFIN COVE
RELCAN
PORT ALEXANDER
SITKA
"SNAKE"

Alaska State Legislature



House of Representatives

RULES COMMITTEE CHAIRMAN

July 20, 1989

WILEN JANEAL
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(907) 488-3884
(907) 488-3780

Representative Mike Davis, Chairman
Legislative Council
119 North Cushman
Suite 205
Fairbanks, Alaska 99701

Dear Mike;

I have reviewed the Commissioner of Revenue's proposal for joint funding with the legislature for development of a data base for "International Oil Comparisons" for Alaska. It is my personal view that the Department of Revenue probably should have requested the necessary funds in their FY 1990 budget request but I can also understand and appreciate the Commissioner's strong desire to include the legislature in the development of this data from the beginning. By including the legislature as an active participant, it is my belief, that the Commissioner will be far more successful in developing an information base that can be considered a good source of usable information by both the executive and legislative branches. The need for a good, reliable comparative information base, such as the one the Commissioner is proposing, was, at least in my mind, pointed out in the past session during the "ELF" debate where everyone involved could have used more reliable data upon which to base their decisions.

Past experience will tell you that data gathered from a project of this type can be subject to much debate as legislators and industry strive to support their respective positions and opinions. However, I believe that while we can debate where the money should be budgeted, no one will or can debate the state's need to develop and have this type of information base available for good decisions and policy making affecting Alaska. In general, the controversy that usually surrounds the development of an information model of this type is over how the criteria was originally selected and how the data will ultimately be interpreted. Much of this controversy can be eliminated with the legislature's active participation as stated in the Commissioner's proposal to the Legislative Council.

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July 20, 1989

I strongly believe it is in the state's best interest that this project go forward as soon as possible, as Alaska has already gone far too long in an "information vacuum" about an industry that impacts our state and citizens so much. It is for these reasons that I strongly recommend that the Legislative Council approve the Commissioner of Revenue's request for joint funding by the House and Senate leadership and active legislative participation in the development of this project.

Sincerely,



Ben Grussendorf
Representative

cc: Representative Sam Cotten
Representative Cliff Davidson
Senator Bettye Fahrenkamp
Senator Arliss Sturgulewski
Senator Drue Pearce

Alaska State Legislature

Senator Drue Pearce, Chair
Senator Tim Kelly
Senator Rick Halford
Senator Paul Fischer
Senator Al Adams



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SENATE SPECIAL COMMITTEE ON OIL AND GAS

MEMORANDUM

TO: Representative Mike Davis
Chairman, Legislative Council

FROM: Senator Drue Pearce

RE: Data Base Development for
International Oil Comparisons

DATE: August 3, 1989

After reviewing the concept of creation of a data base for comparison of oil value and taxation issues, I agree that the State and oil companies share a sense of frustration in determining the facts. I have concluded that there is much to be gained by having a data base if the affected parties participate in development and if they, too, have access to the information generated.

Further, I believe that in order to get the oil companies to the table in the development phase, they must feel that they are a part of the process and that they aren't being "set up".

After reading Gregg Erickson's memorandum of January 16, 1987 along with Mr. Rhode's July, 1989 proposal, I would point out the following areas to be considered when developing the data base:

1. Transportation and production must be separated. The actual net back should be recognized in evaluating production, not a world price adjusted for transportation.
2. When designing the model to evaluate the profitability of oil in Alaska vs. that produced in other countries, certain assumptions must be taken into account:
 - * environmental costs
 - * engineering considerations (such as weather and location)
 - * comparing concession or capital recovery methods in foreign countries with Alaska

This model should be future based, i.e. it should look to present and future considerations rather than the past since it would be counterproductive to look back at individual conceptions of "who got the best deal" in the last ten years.

Finally, in preparing an analysis of Alaska's oil taxation policies, the Department of Revenue should ensure that the data produced can be compared directly to our corporate tax structure policies for other industries doing business in our state.

I would like to be named as one of the legislators selected to work with the Department of Revenue and selected consultants on this project. This summer while attending The Executive Program of the Darden School at the University of Virginia, I had the opportunity to work with some of the new forecasting models being used by corporations around the United States. Because of this recent experience as well as my role as Chair of the Senate Special Committee on Oil and Gas, I believe that the perspective I would bring to this task would be both valuable and relevant.

In addition, I have the names of some consultants I would like to suggest to the Department of Revenue for consideration on this project.

DP:jf



ALASKA LEGISLATIVE COUNCIL

-Minutes-

August 3, 1989

The meeting was called to order at 1:50 p.m. by Chair Mike Davis via teleconference from the Anchorage 5th Floor Conference Room.

The roll was taken and in attendance were (in Anchorage unless otherwise noted) Legislative Council members Collins, Cotten, Davidson, Davis, Grussendorf (Sitka), Fahrenkamp, Frank (Fairbanks), Kelly, Navarre, Pearce (Kaktovik), Szymanski (Wasilla), Uehling and Zharoff. Absent was Zawacki. Staff present was Endicott in Anchorage and Dierdorff, Stoops and Fink in Juneau.

APPROVAL OF THE MINUTES

Senator Fahrenkamp moved and asked unanimous consent that the minutes of the June 20, 1989 meeting be approved. There was no objection and the minutes were approved.

TASK FORCE ON GUIDING AND GAME CONTRACT

Senator Kelly explained that the funding for the contract was in the FY 90 Guiding and Game Task Force budget. Chair Davis indicated that the Task Force had met on July 19, 1989 and voted unanimously to enter into a professional services contract with Birch, Horton, Bittner and Cherot. Senator Faiks has written a justification for the sole source contract. Chair Davis noted that the contract starting date was July 14, 1989. Senator Uehling indicated that the Council had not met since June and, therefore, there had been no opportunity to get the contract approved earlier. Representative Navarre also noted that the Task Force was charged with returning to the Legislature at the beginning of next session with recommendations and that was the reason for the expeditious handling of the contract.

Representative Navarre moved and asked unanimous consent that the Task Force on Guiding and Game contract with Birch, Horton, Bittner and Cherot for \$27,000 be approved. The members participating by teleconference were polled individually and the motion passed with unanimous consent.

Senator Uehling asked if a sole source contract didn't require some special procedures. Mr. Endicott indicated that the sole source justification was a part of the contract and had been approved by the Task Force at their meeting.

DEPARTMENT OF REVENUE INTERNATIONAL OIL COMPARISON

Commissioner Malone indicated that the members had before them a proposal for comparison of oil value and taxation issues with other oil areas of the world and the development of an economic model that would make the analysis of the economic questions easier. The proposal asked for Council to approve a budget not to exceed \$125,000 for this purpose. He noted that Representative Grussendorf had submitted a letter on behalf of the subcommittee endorsing this proposal.

Commissioner Malone stated that the idea behind the proposal is to develop a common database and a model that has agreed upon parameters for making comparisons. To get the participation necessary from the oil companies operating in Alaska, the legislature and the executive branch will give the figures more credibility and insure greater accuracy. He noted that a memorandum from Senator Pearce (included in the members' packets) emphasized the importance of this kind of work and the need to be very clear and specific about the assumptions and parameters of the study leading to the development of the model. He also concurred with Senator Pearce's assertion that the model should be future based because the emphasis of the project was to have a tool to help make decisions on policy that are going to affect the future of the State and the public resources in Alaska.

Commissioner Malone stated that he had been asked why, if this project was so important, wasn't it included in his FY 90 budget. He indicated that (1) the priority was substantially above the level of the Department of Revenue and it was essential to have legislative participation in the project, and (2) the focus at the time was on procuring the budgetary resources for the administration of current law.

Commissioner Malone indicated he was asking the Council to approved this study and a budget expenditure up to \$125,000. He asked that members from both houses be appointed to work with the Department of Revenue on development of the information and the model, including the selection of a consultant and the establishment of the parameters. He also indicated that the Department of Revenue would participate in the funding as much as possible.

Senator Kelly asked how the Legislature could be sure to have meaningful participation in the project once they have provided the money. Senator Kelly indicated that he would like to see Senators Pearce and Fahrenkamp involved, but was concerned that they wouldn't be truly a part of the project. Commissioner Malone said that he shared the same concern. He felt that without their involvement, the study and model wouldn't have the credibility and rigor this kind of effort should have. He then suggested that once the group was established they could develop a proposal and bring it back to Council for approval. Senator Kelly stated that, if the study was approved, there was no need to come back to the Council for further approval.

Senator Szymanski commented that he would like to participate in this project and was concerned that the model developed not be a political one. Senator Kelly felt that these concerns were shared by all involved.

Representative Cotten stated that the Senate lacks available funds to participate and the House would fund this project. He noted that the transportation and production costs could be separated. He felt that what has happened in other oil jurisdictions in the past must be taken into consideration. He also thought that the idea that the analysis should be compared to tax policies for other industries did not address the issue of the oil industry in Alaska as compared to the oil industry in other parts of the world. He indicated that the credibility of the Department of Revenue and the project would be severely reduced without legislative participation.

Senator Uehling asked whether the Department of Revenue was discontinuing its research section. Commissioner Malone indicated that the Department was reorganizing its research section by reassigning staff to the line divisions; however, the responsibility for the different models would be assigned to the division level and continue to be carried out. Senator Uehling expressed his concern about getting the information on all the taxation occurring throughout the state and being able to analyze taxes whether it is minerals, fishing, etc. He asked that none of the records or models be destroyed prior to next session. Senator Uehling indicated that he could not support the proposal until he had more information.

Senator Pearce stated that the intent of her memo was to make some suggestion of issues to be considered when developing this model. She felt that in order to maintain the importance of the model from year to year the updating of the information was just as important as the development of the model. She indicated that in testimony before her committee during the last session, it had been difficult, if not impossible, to separate the transportation and production costs and to determine which numbers were right or wrong. She hoped that this information could be built into the model and that by making a future based model incorporating these concerns, some of the animosity between concerned parties would be lessened. She also suggested that since they were developing a new model, it should be made compatible with what the Department has available for other industries.

Representatives Grussendorf, Davidson and Navarre indicated that they supported the project and shared the concern that reliable figures were not available.

Representative Cotten moved that the Council approve the expenditure of \$125,000 from the House Operating Fund for the purpose of conducting the project outlined by the Department of Revenue with the condition that not more than three members from each house participate in the project. He also indicated that he hoped the Department of Revenue would be able to participate to some level in the funding of this project.

Senator Uehling objected. Senator Pearce indicated that she supported the project and that it would be of considerable value and wanted to be involved in developing what would become the output of the model. The actual development of the model should be left to the experts. Senator Uehling felt the project could be done for less than \$125,000.

Senator Kelly asked how the legislature got their input. Representative Cotten indicated that the members each presiding officer appointed would meet with the Commissioner of Revenue to design the parameters of the RFP. Commissioner Malone indicated that those appointed (Legislators, the Commissioner and Department of Revenue senior staff) would agree on a course of action which included covering the minority viewpoints.

The roll was taken and the motion passed by the following vote:

YEAS:	Collins, Cotten, Davidson, Davis, Grussendorf Fahrenkamp, Frank, Kelly, Navarre, Pearce, Szymanski and Zharoff	12
NAYS:	Uehling	1
ABSENT:	Zawacki	1

LEGISLATIVE PROCUREMENT PROCEDURE AMENDMENT

Mr. Endicott stated that the amendment proposed that the procurement procedures not apply to reimbursable service agreements (RSA's) that are entered into for central services with the Department of Administration. Mr. Endicott indicated that this amendment was at the request of Mike Greany, Director of Legislative Finance. The amendment only deals with RSA's which are budgeted items and ones which we are obligated to pay for. Senator Fahrenkamp moved that the amendment to the procurement procedures excluding RSA's with the Department of Administration for central services be approved.

Representative Cotten asked if this meant that the Legislative Finance Division would be able to contract for central telephone charges without the approval of the Legislative Budget and Audit Committee. Mr. Endicott indicated that the procedures applied to the entire legislative branch and it would enable the directors to sign off on such charges as risk management costs, telephone bills, etc. The amendment is limited to items that apply to central services that are provided by the Department of Administration. Representative Cotten asked if there were other things that would be included on the list of items covered. Mr. Endicott indicated that there were not. Representative Cotten asked how the Retirement Incentive Program (RIP) became a central service. Mr. Endicott indicated that it was provided through the Division of Personnel. There is a cost involved. The employees who opt for RIP are charged in their retirement account a set amount of money and the agencies all pay money for the next three years to the Department of Administration. It is a budgeted item each year under personal services costs. Representative Cotten asked if the legislature had

ALASKA STATE LEGISLATURE

INTERNATIONAL OIL TAX COMPARISON STUDY

Schedule

X **Monday, April 9, 1990**, 8:30 - 10:30 a.m., Senate Finance Committee room.

Senator Bettye Fahrenkamp, Chair of Senate Resources and Chair of the International Tax Comparison Group (Senate, House, Department of Revenue), presiding.

INTERNATIONAL OIL TAX COMPARISON STUDY

Part I The Economic Analysis for Alaska, United Kingdom, Norway, Indonesia, and Australia.

by

Peter Gaffney (Gaffney, Cline, based in Texas and England) and Professor Alexander Kemp (Aberdeen University, Scotland).

Part II Financial and Other Aspects of Oil Investment

by

H. Motamen Scobie, chief editor of "Energy Economics" and "Economic Modelling" (London).

X **10:30 - 12:00 p.m.** Senate Finance Committee room

Press Conference with Consultants and members of the International Tax Comparison Group

Afternoon, April 9, 1990 and Tuesday, April 10, 1990.

The balance of the consultants' time is unscheduled in order to allow for informal meetings between them and members of the Legislature, Executive agencies, and the public.

The consultants leave Juneau on Wednesday, April 11.

Alaska State Legislature

Senate Resources Committee

Senator Bettye Fahrenkamp, Chairman
Senator Jay Mattila, Vice Chairman
Senator Dick Eliason
Senator Steve Frank
Senator Rick Hallford
Senator Arliss Sturgulewski
Senator Fred Zharoff



P.O. Box V
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M E M O R A N D U M

To: Members, Senate Resources Committee
From: Senator Bettye Fahrenkamp, Chairman
Re: International Tax Comparison Group Final Report
Date: April 5, 1990

The consultants retained by the International Tax Comparison Group will be in Juneau on Monday to present their final report before the Senate Resources Committee. The meeting will be held on Monday, April 9, 1990, from 8:30 a.m. to 11:00 a.m. in the Senate Finance Room.

The report represents work begun last interim and which has continued through this session. For those members not familiar with the work that the group has done, I'm enclosing an introduction which should give you an overview of the project.

I am inviting the Senate and House Finance Committees, the Senate Oil and Gas Committee and the House Resources Committee to join us. I urge you to attend this briefing.

INTRODUCTION

The State of Alaska has undertaken a project to develop a model that will enable the State to compare the climate for investment in Alaska vis-à-vis other oil and gas provinces.

In the past few years a controversy has arisen between the oil industry and the State of Alaska. The Industry believes that its investors are not receiving a rate of return commensurate with the risks inherent in the exploration and development of new and existing fields. The State of Alaska contends that it is incumbent upon the State to pursue an aggressive oil royalty and taxation policy. The development of a comparative model is desired to increase the reliability of information available to the Alaska Legislature for use in the decision-making process in legislation on oil taxation.

The work was carried out under the aegis of a joint Senate/House Committee under the chairmanship of Senator Betty Fahrenkamp. The consultants were selected in such a way as to represent a broad spread of expertise in the industry. Meetings were held with the Committee in Anchorage in November and in Juneau in January, at which the key questions raised by the Committee at their initial internal deliberations were addressed at some length. During the meetings and after subsequent work by the consultants the scope of the consultants' work was adjusted slightly to incorporate carrying out the actual tax comparisons in conjunction with the Revenue Department.

Four key Alaskan fields were chosen. It was decided to model historical Prudhoe Bay as well as to forecast its performance, together with hypothetical developments at the West Sak, North Star and Niakuk discoveries. The performance of an incremental project at Prudhoe Bay was also examined.

In addition to meetings with the Committee, extensive discussions were held with the Revenue Department and various tax models from other jurisdictions were made available. The Revenue Department prepared the four field economic cases under the Alaskan legislation and worked with the consultants to ensure the model would provide a framework for future ongoing work by the Department. Legislative comparisons were made with the UK, Norway, Indonesia and Australia. The study was carried out by, in effect, translating these four legislations to Alaska and examining the economic performance of the Alaskan fields as though that legislation had been in place in Alaska. The models used included provisions to examine, among other things

sensitivity to oil price, costs, exploration programs, incremental investments, and differences between current and new investors.

The State of Alaska has requested the consultancy Gaffney Cline and Associates (GCA), in co-operation with AUPEC (Aberdeen University Petroleum and Economic Consultants), and Dr. Motamen Scobie, Economic Consultant, to prepare a report covering the methodology and results of the comparative modelling.

The division of work was as follows:

AUPEC Group

Professor Alex Kemp and David Rose, AUPEC, carried out the cashflow/country model computer runs.

GCA

GCA was to be an arbitrator of fairness in the analysis and be responsible for the reporting and also for the inclusion of the prospectivity analysis.

AUPEC and GCA worked together to select relevant criteria and to assess the validity of comparisons.

Dr. Motamen Scobie

Dr. Motamen Scobie was to examine the financial aspects of comparative legislation in terms of investor credibility, and was to review other legislations not included in the current group. Dr. Motamen's work is the subject of a separate presentation.

Department of Revenue

The oil group of the Department of Revenue carried out the historical and forecast assessment of the Prudhoe Bay field together with forecasting the performance under Alaskan legislation of the three new Alaskan fields which were to be considered. All base data for the Alaskan modelling were provided by the Department, and the Department worked with the Consultants to ensure a compatible and appropriate comparison. The basic field data provided by the Department provided the base data for the comparisons.

The following presentation reflects the work of AUPEC and GCA in this phase of the study. It was not the intention of these comparisons to mirror the industry's exact performance as each company will handle its tax arrangements differently and they will, indeed, be in a different position. The attempt was to try and compare on a "reasonably level playing field" how particular projects would have looked if they had been carried out in Alaska under different tax legislation environments.

As a result of delays in getting the original base data, partially caused by waiting for input from industry sources, the results presented should be considered preliminary.

Insufficient time was available to adequately cross check the material validity of the hypothetical development plans or to assess the appropriateness of the incremental project on Prudhoe Bay as being an example of the impact of say major infill drilling.

It should be clear as well that though the industry was most helpful in general no direct information regarding for instance specific development plans or allocated exploration expense or their appropriateness was made available directly to consultants.

With the current results to hand it would also be prudent to ensure that the base case Alaska cashflow analysis was also carried out under the same identical system as the comparison fields to ensure more complete compatibility.

Nevertheless recognising that the original objective of this work was to set up a 'model' with which to make comparisons, a basic approach has been selected, models made available and a first pass of comparisons carried out.

Acknowledgements

The not inconsiderable help of the Revenue Department in Anchorage, the Revenue Commissioner's Office in Juneau and the Committee members and their staff is acknowledged. We are also grateful for material provided by industry and the opportunity to see the North Slope operations on site. No multiple organisation operation of this type works without cooperation and that cooperation provided by both State and Industry made possible the completion of this study.

PRESS ADVISORY - Dated April 6, 1990

FROM: Alaska Department of Revenue

The final version of the International Oil Tax Comparison Study will be released and explained in the Senate Finance committee room next Monday, April 9, 1990, from 8:30 a.m. to 10:30 a.m.

The presentation will be followed by a press conference in the same room at 10:30 a.m. Among others, Hugh Malone, Commissioner of Revenue, will be present.

This study marks the first time that Alaska's tax system and a number of fields (including the "supergiant Prudhoe Bay) are directly compared with systems in the United Kingdom, Norway, Indonesia, and Australia. The comparisons are by net present value, the size of the prize adjusted for the time value of money, rate of return, a measure of bang per investment dollar, and payout, which looks at how long funds are exposed.

Three consultants will give the presentation - Professor Alexander Kemp (Aberdeen University, Scotland), Peter Gaffney (Gaffney, Cline & Associates, based in Texas and England) and ~~DR~~ Homa Motamen (chief editor of "Energy Economics" and "Economic Modelling", London).

The consultants were chosen by a special panel of legislators and the Department of Revenue. The legislators are Senator Bettye Fahrenkamp, Chair, Senator Rick Halford, and Senator Drue Pearce (Chair, Senate Oil and Gas), Representative Sam Cotten, Speaker of the House, Rep. Ben Grussendorf, and Rep. Mike Miller.

- At 9:00am (1) Professor Kemp, Aberdeen University
- (2) Peter Gaffney, Gaffney Cline + Assoc
- At 10:00am (3) DR Homa Motamen, chief editor
Energy Economics
Economic Modelling
London

GAFFNEY, CLINE & ASSOCIATES LTD

Energy Advisers

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TO: STATE OF ALASKA
DEPARTMENT OF REVENUE
FOR: DR CHARLES L LOGSDON, PH.D
FROM: PETER D GAFFNEY
REF: A458/1267/BAT
DATE: 23 JANUARY, 1990
FAX NO: 010 1 907 278 5026

Here follows a 5 page transmission. Please advise the sender should it be received unsuccessfully.

Thanks for the data sent on the 22 January, 1990 which allows us to proceed with the next stage of the work.

Peter is travelling at the moment but he has asked us to fax the items mentioned below which hopefully answer your query regarding the 'work product' for the contract extension.

- A. A copy letter to Jim Rhode, my reference 1244 of 19 January.
- B. A copy of the draft outline and detailed table of contents.

Regards,

Bridget Tippins for
Peter Gaffney

GAFFNEY, CLINE & ASSOCIATES LTD

Energy Advisers

principals: William B. Cline
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PDG/BAT/1244/BAT

19 January, 1990

Mr James B Rhode
Special Assistant to the Commissioner
State of Alaska
Department of Revenue
P O Box S
Juneau
ALASKA 99811-0400

Dear Jim,

I thought it would be appropriate to set out my understanding of your requirements as agreed at our meeting in the Speaker's office with the Commissioner, and following on from the hearings and decisions made by the Committee on Saturday 13 January, 1990.

Legislative comparisons are to be made for a range of field sizes, comparing Alaska with the United Kingdom, Australia, Indonesia and Norway. In addition, relevant comments may refer to methodologies used in other countries outside the detailed study.

Dr Logsdon's group would provide similar material including cashflow model results, with appropriate exploration/overhead allocation for the four selected Alaskan fields, namely Prudhoe Bay, Niakuk, West Sak and North Star (Seal). Hopefully this material will be blessed in general by at least one or more appropriate industry representatives. In order to meet the deadlines mentioned below, this material will be required within the next 10 days.

Additionally, Dr Logsdon's group is to provide a summary of the oil price and quality specification for the Prudhoe Bay field, from start-up through to the end of 1989, so that we can make appropriate comparisons and standardise on a market crude for forecasting purposes. This material was to be available virtually immediately as we understood it was on hand.

Professor Kemp's group was to carry out the cashflow/country model analysis and we would expect to work closely with him, particularly on the application of appropriate exploration criteria and the incorporation of additional yardsticks to make the comparisons as industry-representative as possible in the time available.

- 2 -

In addition we will be responsible for putting together the report required and incorporating the appropriate graphics for presentation purposes. Dr Motamen is to examine certain financial aspects and is also to incorporate some comments on other jurisdictions such as Canada, for which we are not carrying out a detailed analysis.

A report incorporating an executive summary will be required for presentation at a meeting in Juneau on 19 March and, subject to early availability of the necessary information, a draft is to be provided by 15 February incorporating as much material as is readily available at that time. The report to be submitted on the 19 March may be subject to committee/staff revision prior to presentation to other legislative committees. We will use a word processing package also available in the legislative offices in Juneau to facilitate any amendments. We expect to provide a preliminary Table of Contents for this report depicting the various sector headings to give some idea of the provisional layout and approach for your early consideration within the next few days.

We understand that the budget for each of our groups is to be extended from the existing US\$20,000 to US\$60,000 to cover this work, the additional work already carried out and additional trip expenses up to and including the visit of 19 March.

It was indicated that it may be necessary for us to consider returning to Juneau some time during the following two weeks for specific presentations to certain committees, should it prove difficult to arrange these presentations during the week commencing 19 March.

It is extremely important to recognise that the material we require from the Revenue Department, i.e. the appropriate model runs on the selected Alaskan fields, is critical since we cannot begin much of our detailed work until this information is available and agreed. Early availability of the oil price material is also vital, since we need to provide the Revenue with the same forecast for them to use in the variable runs we will require them to make on their model for the Alaskan fields. It should be clear also that it is not our intention within the current scope of the project to carry out the Alaskan model runs ourselves but, if this should become necessary for whatever reason, this will add significantly to the effort required apart from impacting on the ability to complete the project in a timely manner.

We understand that a contract modification will be forthcoming shortly which incorporates the requirements for a report and adjusts the budget as set out above.

As we have already begun to organise the effort to meet your requirements, I would be most grateful if you could indicate that the above meets with your understanding.

Yours sincerely,


Peter D Gaffney

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COUNTRIES SELECTED

COMPARATIVE ALASKAN FIELDS SELECTED

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IN MOST COMPARATIVE SITUATIONS
2. BASIC INDUSTRY INVESTMENT
CRITERIA
3. OVERALL NATURE OF EVALUATION
4. RESULTS
 - 4.1 Model
 - 4.2 Other Comparisons
 - 4.3 Financial Aspects

Appendices

1. Examples of Specific Model Runs
2. Other Relevant Material

January 22, 1990

Peter Gaffney
Gaffney, Cline and Associates
Bentley Hall
Blacknest, Alton
Hampshire, GU 34 4PU
England

Dear Peter,

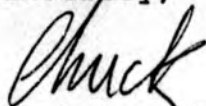
I received your fax dated Jan 22, 1990 and you'll be happy to know that I am enclosing much of the information you need to proceed with the project. I called your offices this morning to let you know that we need to arrange a teleconference either Tuesday or Wednesday morning to nail down the work product so that a new contract can be written.

The information I am enclosing is also being sent to the companies and to the department of natural resources for comment. As a result you should be aware that the enclosed information is subject to their response. We will give them until Jan. 29 to respond so that we anticipate finalizing the data input Feb. 1. We will obviously speak more specifically about the time line later this week.

I am enclosing the following information.

1. ANS oil prices cif Valdez from 1977 to present.
2. TAPS tariff projections with profit components.
3. Crude assays for Prudhoe, Kuparuk, and West Sak.
4. Preliminary cost and production assumptions for Niakuk, and Seal Island, Prudhoe Bay, and West Sak.

Sincerely,


Chuck Logsdon

cc: Homa Motamen
Alexander Kemp
Hugh Malone
Betty Fahrenkamp
Sam Cotten

YEAR	\$/bbl Saudi Light at Ras T.	\$/bbl Wellhead Prudhoe Bay	Avg Annual TAPS	\$/bbl at Valdez Prudhoe Bay
1977	12.70	6.21	6.21	12.42
1978	12.70	5.10	6.21	11.31
1979	17.46	10.57	6.21	16.78
1980	28.67	16.82	6.21	23.03
1981	34.25	23.27	6.21	29.48
1982	32.23	19.82	6.00	25.82
1983	30.41	17.61	5.90	23.51
1984	28.52	17.79	6.13	23.92
1985	27.57	16.94	5.95	22.89
1986	22.38	6.46	4.58	11.04
1987	15.27	10.97	3.90	14.87
1988	16.29	8.70	3.18	11.88
1989	13.85	12.06	3.05	15.11

(\$/barrel for Prudhoe Bay represent volume weighted averages for the year)
 (1977 Prudhoe Bay value for June thru December production)
 (1989 Prudhoe Bay value for January thru October production)

APPENDIX B CRUDE OIL ANALYSES

NORTH SLOPE [1]:	SANLEONCITO	KUPARUK WEST SAG[2]	
CRUDE			
Gravity, °API	26.4	23	22.4
Kin.Vis. @ 60 °F	42.42	cSt 79.90	95.92
Sulfur, wt%	1.06	1.76	1.82
Nitrogen, ppm	2090	1900	--
Carbon residue, wt%	4.4	7.37	7.62
H ₂ S, lb/1,000 bbl	0.35	<5	--
Salt, lb/1,000 bbl	32.7	--	--
H ₂ O, ppm	11/26	19/57	22/61
RVF, psi	3.55	2.6	2.7
Pour Pt, °F	0	-95	-50
Beut. no. (D974)	1.12	--	0.60
C6 AND LIGHTER			
Yield, vol%	1.17	--	0.61
C5 AND LIGHTER			
Yield, vol%	--	2.12	--
C5 - 150 °F			
Yield, vol%	2.2	1.6	1.9
Sulfur, wt%	<0.001	0.006	0.004
RON clear	71.5	--	--
MON clear	69.8	--	--
RON + 0.5q TEL/gal.	70.4	--	--
150 - 300 °F			
Yield, vol%	15.6	14.5	14.4
Sulfur, wt%	0.013	0.018	0.018
Paraffins, vol%	39.7	38.3	36.4
Naphthenes, vol%	43.3	47	48.2
Aromatics, vol%	17.0	14.7	15.4
300 - 650 °F			
Yield, vol%	28.6	26.9	27.5
Gravity, API	33.1	--	31.6
Sulfur, wt%	0.414	0.66	0.700
Pour Pt, °F	-25	-25	-35
Cetane No.	45.8	45.4	42.1
H ₂ , total, ppm	79	--	--
Vis. cSt @ 100 °F	--	3.003	3.34
Aromatics, vol%	33.6	30.0	31.4
650 - 840 °F			
Yield, vol%	16.4	18.9	16.6
Gravity, API	23.8	20.5	21.1
Sulfur, wt%	1.10	1.79	1.81
Aniline Pt, °C	74.7	104.3	--
Pour Pt, °F	70	50	60
Kin.Vis. @ 100 °F	--	34.2	43.99
Carbon Residue, %	0.012	wt% 0.01	--
Total Nitrogen, ppm	950	600	840
Basic Nitrogen	0.03	wt% 0.02	0.023
V/M, ppm	--	<1	--
650 + RESIDUAL			
Yield, vol%	52.4	56	55.6
Gravity, API	15	11.7	10.8
Sulfur, wt%	1.63	2.59	2.53
Carbon Residue, %	8.82	wt% 12.61	wt% 13.15
Total Nitrogen, ppm	3600	--	--
Pour Pt, °F	80	40	45
Kin.Vis. @ 210 °F	47.54	97.15	135.3
Kin.Vis. @ 275 °F	15.55	--	--
Pentane insoluble, wt%	--	--	14.97

[1] Alamed, L.R., "Guide to Export Crudes for the '80s," Oil and Gas Journal, Dec.19,1983.

[2] Crude not in production, but pilot program is underway in Kuparuk area to determine feasibility. Assay sample obtained during drill stem test and may not be representative of the entire accumulation.

**TAPS Tariff with Profit Components
(\$/bbl)**

Year	Total TAPS Tariff (\$/bbl)	Deferred Return (\$/bbl)	After-Tax Margin (\$/bbl)	After-Tax Net Income (\$/bbl)
1989	3.05	0.77	0.38	1.15
1990	3.90	0.77	0.46	1.23
1991	3.38	0.69	0.48	1.17
1992	3.32	0.64	0.50	1.14
1993	3.18	0.55	0.53	1.08
1994	3.11	0.50	0.55	1.05
1995	3.15	0.46	0.57	1.04
1996	3.11	0.38	0.60	0.99
1997	3.01	0.27	0.63	0.90
1998	2.93	0.15	0.66	0.80
1999	3.13	0.16	0.69	0.84
2000	3.32	0.17	0.72	0.89
2001	3.61	0.19	0.75	0.94
2002	3.99	0.21	0.78	1.00
2003	4.30	0.22	0.82	1.03
2004	4.72	0.23	0.85	1.09
2005	4.94	0.23	0.89	1.12
2006	5.44	0.25	0.93	1.18
2007	5.96	0.25	0.97	1.22
2008	6.53	0.24	1.02	1.26
2009	7.27	0.23	1.06	1.30
2010	8.30	0.21	1.11	1.32
2011	9.91	0.23	1.16	1.39

DNR Production Assumption

After Tax Margin 1990 and beyond = \$.35/bbl escalated by inflation from 1983
Inflation Rate = 4.5%

NIAKUK MODEL INPUTS
(1988 MONEY)

22 JAN 90

CONFIDENTIAL

YEAR	(MMBO/YR) PROD	(\$MM) FACILITY CAPCOST	(\$MM) WELL CAPCOST	#PROD WELLS	TOTAL WELLS
1988					
1989					
1990		14.200			
1991		23.800			
1992		21.000			
1993		14.000	37.00		
1994	1.73			8	14
1995	6.94			8	14
1996	6.94			8	14
1997	6.94			8	14
1998	6.53			8	14
1999	5.39			8	14
2000	4.48			8	14
2001	3.76			8	14
2002	3.17			8	14
2003	2.70			8	14
2004	2.31			8	14
2005	1.99			8	14
2006	1.73			8	14
2007	1.50			8	14
2008	1.32			8	14
2009	0.59			8	14

TOTALS 58.00 73.00 37.00

START OF PRODUCTION: 1994
 WORKOVER COSTS: \$.75MM/WORKOVER (BEGIN 1998)
 DRILLWELL COSTS: \$3.15MM/WELL (SEE NOTE)
 WORKOVER ROTATION: .33 WORKOVER/WELL/YEAR
 FIELD PROCESSING FEE: \$.70/BBL (FOR ROYALTY CALC ONLY)
 TOTAL FIELD P/L TARIFF: \$2.00/BBL (WELLHEAD TO LPC OR FS2)
 VARIABLE OPCOSTS: \$1.38/BBL (CONSTANT)
 FIXED OPCOSTS: \$5MM/YR (CONSTANT)
 LEASE BONUS: \$27 MM
 FACILITY SHARING FEE: \$2.00/BBL (CONSTANT)

NOTES

- 1.) #PROD WELLS IS FOR SEVERENCE TAX CALCULATION ONLY. TOTAL #WELLS=14, WITH 8 PRODUCERS, 4 WATER INJECTORS, 1 GAS INJECTOR, AND 1 WATER DISPOSAL WELL.
- 2.) \$3.15MM/DRILLWELL ASSUMES 11 NEW WELLS AND 3 CONVERSIONS OF EXISTING WELLS AT \$.75MM/WELL. TOTAL DRILLING COST IS \$37MM.
- 3.) \$23MM PIPELINE CAPCOST IS EXPRESSED AS FIELD P/L TARIFF. TARIFF NOT SUBJECT TO INFLATION (APPROXIMATES FRONT-END LOAD).
- 4.) ASSUME NO TRANSPORT FEE FROM PROCESSING FACILITY TO PS1.
- 5.) SOURCE OF INFORMATION IS BP ENVIRONMENTAL ASSESSMENT (5/88) AND DNR/DOR ESTIMATES. ALL DATA SUBJECT TO RE-EVALUATION.

DRAFT

WEST SAK MODEL INPUTS
(1988 MONEY)

YEAR	(MMBO/YR) PRODUCTION	(\$MM) TOTAL CAPCOST	(\$MM) FACILITY CAPCOST	(\$MM) WELL CAPCOST	#PROD WELLS	TOTAL WELLS
1988						
1989		25	25			
1990		25	25			
1991	2.19	81.5	50	31.50	17	21
1992	2.19				17	21
1993	2.19				17	21
1994	4.38	41	5	36.00	34	45
1995	4.38				34	45
1996	4.38				34	45
1997	9.13	72.5	5	67.50	71	90
1998	9.13				71	90
1999	18.25	137.5	10	127.50	143	175
2000	18.25				143	175
2001	27.38	122.5	10	112.50	214	250
2002	27.38				214	250
2003	36.50	160	10	150.00	286	350
2004	36.50				286	350
2005	54.75	282.5	20	262.50	430	525
2006	54.75	37.5		37.50	450	550
2007	54.75	122.5	10	112.50	500	625
2008	54.75				500	625
2009	51.10				475	600
2010	43.80				450	550
2011	34.68				425	525
2012	27.38				400	500
2013	21.90				375	450
2014	18.25				350	425
2015	14.60				300	375

TOTALS 632.91 1107.5 170.00 937.50

START OF PRODUCTION: 1991
 WORKOVER COSTS: \$.75MM/WORKOVER
 DRILLWELL COSTS: \$1.5MM/WELL
 WORKOVER ROTATION: .33 WORKOVER/WELL/YEAR
 FIELD PROCESSING FEE: \$0.67/BBL
 TOTAL FIELD P/L TARIFF: \$2.70/BBL
 FACILITY SHARING COSTS: \$2.00/BBL (CONSTANT)
 VAR. OPCOSTS: \$1.34/BBL (CONSTANT)
 FIXED OPCOSTS: \$13MM/YR (CONSTANT)
 LEASE BONUS: 0

NOTES

- 1.) CAPCOSTS DO NOT INCLUDE SUNK COSTS.
- 2.) PRODUCTION WELL COUNT BASED ON INITIAL WELL RATE=350 BOPD/WELL.
- 3.) ASSUMES FACILITY SHARING.
- 4.) FACILITY CAPCOSTS INCLUDE GRAVEL, PIPELINE TO KUPARUK P/L TIE-IN, FLOWLINES TO SHARED PROCESSING FACILITY, METERING AND OTHER MISC. INCREMENTAL PRODUCTION COSTS.

DRAFT

JAN 22, 1990

NORTH STAR UNIT MODEL INPUTS
(1988 MONEY)

DRAFT

YEAR	(MMBO/YR) PRODUCTION	(\$MM) TOTAL CAPCOST	(\$MM) WELL CAPCOST	(\$MM) FACILITY CAPCOST	#PROD WELLS	TOTAL WELLS
1996						
1997		600		600		
1998		600	30	570		15
1999		710	30	680		30
2000	22	90		90	24	30
2001	20				24	30
2002	18				24	30
2003	16				24	30
2004	14				24	30
2005	13				24	30
2006	12				24	30
2007	11				24	30
2008	9				24	30
2009	8				24	30
2010	8				24	30
2011	7				24	30
2012	6				24	30
2013	5				24	30
2014	5				24	30
2015	4				24	30

TOTALS 178 2000 60 1940

START OF PRODUCTION: 2000
 WORKOVER COSTS: \$.75MM/WORKOVER (BEGIN 2005)
 DRILLWELL COSTS: \$2MM/WELL
 WORKOVER ROTATION: .33 WORKOVER/WELL/YEAR
 FIELD PROCESSING FEE: \$.70/BBL (FOR ROYALTY CALC ONLY)
 TOTAL FIELD P/L TARIFF: \$3.52/BBL
 VARIABLE OPCOSTS: \$1.68/BBL (CONSTANT)
 FIXED OPCOSTS: \$31MM/YR (CONSTANT)
 LEASE BONUS: \$5 MM

NOTES

-
- 1.) CAPCOSTS DO NOT INCLUDE SUNK COSTS.
 - 2.) SOURCE OF DATA: DNR/DOR ESTIMATES. DATA SUBJECT TO RE-EVALUATION.

CONFIDENTIAL

JAN 22, 1990

DRAFT

PRUDHOE BAY MODEL INPUTS
(1988 MONEY UNLESS OTHERWISE SPECIFIED)

CONFIDENTIAL

JAN 22, 1990

YEAR	(MMBO/YR) PRODUCTION	(\$MM) TOTAL CAPCOST	#PROD WELLS	TOTAL (\$MM) WELLS	OPCOST
1975		3827	0	0	0
1976		1166	0	0	0
1977	113	890	130	195	413
1978	398	400	195	293	526
1979	468	782	243	365	603
1980	555	1104	257	386	619
1981	556	2104	275	413	627
1982	559	2839	339	509	645
1983	561	1048	416	624	666
1984	559	1128	410	615	665
1985	568	959	486	729	683
1986	561	141	546	819	701
1987	572	371	590	885	711
1988	558	570	590	885	689
1989	505	507	590	885	
1990	485	488	590	885	
1991	437	235	590	885	
1992	402	235	590	885	
1993	370		590	885	
1994	340		590	885	
1995	313		590	885	
1996	288		590	885	
1997	265		575	863	
1998	244		560	840	
1999	224		545	818	
2000	202		530	795	
2001	188		515	773	
2002	164		500	750	
2003	147		485	728	
2004	132		470	705	
2005	104		455	683	
2006	104		440	660	
2007	90		425	638	
2008	78		410	615	
2009	68		395	593	
2010	59		380	570	
2011	50		365	548	
2012	43		350	525	
2013	37		335	503	
2014	31		320	480	
2015	26		305	458	

TOTALS 11237 18794

DRAFT

PRUDHOE BAY (CONT.)

START OF PRODUCTION: 1977
WORKOVER COSTS: \$.75MM/WORKOVER
DRILLWELL COSTS: \$2MM/WELL
WORKOVER ROTATION: .33 WORKOVER/WELL/YEAR
FIELD PROCESSING FEE: \$.70/BBL (FOR ROYALTY CALC ONLY; CONSTANT)
TOTAL FIELD P/L TARIFF: 0
VARIABLE OPCOSTS: \$0.67/BBL (CONSTANT)
FIXED OPCOSTS: \$186MM/YR (CONSTANT)
LEASE BONUS: \$9MM

JAN 22, 1990

NOTES

-
- 1.) ASSUMES NO NEW WELLS DRILLED-ONLY WORKOVERS.
 - 2.) TOTAL WELLS ASSUMED TO BE 1.5 X #PROD WELLS.
 - 3.) FIELD PROCESSING FEE EXPRESSED IN CONSTANT DOLLARS.
 - 4.) HISTORICAL CAPCOSTS AND OPCOSTS ARE IN AS-SPENT DOLLARS.

GAFFNEY, CLINE & ASSOCIATES LTD

Energy Advisers

JAN 25 1990

principals: William B. Cline
Peter D. Gaffney

Registered London No. 1122740

FACSIMILE TRANSMISSION

TO: STATE OF ALASKA
DEPARTMENT OF REVENUE
FOR: DR CHARLES L LOGSDON, PH.D
FROM: PETER D GAFFNEY
REF: A458/1249/BAT
DATE: 22 JANUARY, 1990
FAX NO: 010 1 907 278 5026

Bentley Hall
Blacknest, Alton
Hampshire GU34 4PU
Telephone: Bentley (0420) 23366
Cable: Techserv Alton Hants
Telex: 858185
Telecopier: (0420) 22357

Here follows a 2 page transmission. Please advise the sender should it be received unsuccessfully.

Please find attached two letters regarding:

- A. Oil Price/Quality Information from Prudhoe Bay, and
- B. Input Data and Sensitivity Analysis on the Alaskan Fields

Regards,

P. Gaffney
PP Peter Gaffney

GAFFNEY, CLINE & ASSOCIATES LTD

Energy Advisers

principals: William B. Cline
Peter D. Gaffney

Registered London No 1122740

Bentley Hall
Blacknest, Alton
Hampshire GU34 4PU
Telephone: Bentley (0420) 23366
Cable: Techserv Alton Hants
Telex: 858185
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PDG/bat/A458/1249

22 January, 1990

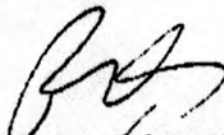
Dr Charles L. Logsdon, Ph.D
Petroleum Economist
State Of Alaska
Department Of Revenue
Oil & Gas Audit Division
550 West 7th Avenue, Suite 570
Anchorage
ALASKA 99501

Dear Dr Logsdon,

**OIL PRICE/QUALITY INFORMATION
FROM PRUDHOE BAY**

I would be most grateful if you could supply as soon as possible (preferably within the next day or so) the historic Prudhoe Bay oil prices received, together with some indication of oil quality, as we will need this information to begin setting up models and to establish a suitable differential from the marker crude chosen.

Regards,


Peter D. Gaffney

cc: Mr James B Rhcde
Professor Alex Kemp
Dr H Motamen Scobie

GAFFNEY, CLINE & ASSOCIATES LTD

Energy Advisers

principals: William B. Cline
Peter D. Gaffney

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PDG/bat/A458/1250

22 January, 1990

Dr Charles L Logsdon, Ph.D
Petroleum Economist
State of Alaska
Department of Revenue
Oil & Gas Audit Division
550 West 7th Avenue, Suite 570,
Anchorage
ALASKA 99501

Dear Dr Logsdon,

**INPUT DATA AND SENSITIVITY ANALYSIS
ON THE ALASKA FIELDS**

Further to our discussion on the material required on the four Alaskan fields, namely a cashflow analysis using the most up to date information and incorporating the applicable full exploration delineation/overhead costs on a timely basis.

As you will appreciate, once we have received basic output from your models with the appropriate input material and have examined the same, we will be asking you to carry out a series of parametric runs using your Alaskan model so as to provide us with the results for appropriate comparisons. These runs will incorporate a series of price projections, ranged development costs and perhaps some additional factors which will become apparent as soon as we see the first analysis.

I hope that it will be possible to get the initial material as well as these parametric runs in a timely manner so that we can begin to prepare the draft report and therefore get a reasonable start on the comparative analysis.

I understand from our discussions that the material from the first four runs is expected to be available later this week. Could you let me know how this is progressing so we can co-ordinate our efforts.

Regards,


pp Peter D Gaffney

cc: James B Rhode
Professor A Kemp
Dr H Motamen Scobie

STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPARTMENT OF REVENUE

OIL AND GAS AUDIT DIVISION

550 WEST 7TH AVENUE
ANCHORAGE, ALASKA 99501
PHONE: (907) 276-1363

February 14, 1990

Mr. Peter Gaffney
Gaffney, Cline and Associates
Bentley Hall
Blacknest, Alton
Hampshire, GU 34 4PU
England

FEB 20 1990

Dear Peter:

I need confirmation from you that we have an understanding with respect to the contract for your professional services, work product and time line.

I am assuming that everyone received a copy of the letter sent by Jim Rhode to Peter Gaffney, February 5, 1990, outlining the contract amendment to allow each of you up to \$40,000 additional fees and expenses. I spoke with Jerry Schlitz February 13th and he assures me that the contract paperwork is being processed.

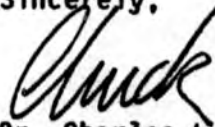
Further, I assume that you all have a copy of the proposed table of contents for the report due March 19 which Jim included in his February 5th letter.

Finally, I assume that you all have received the information which we sent to you February 2, 1990.

My understanding is that Peter will draft a basic narrative consistent with Jim's outline and address the prospectivity issue. Alex will be responsible for the quantitative analysis of the alternative systems and discussions of the comparative indicators. Homa will discuss the comparative financial climate for oil investment and the intragovernment/government-company information issue. It was also my understanding that the Department of Revenue would be responsible for quantitative analysis of the Alaska/US system.

It is extremely important for the success of the study that you verify for me at your earliest convenience that progress is being made along these lines.

Sincerely,



Dr. Charles L. Logsdon
Petroleum Economist

CLL/pjt

cc:
Hugh Malone
Representative Sam Cotten
Senator Bettye Fahrenkamp
Senator Drue Pearce

Aberdeen University Petroleum and Economic Consultants

Department of Economics · Kings College · Aberdeen AB9 2TY · Scotland

~~Telephone 0224 480241 Ext. 5307~~ · Telex 73158 UNIABNG

Tel. NO. 0224-272168

AGK/SG

15th February, 1990.

Dr. Charles L. Logsdon,
Petroleum Economist,
Oil and Gas Audit Division,
Department of Revenue,
State of Alaska,
550 W. 7th Avenue, Suite 560,
Anchorage,
Alaska 99501,
USA.

FEB 20 1990

Dear Chuck,

Further to our discussions regarding progress on the project in Aberdeen, we have a number of specific issues we would like to raise with you. These are as follows:

(1) We would be grateful if you could send to us a historic run on Prudhoe Bay showing the actual historic prices. Tomorrow we will be sending to you the future oil price scenarios for use for Alaska.

(2) Could you please incorporate for Prudhoe Bay the full exploration/delineation allocation showing the phasing of these costs including unsuccessful sunk exploration costs and any overhead allocation. We also require similar data for the new Alaskan fields. This is essential for progress in our work.

(3) We would like to make assumptions regarding abandonment costs for Prudhoe Bay. We propose a simple percentage of real development costs. Perhaps around 7% would be appropriate? We would also like similar cost estimates for the new Alaskan fields.

(4) Regarding the Hurl State project we believe it might be more meaningful to use a substantial incremental project which would capture the scale factor of Prudhoe Bay. We believe that a project of, say, 10% of the original real development costs, with possible increases of 3% to the operating costs through the life of the incremental project, involving the production of the equivalent of an increase of 10% in the field's reserves produced over, say, a 7 year period, would produce meaningful results.

(5) Our answers to Exxon's questions in your letter of 9th February are as follows:

(a) We have incorporated the domestic market obligation for Indonesia.

(b) The agreements examined in Indonesia are production-sharing contracts.

Director: Professor Alexander G. Kemp · Consulting Economist: David Rose

Dr. Charles L. Logsdon

- 2 -

15th February, 1990.

- (c) The Australian example uses the excise duty. We have chosen Bass Strait fields to which the excise duty but not the resource rent tax applies.
- (d) The price of oil for comparative purposes is based on Prudhoe Bay actuals for historic situations. For future situations our three scenarios are \$15, \$18 and \$24 Arab light in constant real terms. There are geographic differentials, details of which will be sent to you very soon.

To the extent that there any any industries' suggestions regarding cost assumptions we do require these as soon as possible as our "real" simulations are starting.

We are progressing the study as fast as possible. An early reply to our questions would help us materially.

With best wishes,

Yours sincerely,



Professor A. G. Kemp



Peter D. Gaffney

c c Mr James B. Rhode

GAFFNEY, CLINE & ASSOCIATES LTD

Energy Advisers

principals: William B. Cline
Peter D. Gaffney

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TO: STATE OF ALASKA
DEPARTMENT OF REVENUE
FOR: DR CHUCK LOGSDON, PETROLEUM ECONOMIST
CC: MR JIM RHODE
FROM: PETER D GAFFNEY
REF: A458/1338/BAT
DATE: 16 FEBRUARY, 1990
FAX NO: 010 1 907 465 2388
010 1 907 278 5026

Here follows a 2 page transmission. Please advise the sender immediately should it not be received successfully.

Further to our communication yesterday, we would suggest that you make your runs as follows:

1. With the base oil price as you have suggested, i.e. Prudhoe Bay \$14.50 in 1990. Other fields with quality and transportation differentials as in your presentations assuming they are still valid.
2. To examine the effects of oil prices we would like to run two additional cases for Prudhoe Bay and each of the other fields - a lower price case of \$3 below the \$14.50, i.e. \$11.50 and \$6 above, i.e. \$20.50.
3. As indicated previously we would like to run with a full exploration program, i.e. unsuccessful efforts and overheads incorporated in Prudhoe Bay and other fields to the extent that some reasonable assessment can be made of those numbers.
4. We would also like a run without the exploration.
5. All information is to be brought to 1990 basis for the purposes of reporting.
6. We would like to consider the costs you have provided as the base case, and also examine 25% variations on either side of the numbers you gave us (or as modified by you very soon!). All costs, i.e. future capex and future operating costs to be simultaneously adjusted but, for simplicity, holding your incremental tariff charges for the other fields constant at your base estimate.

Fax transmission to Dr Chuck Logsdon
State of Alaska

16 February, 1990

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6. We would also like to examine the impact on the new fields being run as though
 - (i) with an existing player getting full available federal and state tax benefits as well as
 - (ii) if a new player.
7. To simplify, we would also recommend that all the new Alaskan fields development be started at the same time. This will allow a fairer comparison between the projects and we can explain this in the notes.

So to summarise for each new field there will be:

- 1 Base run with middle cost and price and with exploration, with no new player
- 2 Price runs using median cost
- 2 Cost runs using median price
- 1 Base run without exploration
- 1 Base run for new fields only with exploration as if new player

For Prudhoe Bay as above, but obviously historic prices and costs to end 1989. Also no new player or without exploration is required.

We do want to be able to show remaining NPV and ROR as of 1990 as well as full field figures on Prudhoe Bay.

Your comments welcomed.

Please copy replies to Professor Kemp as well as the undersigned.

Regards,



Peter D Gaffney

STATE OF ALASKA

DEPARTMENT OF REVENUE

OFFICE OF THE COMMISSIONER

STEVE COWPER, GOVERNOR

P.O. BOX 5
JUNEAU, ALASKA 99811-0400
PHONE: (907) 465-2300
TELEFAX: (907) 465-2389

February 5, 1990

The Honorable Bettye Fahrenkamp
Chair, International Oil Tax Comparison Group
Alaska State Senate
P. O. Box V
Juneau, AK 99811

FEB 7 1990

Dear Senator Fahrenkamp:

Peter Gaffney, on behalf of the consultants, sent a draft outline for their report due in March. We discussed it with Ginny Fay, Legislative Research, Brad Pierce, OMB (Policy), and Chuck Logsdon before sending this reply.

If you have comments or have things you want added or deleted, please notify us as soon as possible. Our target for the first working draft is mid-February.

Sincerely,



James B. Rhode
Special Assistant
to the Commissioner

90-15

cc: Chuck Logsdon, Petroleum Economist

February 5, 1990

Mr. Peter Gaffney
Gaffney, Cline
Citicorp Center
1200 Smith, Suite 320
Houston, TX 77002

FAX No. (214) 380-0180

Dear Peter:

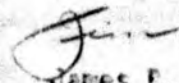
The contracts are in the process of being amended by Legislative Affairs; each of you will be allowed up to \$40,000 in additional fees and expenses - ending with your visit here, March 19 and 20, for the final review of the report. Your later appearance to present the report will be handled separately.

We discussed your draft table of contents with a number of parties and have only minor changes to propose as to what is covered. We believe there needs to be a short, good introduction to rate of return, profitability, and the impact of timing on both. Commissioner Malone also wanted item 5, which is mostly a different way to organize topics you had already included. The aim is to draw some lessons from other parts of the world. We thought Homa could be the lead writer for this section.

We do, however, want to reverse the order in which things are laid out so that conclusions and our four comparisons are up front, details are in appendicis .

Thank you for sending a hard copy of all the fax messages (for one page had not made it here).

Sincerely,



James F. Rhode
Special Assistant
to the Commissioner

cc: Senator Bettye Fahrenkamp, Chair, International Tax Comparison Group
Mr. Chuck Logsdon, Chief Petroleum Economist

TABLE OF CONTENTS

INTRODUCTION	Description, background and purpose (two pages maximum)
EXECUTIVE SUMMARY	Probably bound in with report overall so that it can be separated.
COUNTRIES AND FIELDS SELECTED FOR COMMPARISON	<u>Brief</u> description of why
ALASKAN FIELDS SELECTED	<u>Brief</u> description of why
DISCUSSION	
1. OVERALL CONCLUSIONS ("NATURE" OF EVALUATION	Where Alaska sits in the prospectivity league. Special impact of exploration timing. Selection of DCF factors. Oil price scenario and inflation. Constraints of the Alaska system.
2. BASIC LEGISLATIVE FEATURES OF MOST COMPARISONS	Brief (one or two sentence) explanation of differences between corporation tax, PRT, royalty, government share of crude (production sharing agreements, etc.)
3. BASIC INDUSTRY INVESTMENT ANALYSIS	A) The criteria used for analysis (list, with a sentence or two for each criteria) B) The heart of the analysis - Rate of return, total profits, and the time value of money (maximum of two pages)
4. THE FOUR COMPARISONS	A) Graphical presentations and short underlying description. Sensitivity results, problems of analysis. Special aspects of the hindcast (looking backward) and forecast approach. Comparative organization of industry ["...control organizations in other countries..." is not a phrase that we understand]

B) Financial aspects of the comparisons, external capital v. internal cash flow.

C) Encouragement/role of the independent.

5. INDUSTRY/GOVERNMENT INTERACTIONS

A) Examples in recent years of improved and worsening relationships.

B) The question of coordinated government policy.

1) Selected countries

2) Alaska

APPENDIX A

DETAILS OF INVESTMENT ANALYSIS

More on ROR,
NPV, PV of government take. etc.
Impact of
late life investment.
Impact of price.
Operations and reserve
upsides.

D) Adjusting the
statistics -
measures of
legislative risk delay.
Other comparative factors.
Exploration prospects,
prospectivity risk.
Technology. Exposure
level. Timing. Tax
offset for exploration cost.

APPENDIX B

DETAILS OF FISCAL REGIMES

Alaska and the four countries.

APPENDIX C

DATA ORIGINS

data sources, disagreements (if
any)

APPENDIX D

DETAILED BACKGROUND OF STUDY

Objectives, Meetings
etc.

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OUTLINE
TABLE OF CONTENTS

INTRODUCTION

EXECUTIVE SUMMARY

DETAILED BACKGROUND

BASIC APPROACH AND DATA ORIGINS

COUNTRIES SELECTED

COMPARATIVE ALASKAN FIELDS SELECTED

DISCUSSION

1. BASIC LEGISLATIVE FEATURES
IN MOST COMPARATIVE SITUATIONS
2. BASIC INDUSTRY INVESTMENT
CRITERIA
3. OVERALL NATURE OF EVALUATION
4. RESULTS
 - 4.1 Model
 - 4.2 Other Comparisons
 - 4.3 Financial Aspects

Appendices

1. Examples of Specific Model Runs
2. Other Relevant Material

DETAIL TABLE OF CONTENTS

INTRODUCTION	Description, background and summary
EXECUTIVE SUMMARY	Probably bound in with report overall so that it can be separated
DETAILED BACKGROUND	Objective, meetings planned etc.
BASIC APPROACH AND DATA ORIGINS	Select fields, countries, examine variables
COUNTRIES SELECTED	Brief description of why
COMPARATIVE ALASKAN FIELDS SELECTED	Brief description of why
DISCUSSION	
1. BASIC LEGISLATIVE FEATURES IN MOST COMPARATIVE SITUATIONS	Corporation tax, PRT, royalty, government share of crude, etc
2. BASIC INDUSTRY INVESTMENT CRITERIA	Comparative criteria used. NPV, ROR, PV take, payout etc. Impact of late life investment. Impact of price. Operations and reserve upsides. Measures of legislative risk delay. Comparative other factors. Exploration prospects, prospectivity risk. Technology. Exposure level. Timing. Tax offset for exploration cost.
3. OVERALL NATURE OF EVALUATION	Where Alaska sits in the prospectivity league. Special impact of exploration timing. Selection of DCF factors. Oil price scenario and inflation. Constraints of the Alaska system.

4. RESULTS

- 4.1 Model
- 4.2 Other Comparisons
- 4.3 Financial Aspects

Graphical presentations and short underlying description. Sensitivity results, problems of analysis. Special aspects of the hindcast and forecast approach. Comparative organisation of industry control organisations in other countries.

A comment on the impact. Financial aspects of investments in selected countries. Encouragement/role of the independent. Comments on other jurisdiction, e.g. Canada/Netherlands.

Appendices

- 1. Examples of Specific Model Runs
- 2. Other Relevant Material

CONTRACTOR EVALUATION FORM

Dr. Homa Motamen

Professor Alexander Kemp

NAME OF CONTRACTOR: Peter Gaffney, Gaffney, Cline and Associates

PURPOSE OF CONTRACT: International Oil Tax Comparison Study
(Brief Description)

SERVICES PERFORMED FOR Legislative Council appointed International Tax Comparison
(Committee Name) Group

CONTRACT PERFORMANCE

YES

NO

The Contractor:

Performed all the requested services.

✓

—

Produced a satisfactory product.

✓

—

Performed the services in a timely manner.

✓

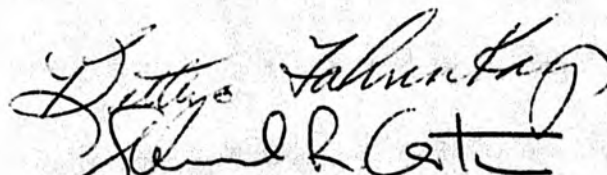
—

Met all the terms and conditions of the contract.

✓

—

OTHER COMMENTS:



Procurement Officer

International Tax Comparison Group
Committee

Senator Bettye Fahrenkamp, Chairman
Speaker Sam Cotten

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

P.O. BOX Y, STATE CAPITOL
JUNEAU, ALASKA 99811
907 465-3800

DATE: APRIL 9, 1990

NAME: SENATOR BETTYE FAHRENKAMP
CHAIR INTERNATIONAL OIL TAX
COMPARISON GROUP

DEAR: SENATOR FAHRENKAMP

ENCLOSED IS THE FINAL INVOICE FOR PROFESSIONAL SERVICES PROVIDED BY DR. HOMA MOTAMEN FOR THE INTERNATIONAL OIL TAX COMPARISON GROUP. WOULD YOU PLEASE APPROVE THE INVOICE AND RETURN IT TO LAA.

SECTION 190 OF THE LEGISLATIVE PROCUREMENT PROCEDURES STATES THAT, "IF A SERVICES OR PROFESSIONAL SERVICES CONTRACT IS AWARDED BY A LEGISLATIVE COMMITTEE, THE COMMITTEE OR THE PROCUREMENT OFFICER SHALL PROVIDE A WRITTEN EVALUATION OF THE SERVICES PROVIDED UNDER THE CONTRACT BEFORE FINAL PAYMENT ON THE CONTRACT MAY BE MADE.

WE HAVE INCLUDED A CONTRACT EVALUATION FORM FOR YOUR CONVENIENCE IN COMPLYING WITH THIS REQUIREMENT. THIS EVALUATION FORM SHOULD ACCOMPANY THE FINAL APPROVED BILLING FOR THE CONTRACT SERVICES. IF YOU PREFER, A MEMO MAY BE SUBSTITUTED FOR THE EVALUATION FORM. THE MEMO NEED ONLY ADDRESS THE EVALUATION FACTORS YOU CONSIDER PERTINENT TO THE CONTRACT.

SINCERELY,

Paul Pusich

PAUL PUSICH

February 16, 1990

A.G. Kemp/David Rose
Aberdeen University Petroleum
and Economic Consultants
Dept. of Economics
Edward Wright Building, Dunbar St.
Aberdeen, AB9 2TY, Scotland, UK

Dear Alex,

I was pleased to receive your letter by fax February 15, and also the fax from Peter Gaffney February 16. Accompanying this letter are our estimates for abandonment costs for the fields, exploration and delineation costs and historic Prudhoe Bay prices.

The abandonment costs in the accompanying table are as good as any although they are definitely a guess.

We are trying to put together the exploration cost information although this is not easy. We have what I believe are reasonable estimates of what has been spent to date for the non-Prudhoe fields in terms of exploration and delineation. The problem field is West Sak since it overlays Kuparuk and so there is a major allocation question. The West Sak estimate is therefore based on the ARCO pilot project. The estimates are based on a combination of public statements from the companies and estimates provided by the Alaska Department of Natural Resources and the Oil and Gas Conservation Commission. We do not have estimates of the timing of these expenditures. The Prudhoe Bay estimate of these costs is somewhat tenuous and arguable. The bottom line is that I have included them in the accompanying table but am also running the numbers by the companies and am awaiting a response.

So far we have had no specific comments about the data from the companies although they have commented on the Alaska/US methodology. BP in particular has worked through most of our model at the detail level. John has been finetuning and enhancing the Alaska/US model. We will hopefully be able to complete the initial runs you have requested by Friday of next week (Feb. 23).

I have sent you another copy of the historic prices for Prudhoe Bay. We are in the process of completing an historic estimate of Prudhoe Bay cash flow which is totally consistent with actual Alaska tax and royalty collections and the U.S. Federal tax system in place between 1977 and 1986. (We have done this in one form or another any number of times over the last 15 years as have many analysts on the street). Although we would have preferred not to revisit the issue of past Prudhoe Bay profitability, it is unavoidable. In the meantime, the

February 16, 1990

Page 2

Department of Revenue last year commissioned a study of the profitability of Prudhoe Bay (1977--1987) which I believe I included in the packet of information I sent previously. Deacon's study is basically a top down estimate based on company income statements and State and Federal receipts. The companies dismiss the study as totally inaccurate.

We are trying to develop your proposed Prudhoe incremental project. Because of Alaska's peculiar production tax, it makes a big difference whether this project involves more wells or involves pushing more things into the reservoir to increase production per well.

We would like to chat with you concerning methodological issues at some time over the next two weeks. Unfortunately I will be in Juneau for a number of days next week on another matter. Please let me know a day convenient for you.

	Abandonment Cost (Million 1990 \$)	Exploration (Million \$)	Years Spent
Prudhoe Bay	900	325	1969--1977
West Sak	125	125 200	1984 to date
North Star	100	300	1983 to date
Niakuk	25	100	1975 to date

Sincerely,


Chuck Logsdon

cc: Peter Gaffney
Homa Motamen
Hugh Malone
Betty Fahrenkamp
Sam Cotten

15-Feb-90

PRUDHOE BAY OIL \$/BBL WELLHEAD

Year	January	February	March	April	May	June	July	August	September	October	November	December	Volume Wt. Avg.
1977							6.87	6.86	6.82	6.22	5.57	5.46	5.97
1978	5.34	5.18	5.12	4.98	4.85	4.95	5.14	5.02	5.12	5.06	5.08	5.42	5.10
1979	5.80	6.22	6.80	7.49	8.50	10.57	12.61	12.73	12.90	13.06	13.61	13.94	10.57
1980	14.24	14.82	15.54	16.13	16.73	16.65	16.76	17.12	17.50	17.62	18.73	20.11	16.82
1981	22.10	25.75	25.65	25.07	23.92	23.21	23.07	22.62	22.00	22.11	22.02	21.85	23.22
1982	21.08	19.38	18.51	18.83	19.10	20.39	20.32	20.46	20.39	19.97	19.98	19.40	19.82
1983	18.40	17.50	17.37	17.29	17.39	17.22	17.46	17.76	17.74	17.80	17.58	17.74	17.61
1984	17.74	17.65	17.57	17.64	17.71	17.76	17.87	17.73	18.13	18.04	18.00	17.58	17.79
1985	16.96	16.70	16.82	16.94	16.93	17.00	16.86	16.86	16.93	16.96	16.93	17.34	16.94
1986	15.89	10.65	6.85	5.38	4.82	4.32	3.05	3.66	5.39	5.48	5.48	6.51	6.46
1987	8.73	9.77	9.93	10.94	11.08	11.68	12.29	12.69	11.98	11.59	11.21	9.74	10.97
1988	9.61	9.47	8.72	10.02	10.12	9.79	8.80	8.71	7.95	6.98	6.62	7.64	8.70
1989	10.04	10.85	12.24	13.39	13.26	12.52	12.04	11.80	11.97	12.53	13.08	13.91	12.31

15-Feb-90

KUPARUK OIL \$/BBL WELLHEAD

Year	January	February	March	April	May	June	July	August	September	October	November	December	Volume Wt. Avg.
1977													
1978													
1979													
1980													
1981												20.16	20.16
1982	19.97	19.63	18.02	17.36	17.34	17.37	17.51	17.55	17.43	17.74	18.37	18.16	18.00
1983	17.71	16.49	15.96	15.83	15.86	15.66	16.07	15.97	16.22	16.53	16.49	16.53	16.28
1984	16.35	16.28	16.32	16.14	16.40	16.72	16.94	16.58	16.90	16.85	17.08	16.80	16.63
1985	16.11	15.83	16.00	16.09	16.08	15.70	15.40	15.33	15.60	15.77	16.12	16.67	15.88
1986	15.34	8.94	4.82	3.81	3.91	3.93	2.69	3.25	4.80	4.70	4.81	5.81	5.45
1987	8.44	9.07	9.19	9.97	10.18	10.69	11.48	11.90	11.19	10.42	10.03	9.11	10.10
1988	8.26	8.12	7.14	8.54	8.92	8.41	7.29	7.35	6.60	5.47	4.90	5.71	7.20
1989	8.42	9.23	10.33	11.78	12.06	11.28	10.52	9.81	9.82	10.36	10.97	11.67	10.51

February 2, 1990

A.G. Kemp/David Rose
Aberdeen University Petroleum
and Economic Consultants
Dept. of Economics
Edward Wright Building, Dunbar St.
Aberdeen, AB9 2TY, Scotland, UK

Dear Alex,

We have completed the final review of the cost/production assumptions for the four representative Alaska oil fields. We are sending you detailed information on the cost and production assumptions by DHL. I am sending by fax the initial spreadsheets which summarize the capital and operating cost flows in current dollars. The detailed assumptions follow in the event that some of the other fiscal systems differentiate types of costs for different tax treatment. Where possible we have attempted to follow the KISS (keep it simple) principle.

We have added an additional project called the Hurl State analog. This is an incremental production project within the Prudhoe Bay field.

The Department of Natural Resources has provided significant time and effort in reviewing the data. BP Exploration has reviewed the initial assumptions and is in the process of providing their comments although they are unable to meet our deadline. ARCO has reviewed the data but has indicated that they are not prepared to provide us with a definitive response at this time.

Good luck and we await your response concerning parametric runs you require of the Alaska/US system.

Sincerely,


Chuck Logsdon

cc: Hugh Malone
Betty Fahrenkamp
Sam Cotten

CONFIDENTIAL

01 FEB 90

PRUDHOE BAY MODEL INPUTS
(1990 MONEY FROM 1990+ / HISTORICAL MONEY FROM 1975-1989)

YEAR	(MMBO/YR) PRODUCTION	(\$MM) TOTAL CAPCOST	(\$MM) WELL CAPCOST	(\$MM) FACILITY CAPCOST	AVG #PROD WELLS	AVG TOTAL WELLS	AVG (\$MM) OPCOST
1975		3827					
1976		1166					
1977	113	890			58	68	413
1978	398	400			142	159	526
1979	468	782			184	209	603
1980	555	1104			227	271	619
1981	556	2104			257	331	627
1982	559	2839			303	410	645
1983	561	1048			372	531	666
1984	559	1128			426	634	665
1985	568	959			504	688	683
1986	561	141			574	769	701
1987	572	371			650	840	711
1988	558	570			686	890	593
1989	505	530			648	869	548
1990	485	533	100	433	700	910	787
1991	437	357	100	257	738	960	776
1992	402	357	100	257	776	1010	774
1993	370	100	100		815	1060	772
1994	340				815	1060	758
1995	313				815	1060	746
1996	288				815	1060	733
1997	265				800	1040	717
1998	244				785	1021	701
1999	224				770	1001	685
2000	202				755	982	567
2001	188				740	962	557
2002	164				725	943	534
2003	147				710	923	518
2004	132				695	904	504
2005	119				680	884	424
2006	104				665	865	400
2007	90				650	845	376
2008	78				635	826	354
2009	68				620	806	334
2010	59				605	787	315
2011	50				590	767	295
2012	43				575	748	222
2013	37				500	650	208
2014	31				425	553	194
2015	26				375	488	181
TOTALS	11439	19206	400	947			

01 FEB 90

PRUDHOE BAY (CONT.)

CONFIDENTIAL

START OF PRODUCTION:	1977
WORKOVER COSTS:	\$.75MM/WORKOVER (BEGIN 1990)
DRILLWELL COSTS:	\$2MM/WELL
INITIAL WORKOVER ROTATION:	.33 WORKOVERS/WELL/YEAR (SEE NOTE #4)
FIELD PROCESSING FEE:	\$.73/BBL (FOR AK. ROYALTY CALC ONLY; CONSTANT)
TOTAL FIELD P/L TARIFF:	0
VARIABLE OPCOSTS:	\$0.73/BBL (CONSTANT)
VAR. OPCOST ESCALATION:	4%/YR (REAL) (BEGIN 1990)
FIXED OPCOSTS:	\$205MM/YR (CONSTANT TO YR 2005, THEN -4.5%/YR)
LEASE BONUS:	\$9MM (1964 MONEY)

NOTES

- 1.) TOTAL WELL COUNT IS AVG MONTHLY FOR EACH YEAR AND INCLUDES SHUT-IN WELLS. #PROD WELLS IS ALSO BASED ON AVG MONTHLY COUNT BUT DOES NOT INCLUDE SHUT-IN WELLS. SOURCE OF DATA IS AOGCC. FUTURE TOTAL WELL/PROD WELL RATIO BASED ON HISTORICAL AVERAGE.
- 2.) HISTORICAL CAPCOSTS AND OPCOSTS (1975-1989) ARE IN AS-SPENT DOLLARS. HISTORICAL DRILLING COSTS ARE INCLUDED IN TOTAL CAPITAL COSTS. HISTORICAL OPCOSTS INCLUDE WORKOVERS. FUTURE OPCOSTS ARE A FUNCTION OF WORKOVER COST, WORKOVER ROTATION, FIXED COSTS, AND VARIABLE COSTS. ABANDONMENT COSTS ARE NOT ADDRESSED.
- 3.) OPCOSTS ARE PROJECTED (CALCULATED) BEGINNING IN 1988.
- 4.) WORKOVER ROTATION DECREASES TO .2 WO/WELL/YEAR IN YEAR 2000, .1 WO/WELL/YEAR IN YEAR 2005, AND NO WORKOVERS BEGINNING YEAR 2012.
- 5.) CAPCOSTS DO NOT INCLUDE GHX-2.

01 FEB 90

PRUDHOE BAY INCREMENTAL CASE
HURL STATE ANALOG
(1990 MONEY)

CONFIDENTIAL

YEAR	(MMBO/YR) INCREMENTAL PRODUCTION	(\$MM) TOTAL INCREMENTAL CAPCOST	(\$MM) INCR FACILITY CAPCOST	(\$MM) INCR WELL CAPCOST	#PROD WELLS	TOTAL (\$MM) WELLS OPCOST
1990		50.00	50.00			
1991	2.50	32.00	12.00	20.00	7	10 6.25
1992	5.00	6.00		6.00	10	13 12.50
1993	5.00				10	13 12.50
1994	4.25				10	13 11.78
1995	3.61				10	13 10.48
1996	3.07				10	13 9.34
1997	2.61				10	13 8.33
1998	2.22				10	13 7.45
1999	1.89				9	13 6.67
2000	1.60				9	13 5.95
2001	1.30				9	13 5.14
2002	1.10				9	13 4.61
2003	0.95				9	13 4.21
2004	0.80				8	13 3.77
2005	0.60				7	13 3.11
2006	0.50				6	13 2.79
TOTAL	37.00	88.00	62.00	26.00		

ASSUMPTIONS

- 1.) 1 WORKOVER/YEAR @ \$.75MM/WORKOVER (BEGINNING 1994)
- 2.) VARIABLE OPCOSTS= \$2.50/BBL ESCALATED @ 4%/YR REAL STARTING IN 1994.
- 3.) NO FIXED OPCOSTS. ASSUME PRODUCTION THROUGH PBU FACILITIES.
- 4.) CAPCOSTS INCLUDE PRODUCTION WELLS, INJECTION WELLS, GRAVEL FOR ROADS AND PADS, ONSITE MANIFOLD BUILDING, AND PIPELINE TIE-IN TO NEAREST PBU PROCESSING FACILITY.
- 5.) COST TO DRILL WELLS IS \$2MM/WELL.

01 FEB 90

NTAKUK MODEL INPUTS
 (1990 MONEY)
CONFIDENTIAL

YEAR	(MMBO/YR) PROD	(\$MM) TOTAL CAPCOST	(\$MM) FACILITY CAPCOST	(\$MM) WELL CAPCOST	#PROD WELLS	TOTAL (\$MM) WELLS OPCOST
1992		29.16	25.12	4.04		
1993		86.92	54.60	32.32		
1994	6.94	4.04		4.04	8	14 11.91
1995	6.94				8	14 11.91
1996	6.94				8	14 11.91
1997	6.94				8	14 11.91
1998	5.46				8	14 12.59
1999	4.47				8	14 12.32
2000	3.83				8	14 12.14
2001	3.24				8	14 11.98
2002	2.77				7	14 11.85
2003	2.38				7	14 11.74
2004	2.06				7	14 11.66
2005	1.80				7	14 11.58
2006	1.57				6	14 9.13
2007	1.39				6	14 7.26
2008	0.69				6	14 5.40
2009	0.58				6	14 4.19
TOTALS	58.00	120.12	79.72	40.40		

START OF PRODUCTION: 1994
 WORKOVER COSTS: \$.78MM/WORKOVER (BEGIN 1998)
 DRILLWELL COSTS: \$3.46MM/WELL (SEE NOTE #2)
 WORKOVER ROTATION: .1 WORKOVER/WELL/YEAR
 FIELD PROCESSING FEE: \$.73/BBL (FOR AK. ROYALTY CALC ONLY)
 TOTAL FIELD P/L TARIFF: \$1.25/BBL (WELLHEAD TO LPF OR FS2)
 INITIAL FIXED OPCOSTS: \$10MM/YR (SEE NOTE #5)
 LEASE BONUS: \$27MM (HISTORICAL MONEY)
 FACILITY SHARING FEE: \$0.27/BBL (CONSTANT)

NOTES

- 1.) #PROD WELLS IS FOR SEVERENCE TAX CALCULATION ONLY. TOTAL #WELLS =14, WITH 8 PRODUCERS, 4 WATER INJECTORS, 1 GAS INJECTOR, AND 1 WATER DISPOSAL WELL.
- 2.) \$3.46MM/DRILLWELL ASSUMES 11 NEW WELLS AND 3 CONVERSIONS OF EXISTING WELLS AT \$0.78MM/WELL. TOTAL DRILLING COST IS \$40.4MM.
- 3.) \$23MM ORIGINAL PIPELINE CAPCOST IS ADJUSTED TO 1990 MONEY AND EXPRESSED AS A FIELD TARIFF. TARIFF IS NOT SUBJECT TO INFLATION SO AS TO APPROXIMATE A FRONT-END LOAD. TARIFF INCLUDES CAPITAL RECOVERY, TAXES, AND PROFIT. P/L OPERATING COSTS ARE SMALL AND ARE INCLUDED IN FIXED FIELD OPCOSTS (\$10MM/YR).
- 4.) SOURCE OF INFORMATION IS BP ENVIRONMENTAL ASSESSMENT (5/88) AND DNR/DOR ESTIMATES. COST DATA WAS ADJUSTED FROM 1988 MONEY TO 1990 MONEY USING 4.5%/YR INFLATION. PRODUCTION DATA WAS ADJUSTED TO REFLECT FULLFIELD STARTUP ON 1/1/94.
- 5.) OPCOST SCHEDULE INCLUDES FIXED OPCOSTS, FACILITY SHARING FEE, AND WORKOVER COSTS. FIXED COSTS ARE CONSTANT THROUGH 2005, DECLINE 25%/YR THROUGH 2007, THEN DECLINE 30%/YR FOR REMAINING LIFE.

01 FEB 90

NORTH STAR UNIT MODEL INPUTS
(1990 MONEY)**CONFIDENTIAL**

YEAR	(MMBO/YR) PRODUCTION	(\$MM) TOTAL CAPCOST	(\$MM) WELL CAPCOST	(\$MM) FACILITY CAPCOST	#PROD WELLS	#PROD WELLS	TOTAL (\$MM) OPCOST
1996							
1997		105		105			
1998		175	70	105		20	
1999		195	70	125		40	
2000	18	95.5	80.5	15	45	63	74.33
2001	20				45	63	77.69
2002	20				45	63	77.69
2003	20				45	63	77.69
2004	18				45	63	91.81
2005	15				45	63	84.34
2006	12				45	63	83.67
2007	10				40	58	79.59
2008	9				38	56	78.08
2009	8				36	54	76.37
2010	7				34	52	74.47
2011	6				32	50	70.44
2012	5				30	48	66.25
2013	4				28	46	61.87
2014	3				26	44	57.28
2015	3				26	42	56.22
TOTALS	178	571	221	350			

START OF PRODUCTION: 2000
 WORKOVER COSTS: \$.75MM/WORKOVER (BEGIN 2004)
 DRILLWELL COSTS: \$3.5MM/WELL
 WORKOVER ROTATION: .33 WORKOVER/WELL/YEAR
 FIELD PROCESSING FEE: NOT ALLOWED
 TOTAL FIELD P/L TARIFF: \$3.50/BBL
 VARIABLE OPCOSTS: \$1.68/BBL (CONSTANT)
 VAR. OPCOST ESCALATION: 6%/YR (REAL) (BEGIN 2004)
 FIXED OPCOSTS: \$44MM/YR (CONSTANT TO 2010, THEN -4.5%/YR)
 SUNK COSTS: \$278 MM (HISTORICAL MONEY)

NOTES

- 1.) CAPCOSTS DO NOT INCLUDE SUNK COSTS. CAPCOSTS INCLUDE 1 NEW GRAVEL ISLAND, PROCESSING FACILITIES FOR EACH OF 3 ISLANDS, ROADS, AND MISC STARTUP COSTS. CAPCOSTS OF THE OFFSHORE GATHERING SYSTEM AND THE ONSHORE ELEVATED PIPELINE TIE-IN TO PS1 ARE EXPRESSED AS A FIELD PIPELINE TARIFF=\$3.50/BBL (IN 1990 MONEY). ALL CAPCOSTS ARE BASED ON STATE SHARE OF RESOURCES.
- 2.) TOTAL WELL COUNT INCLUDES 45 PRODUCERS, 3 WATER DISPOSAL WELLS, 3 GAS INJECTION WELLS, AND 12 WATER INJECTION WELLS. #WELLS BASED ON STATE SHARE OF RESOURCES.

01 FEB 90

WEST SAK MODEL INPUTS
(1990 MONEY)**CONFIDENTIAL**

YEAR	(MMBO/YR) PRODUCTION	(\$MM) TOTAL CAPCOST	(\$MM) FACILITY CAPCOST	(\$MM) WELL CAPCOST	#PROD WELLS	TOTAL (\$MM) WELLS	OPCOST
1991		50.00	50.00				
1992	2.19	21.00		21.00	17	21	65.47
1993	2.19				17	21	65.47
1994	2.19				17	21	68.96
1995	4.38	29.00	5.00	24.00	34	45	78.41
1996	4.38				34	45	78.41
1997	4.38				34	45	78.41
1998	9.13	50.00	5.00	45.00	71	90	97.75
1999	9.13	50.00	50.00		71	90	97.75
2000	18.25	95.00	10.00	85.00	143	175	134.6
2001	18.25				143	175	134.6
2002	27.38	85.00	10.00	75.00	214	250	169.9
2003	27.38				214	250	169.9
2004	36.50	110.00	10.00	100.00	286	350	209.3
2005	36.50				286	350	209.3
2006	54.75	195.00	20.00	175.00	430	525	291.8
2007	54.75	25.00		25.00	450	550	304.2
2008	54.75	85.00	10.00	75.00	500	625	325.4
2009	54.75				500	625	334.7
2010	51.10				475	600	328.3
2011	43.80				450	550	265.3
2012	34.68				425	525	235.3
2013	27.38				400	500	206.4
2014	21.90				375	450	157.8
2015	18.25				350	425	141.5
2016	14.60				300	375	104.1

TOTALS 632.91 795.00 170.00 625.00

START OF PRODUCTION: 1992
 WORKOVER COSTS: \$.5MM/WORKOVER (BEGIN 1994)
 DRILLWELL COSTS: \$1MM/WELL
 WORKOVER ROTATION: .33 WORKOVER/WELL/YEAR (SEE NOTE #5)
 FIELD PROCESSING FEE: \$0.52/BBL (FOR AK. ROYALTY CALC ONLY)
 KUPARUK P/L TARIFF: \$0.95/BBL (NOT INFLATED)
 FACILITY SHARING COSTS: \$2.00/BBL (CONSTANT)
 VAR. OPCOSTS: \$0.50/BBL (CONSTANT)
 VAR. OPCOST ESCALATION: 6%/YR (REAL) (BEGIN 2006)
 INITIAL FIXED OPCOSTS: \$60MM/YR (CONSTANT) (SEE NOTE #7)
 SUNK COSTS: \$200MM (HISTORICAL MONEY)

NOTES

- 1.) CAPCOSTS DO NOT INCLUDE SUNK COSTS.
- 2.) PRODUCTION WELL COUNT BASED ON INITIAL WELL RATE=350 BOPD/WELL.
- 3.) ASSUMES FACILITY SHARING WITH KUPARUK.
- 4.) FACILITY CAPCOSTS INCLUDE GRAVEL, WELLHEAD/FLOWLINE TIE-IN AT DRILL SITES AND METERING.
- 5.) ROTATION REDUCED TO .2 IN 2011, .1 IN 2014, AND ZERO FOR 2016.
- 6.) FACILITY SHARING COSTS INCLUDE ALL COSTS ASSOCIATED WITH MOVING OIL FROM WELLHEAD TO THE KUPARUK PIPELINE TIE-IN.
- 7.) CONSTANT THROUGH 2010, -4.5%/YR THROUGH 2012, -10%/YR TO END.

STATE OF ALASKA DEPT. OF REVENUE

PETROLEUM RESEARCH SECTION

ECONOMIC FEASIBILITY MODEL: ALASKA NORTH SLOPE OIL FIELD DEVELOPMENT DECISION

NOTE: ANALYSIS OF DEVELOPMENT FEASIBILITY ONLY, IGNORES SUNK COSTS OF G&G AND EXPLORATION IN CAPITAL COSTS

PUBLIC VERSION: EQUIVALENT AMORTIZED ECONOMIC RENT FOR HYPOTHETICAL FIELD

FOR MORE INFORMATION CONTACT CHUCK LOGSDON AT (907) 277-5627

MAINFRAME MODEL REQUIRED FOR ENHANCED RECOVERY ANALYSIS, SIMULTANEOUS MULTI-FIELD SUPPLY ANALYSIS AND SHUTDOWN ANALYSIS

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FIELD INPUT ASSUMPTIONS              ANALYSIS OPTIONS      0
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FIELD NAME:                          PRUDHOE BAY            INCREMENTAL - ONGOING OPERATOR = 0
-----
FIELD ASSUMPTIONS:                  STAND ALONE - NEW INVESTOR = 1
FISCAL: AK/US
PROPORTION PROD N AK LEASES          1.0000
AK ROYALTY RATE                      0.1250
AK NET PROFIT BONUS ROY RATE          0.0000
AK SEV TAX NON RATE 1ST 5 YRS        0.1500
AK SEV TAX NON RATE YR 6 ON          0.1500
AK PROPERTY TAX RATE                 0.0200
AK ST CORP TAX EFF RATE              0.0140
PROPORTION PROD N US FED LEASES       0.0000
US FED ROYALTY RATE                  0.0000
US FED CORP TAX EFF RATE              0.3400
COST:
TOTAL LEASE ACQUIS COST MM$'S HISTOR 9.0000 FOR CALC OF LEASE AMORT / DEPLETION
FIXED OPER COST MM$'S CONSTANT        205.00
VARIABLE OPER COST $'S/BBL CONSTANT   0.73
PROD N YEAR TO START WORKOVERS        1
WORKOVER COST MM$'S/WELL CONSTANT     0.75
WORKOVER ROTATION FACTOR              N/A
PROPORTION WELL CAPITAL COST INTANG    0.7000
PROPORTION FACIL CAPITAL COST INTANG   0.3000
AK PTY TAX TR ORIG CO ANN ESCAL RATE  0.0500
FINANCING: ASSUMED PROPORTION OF CAPITAL COST OBTAINED AT BEG OF EACH YEAR
PROPORTION OF CAPITAL COST DEBT        0.0000
CURRENT $ INTEREST RATE ON DEBT        0.1000
TERM OF DEBT IN YEARS                 10
=====

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COMMENTS:

PRUDHOE BAY BASE CASE / BASE YEAR 1990
DIVISION OF REMAINING ECONOMIC RENT 1990 TO 2015
FOR ONGOING OPERATOR

CONSTANT \$'S = 1990 \$'S
CURRENT \$'S = \$'S OF THE DAY
INFLATION ASSUMED 4.5% PER YEAR FROM 1990

FIELD INPUT ASSUMPTIONS TABLE BY YEAR

PRUDHOE BAY

[illegible]

PROVIDE PAC

VAR OPER COST CONS \$ FSCAL RATE PCT/Y	VAR OPER COST CURR \$ ESCAL FACIOR	VAR OPER COST HMS'S CURRENT	WORK OVER COST CONS \$ ESCAL RATE PCT/Y	WORK OVER COST CURR \$ ESCAL FACIOR	PROD WELLS FOR ELF CALCS	TOT WELLS FOR WORK OVER ROTATION CALCS	WORK OVER COST HMS'S CURRENT	FIELD PIPE PROFIT \$'S/BDL CURRENT	TAPS PROFIT \$'S/BDL CURRENT
1990	1.0000	354.05		1.0000	700	910	0.3333	227.48	0.00
4.00	1.0850	346.13	0.00	1.0450	738	960	0.3333	250.77	0.00
4.00	1.1772	345.47	0.00	1.0920	776	1010	0.3333	275.71	0.00
4.00	1.2773	345.00	0.00	1.1412	815	1060	0.3333	302.38	0.00
4.00	1.3859	343.97	0.00	1.1925	815	1060	0.3333	315.99	0.00
4.00	1.5037	343.57	0.00	1.2462	815	1060	0.3333	330.21	0.00
4.00	1.6315	343.00	0.00	1.3023	815	1060	0.3333	345.06	0.00
4.00	1.7701	342.43	0.00	1.3609	800	1040	0.3333	353.79	0.00
4.00	1.9206	342.10	0.00	1.4221	785	1021	0.3333	362.95	0.00
4.00	2.0839	340.75	0.00	1.4861	770	1001	0.3333	371.86	0.00
4.00	2.2610	333.40	0.00	1.5530	755	982	0.2000	228.75	0.00
4.00	2.4532	336.67	0.00	1.6229	740	962	0.2000	234.18	0.00
4.00	2.6617	318.66	0.00	1.6959	725	943	0.2000	239.88	0.00
4.00	2.8879	309.90	0.00	1.7722	710	923	0.2000	245.36	0.00
4.00	3.1334	301.93	0.00	1.8519	695	904	0.2000	251.12	0.00
4.00	3.3997	295.34	0.00	1.9353	680	884	0.1000	128.31	0.00
4.00	3.6887	280.05	0.00	2.0224	665	865	0.1000	131.20	0.00
4.00	4.0023	262.95	0.00	2.1134	650	845	0.1000	133.94	0.00
4.00	4.3425	247.26	0.00	2.2085	635	826	0.1000	136.82	0.00
4.00	4.7116	233.88	0.00	2.3079	620	806	0.1000	139.51	0.00
4.00	5.1120	220.18	0.00	2.4117	605	787	0.1000	142.35	0.00
4.00	5.5466	202.45	0.00	2.5202	590	767	0.1000	144.98	0.00
4.00	6.0180	188.91	0.00	2.6337	575	748	0.0000	0.00	0.00
4.00	6.5296	176.36	0.00	2.7522	500	650	0.0000	0.00	0.00
4.00	7.0846	160.32	0.00	2.8760	425	553	0.0000	0.00	0.00
4.00	7.6868	145.89	0.00	3.0054	375	488	0.0000	0.00	0.00
4.00	8.3401	0.00	0.00	3.1407	0	0	0.0000	0.00	0.00
4.00	9.0490	0.00	0.00	3.2820	0	0	0.0000	0.00	0.00
4.00	9.8182	0.00	0.00	3.4297	0	0	0.0000	0.00	0.00
2009	10.6528	0.00	0.00	3.5840	0	0	0.0000	0.00	0.00

INCREMENTAL ANALYSIS

PROFITABILITY RATIOS

(NCF+CAPC)

CAPC

W/O FIN

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27.3220.3916.5314.18
12.1411.54

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

PRUDHOE BAY	FIELD PS #1 GROSS WELLHEAD	PRICE	GROSS INCOME	CAPITAL COSTS	OPER COSTS	ECONOMIC RENT	AK STATE GOVT W/O FIN	US FED GOVT W/O FIN	CO NET W/O FIN
RELATIVE YEAR	PROD'n VOLUME MMB/Y	PIPE PR \$/S/DBL CURRENT	MM\$/S CURRENT	MM\$/S CURRENT	MM\$/S CURRENT	MM\$/S CURRENT	MM\$/S CURRENT	MM\$/S CURRENT	MM\$/S CURRENT
1990	485.00	14.50	7032.50	533.00	786.53	5712.97	1938.41	998.40	2776.16
1991	437.00	15.15	6621.64	373.07	811.13	5437.45	1835.70	666.72	2935.03
1992	402.00	15.83	6365.41	389.85	845.04	5130.52	1772.71	745.00	2612.81
1993	370.00	16.55	6122.36	114.12	881.31	5126.93	1708.67	818.47	2599.79
1994	340.00	17.29	5879.12	0.00	904.42	4974.69	1644.15	864.47	2466.07
1995	313.00	18.07	5655.80	0.00	929.24	4726.55	1584.04	817.17	2325.35
1996	288.00	18.88	5438.24	0.00	955.03	4483.21	1524.40	770.61	2188.20
1997	265.00	19.73	5229.11	0.00	975.20	4253.91	1466.41	825.39	1962.11
1998	244.00	20.62	5031.39	0.00	996.58	4034.81	1410.29	880.13	1744.39
1999	224.00	21.55	4826.84	0.00	1017.26	3809.58	1350.99	831.35	1627.24
2000	202.00	22.52	4548.65	0.00	880.52	3668.13	1272.10	814.08	1581.95
2001	188.00	23.53	4423.90	0.00	903.54	3520.36	1231.17	778.27	1510.92
2002	164.00	24.59	4032.81	0.00	906.20	3126.61	1113.40	684.45	1328.76
2003	147.00	25.70	3777.44	0.00	918.56	2858.87	1029.58	621.92	1207.37
2004	132.00	26.85	3544.62	0.00	932.71	2611.92	947.90	565.73	1098.28
2005	119.00	28.06	3339.33	0.00	820.38	2518.95	871.43	560.13	1087.40
2006	104.00	29.32	3049.73	0.00	807.98	2241.75	759.34	503.99	978.42
2007	90.00	30.64	2757.96	0.00	793.62	1964.34	635.40	451.81	877.12
2008	78.00	32.02	2497.79	0.00	780.81	1716.98	511.11	409.98	795.70
2009	68.00	33.46	2275.55	0.00	770.13	1505.43	387.65	380.03	737.75
2010	59.00	34.97	2063.22	0.00	759.26	1303.96	347.39	325.22	631.36
2011	50.00	36.54	1827.17	0.00	744.16	1083.02	305.76	264.25	513.00
2012	43.00	38.19	1642.08	0.00	585.64	1056.44	271.42	266.90	518.13
2013	37.00	39.91	1476.54	0.00	573.10	903.44	236.11	226.88	440.45
2014	31.00	41.70	1292.77	0.00	557.06	735.71	196.89	183.19	355.63
2015	26.00	43.58	1133.05	0.00	542.63	590.42	159.10	146.64	284.68
2016	0.00	45.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	47.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	49.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	51.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TOTAL 4906.00 PV AMORT 101885.0 1410.03 21378.01 79096.96 26511.50 15401.19 37184.27

PRICE

NPV'S BEG YR 1 \$/S/DBL

PCT

0.00	4906.00	20.77	101885.0	1410.03	21378.01	79096.96	26511.50	15401.19	37184.27
5.00	3410.24	19.20	65461.72	1276.65	12228.42	51956.65	17565.16	9631.58	24759.91
10.00	2567.61	18.12	46536.61	1163.71	7930.18	37442.72	12702.92	6665.36	18074.44
15.00	2043.62	17.39	35541.21	1067.15	5648.94	28825.12	9788.75	4970.32	14066.05
20.00	1691.84	16.88	28553.83	983.88	4306.57	23263.39	7899.26	3914.44	11449.68
25.00	1441.33	16.51	23790.48	911.51	3447.70	19431.27	6595.17	3209.65	9626.45

FIELD PS #1 GROSS WELLHEAD	PRICE	CAPITAL COSTS	OPER COSTS	ECONOMIC RENT	STATE GOVT W/O FIN	FED GOVT W/O FIN	CO NET W/O FIN
PER BBL PV'S	\$/S/DBL CURRENT	MM\$/S CURRENT	MM\$/S CURRENT	MM\$/S CURRENT	MM\$/S CURRENT	MM\$/S CURRENT	MM\$/S CURRENT
0.00	20.77	0.29	4.36	16.12	5.40	3.14	7.58
5.00	19.20	0.37	3.59	15.24	5.15	2.82	7.26
10.00	18.12	0.45	3.09	14.58	4.95	2.60	7.04
15.00	17.39	0.52	2.76	14.10	4.79	2.43	6.88
20.00	16.88	0.58	2.55	13.75	4.67	2.31	6.77
25.00	16.51	0.63	2.39	13.48	4.58	2.23	6.68

PERCENTAGE DIVISION OF PV ECON RENT	PCT						
0.00	100.00	33.52	19.47	47.01			
5.00	100.00	33.81	18.54	47.65			
10.00	100.00	33.93	17.80	48.27			
15.00	100.00	33.96	17.24	48.80			
20.00	100.00	33.96	16.83	49.22			
25.00	100.00	33.94	16.52	49.54			

PAY OUT TIME IN YEARS ----- 0.00

ROR % W/O FIN ----- ERR

PROFITABILITY RATIOS W/O FIN -----

	PCT	
(PVMCF+PVCAPC)	0.00	27.37
	5.00	20.39
PVCAPC	10.00	16.53
	15.00	14.18
	20.00	12.64
	25.00	11.56

MAX CASH EXPOSURE MM\$/S CURRENT --- 2776.16
W/O FIN

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

PRUDHOE BAY	FIELD	PS #1	NET	NET	NET	NET	NET	NET	NET	NET	NET	NET
	GROSS		AK STATE	US FED	PHTS TO	PHTS TO	PHTS TO	CO	PHTS TO	PHTS TO	PHTS TO	CO
	WELLHEAD		GOVT	GOVT	FINAN	CASHFLOW	GOVT	GOVT	GOVT	GOVT	GOVT	NET
RELATIVE	PRODN	PIPE PR	GROSS	CAPITAL	OPER	W/ FIN	W/ FIN	COMMUN	W/ FIN	W/O FIN	W/O FIN	W/O FIN
YEAR	VOLUME	\$'S/BBL	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S
	MMB/Y	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
1990	485.00	14.50	7032.50	533.00	786.53	1938.41	998.40	0.00	2776.16	1938.41	998.40	2776.16
1991	437.00	14.50	6336.50	357.00	776.20	1756.65	638.01	0.00	2808.64	1756.65	638.01	2808.64
1992	402.00	14.50	5829.00	357.00	773.83	1623.32	682.21	0.00	2392.63	1623.32	682.21	2392.63
1993	370.00	14.50	5365.00	100.00	772.29	1497.30	717.22	0.00	2278.18	1497.30	717.22	2278.18
1994	340.00	14.50	4930.00	0.00	758.41	1378.72	724.91	0.00	2067.95	1378.72	724.91	2067.95
1995	313.00	14.50	4538.50	0.00	745.67	1271.11	655.74	0.00	1865.98	1271.11	655.74	1865.98
1996	288.00	14.50	4176.00	0.00	733.36	1170.58	591.75	0.00	1680.31	1170.58	591.75	1680.31
1997	265.00	14.50	3842.50	0.00	716.60	1077.56	606.52	0.00	1441.81	1077.56	606.52	1441.81
1998	244.00	14.50	3538.00	0.00	700.78	991.69	618.90	0.00	1226.63	991.69	618.90	1226.63
1999	224.00	14.50	3248.00	0.00	684.52	909.09	559.42	0.00	1094.98	909.09	559.42	1094.98
2000	202.00	14.50	2929.00	0.00	566.99	819.14	524.21	0.00	1018.66	819.14	524.21	1018.66
2001	188.00	14.50	2726.00	0.00	556.76	758.65	479.57	0.00	931.02	758.65	479.57	931.02
2002	164.00	14.50	2378.00	0.00	534.35	656.53	403.59	0.00	783.52	656.53	403.59	783.52
2003	147.00	14.50	2131.50	0.00	518.32	580.96	350.93	0.00	681.29	580.96	350.93	681.29
2004	132.00	14.50	1914.00	0.00	503.64	511.84	305.48	0.00	593.04	511.84	305.48	593.04
2005	119.00	14.50	1725.50	0.00	423.91	450.28	289.43	0.00	561.88	450.28	289.43	561.88
2006	104.00	14.50	1508.00	0.00	399.52	375.47	249.21	0.00	483.80	375.47	249.21	483.80
2007	90.00	14.50	1305.00	0.00	375.52	300.66	213.79	0.00	415.03	300.66	213.79	415.03
2008	78.00	14.50	1131.00	0.00	353.55	231.43	185.64	0.00	360.38	231.43	185.64	360.38
2009	68.00	14.50	986.00	0.00	333.70	167.97	164.67	0.00	319.67	167.97	164.67	319.67
2010	59.00	14.50	855.50	0.00	314.82	144.04	134.85	0.00	261.79	144.04	134.85	261.79
2011	50.00	14.50	725.00	0.00	295.27	121.32	104.85	0.00	203.55	121.32	104.85	203.55
2012	43.00	14.50	623.50	0.00	222.37	103.06	101.34	0.00	196.73	103.06	101.34	196.73
2013	37.00	14.50	536.50	0.00	208.23	85.79	82.44	0.00	160.04	85.79	82.44	160.04
2014	31.00	14.50	449.50	0.00	193.69	68.46	63.70	0.00	123.65	68.46	63.70	123.65
2015	26.00	14.50	377.00	0.00	180.55	52.94	48.79	0.00	94.72	52.94	48.79	94.72
2016	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	4906.00	PV AMORT	71137.00	1347.00	13429.38	19042.98	10495.57	0.00	26822.07	19042.98	10495.57	26822.07
NPV'S	BEG YR 1	\$'S/BBL										
0 PCT												
0.00	4906.00	14.50	71137.00	1347.00	13429.38	19042.98	10495.57	0.00	26822.07	19042.98	10495.57	26822.07
5.00	3410.24	14.50	49448.44	1222.09	8463.84	13488.48	7092.46	0.00	19181.58	13488.48	7092.46	19181.58
10.00	2567.61	14.50	37230.41	1116.11	5920.99	10253.34	5207.70	0.00	14732.27	10253.34	5207.70	14732.27
15.00	2043.62	14.50	29632.53	1025.33	4462.18	8198.53	4059.79	0.00	11886.70	8198.53	4059.79	11886.70
20.00	1691.84	14.50	24531.63	946.91	3545.28	6801.33	3305.92	0.00	9932.20	6801.33	3305.92	9932.20
25.00	1441.33	14.50	20899.30	878.62	2926.24	5799.03	2780.48	0.00	8514.94	5799.03	2780.48	8514.94

ROR % W/ FIN ---- ERR

ROR % W/O FIN --- ERR

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	----	----
	CAPC	CAPC
	W/ FIN	W/O FIN
0 PCT	-----	-----
0.00	20.91	20.91
5.00	16.70	16.70
10.00	14.20	14.20
15.00	12.59	12.59
20.00	11.49	11.49
25.00	10.69	10.69

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

PRUDHOE BAY	FIELD PS #1 GROSS WELLHEAD PRICE	PRODN VOLUME MMB/Y	PIPE PR \$/S/DBL CONSTANT	GROSS INCOME MM\$'S CONSTANT	CAPITAL COSTS MM\$'S CONSTANT	OPER COSTS MM\$'S CONSTANT	ECONOMIC RENT MM\$'S CONSTANT	AK STATE GOVT REVS MM\$'S CONSTANT	US FED GOVT REVS MM\$'S CONSTANT	CO NET CASHFLOW MM\$'S CONSTANT
RELATIVE YEAR										
1990	485.00	14.50	7032.50	533.00	786.53	5712.97	1938.41	998.40	2776.16	
1991	437.00	14.50	6336.50	357.00	776.20	5203.30	1756.65	638.01	2808.64	
1992	402.00	14.50	5829.00	357.00	773.83	4698.17	1623.32	682.21	2392.63	
1993	370.00	14.50	5365.00	100.00	772.29	4492.71	1497.30	717.22	2278.18	
1994	340.00	14.50	4930.00	0.00	758.41	4171.59	1378.72	724.91	2067.95	
1995	313.00	14.50	4538.50	0.00	745.67	3792.83	1271.11	655.74	1865.98	
1996	288.00	14.50	4176.00	0.00	733.36	3442.64	1170.58	591.75	1680.31	
1997	265.00	14.50	3842.50	0.00	716.60	3125.90	1077.56	606.52	1441.81	
1998	244.00	14.50	3538.00	0.00	700.78	2837.22	991.69	618.90	1226.63	
1999	224.00	14.50	3248.00	0.00	684.52	2563.48	909.09	559.42	1094.98	
2000	202.00	14.50	2929.00	0.00	566.99	2362.01	819.14	524.21	1018.66	
2001	188.00	14.50	2726.00	0.00	556.76	2169.24	758.65	479.57	931.02	
2002	164.00	14.50	2378.00	0.00	534.35	1843.65	656.53	403.59	783.52	
2003	147.00	14.50	2131.50	0.00	518.32	1613.18	580.96	350.93	681.29	
2004	132.00	14.50	1914.00	0.00	503.64	1410.36	511.84	305.48	593.04	
2005	119.00	14.50	1725.50	0.00	423.91	1301.59	450.28	289.43	561.88	
2006	104.00	14.50	1508.00	0.00	399.52	1108.48	375.47	249.21	483.80	
2007	90.00	14.50	1305.00	0.00	375.52	929.48	300.66	213.79	415.03	
2008	78.00	14.50	1131.00	0.00	353.55	777.45	231.43	185.64	360.38	
2009	68.00	14.50	986.00	0.00	333.70	652.30	167.97	164.67	319.67	
2010	59.00	14.50	855.50	0.00	314.82	540.68	144.04	134.85	261.79	
2011	50.00	14.50	725.00	0.00	295.27	429.73	121.32	104.85	203.55	
2012	43.00	14.50	623.50	0.00	222.37	401.13	103.06	101.34	196.73	
2013	37.00	14.50	536.50	0.00	208.23	328.27	85.79	82.44	160.04	
2014	31.00	14.50	449.50	0.00	193.69	255.81	68.46	63.70	123.65	
2015	26.00	14.50	377.00	0.00	180.55	196.45	52.94	48.79	94.72	
2016	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2017	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2018	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2019	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

TOTAL 4906.00 PV AMORT 71137.00 1347.00 13429.38 56360.62 19042.98 10495.57 26822.07
PRICE

NPV'S BEG YR 1 \$/S/DBL

0 PCT										
0.00	4906.00	14.50	71137.00	1347.00	13429.38	56360.62	19042.98	10495.57	26822.07	
5.00	3410.24	14.50	49448.44	1222.09	8463.84	39762.52	13488.48	7092.46	19181.58	
10.00	2567.61	14.50	37230.41	1116.11	5920.99	30193.31	10253.34	5207.70	14732.27	
15.00	2043.62	14.50	29632.53	1025.33	4462.18	24145.01	8198.53	4059.79	11886.70	
20.00	1691.84	14.50	24531.63	946.91	3545.28	20039.45	6801.33	3305.92	9932.20	
25.00	1441.33	14.50	20899.30	878.62	2926.24	17094.44	5799.03	2780.48	8514.94	

FIELD PS #1 GROSS WELLHEAD PRICE	PER DBL PV'S	0 PCT	5.00	10.00	15.00	20.00	25.00
PRICE	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
CAPITAL	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
COSTS	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
OPER ECONOMIC	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
RENT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
W/O FIN	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
REVS	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
CASHFLOW	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT

PERCENTAGE DIVISION OF PV ECON RENT

0 PCT	5.00	10.00	15.00	20.00	25.00
100.00	100.00	100.00	100.00	100.00	100.00
33.79	33.92	33.96	33.96	33.94	33.92
18.62	17.84	17.25	16.81	16.50	16.27
47.59	48.24	48.79	49.23	49.56	49.81

PAY OUT TIME IN YEARS 0.00

ROR % W/O FIN ERR

PROFITABILITY RATIOS W/O FIN

0 PCT	5.00	10.00	15.00	20.00	25.00
20.91	16.70	14.20	12.59	11.49	10.69

MAX CASH EXPOSURE MM\$'S CONSTANT -- 2776.16
W/O FIN

STATE OF ALASKA DEPT. OF REVENUE

PETROLEUM RESEARCH SECTION

ECONOMIC FEASIBILITY MODEL: ALASKA NORTH SLOPE OIL FIELD DEVELOPMENT DECISION

NOTE: ANALYSIS OF DEVELOPMENT FEASIBILITY ONLY, IGNORES SOME COSTS OF GAS AND EXPLORATION IN CAPITAL COSTS

PUBLIC VERSION: EQUIVALENT AMORTIZED ECONOMIC RENT FOR HYPOTHETICAL FIELD

FOR MORE INFORMATION CONTACT CHUCK LOGSDON AT (907) 277-5627

MAINFRAME MODEL REQUIRED FOR ENHANCED RECOVERY ANALYSIS, SIMULTANEOUS MULTI-FIELD SUPPLY ANALYSIS AND SHUTDOWN ANALYSIS

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FIELD INPUT ASSUMPTIONS		ANALYSIS OPTIONS	0
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FIELD NAME:	NIAXUK	INCREMENTAL - ONGOING OPERATOR = 0	

FIELD ASSUMPTIONS:		STAND ALONE - NEW INVESTOR = 1	

FISCAL: AK/US			
PROPORTION PRODN AK LEASES	1.0000		
AK ROYALTY RATE	0.1250	COMMENTS:	
AK NET PROFIT BONUS ROY RATE	0.0000	-----	
AK SEV TAX NON RATE 1ST 5 YRS	0.1225	NIAXUK BASE CASE / BASE YEAR 1992	
AK SEV TAX NON RATE YR 6 ON	0.1500	CONSTANT \$'S = 1992 \$'S	
AK PROPERTY TAX RATE	0.0200	CURRENT \$'S = \$'S OF THE DAY	
AK ST CORP TAX EFF RATE	0.0140	INFLATION RATE ASSUMED 4.5% PER YEAR FROM 1990	
PROPORTION PRODN US FED LEASES	0.0000		
US FED ROYALTY RATE	0.0000		
US FED CORP TAX EFF RATE	0.3400		
COST:			
TOTAL LEASE ADJTS COST HH\$'S HISTOR	27.0000	FOR CALC OF LEASE AMORT / DEPLETION	
FIXED OPER COST HH\$'S CONSTANT	10.92		
VARIABLE OPER COST \$'S/BBL CONSTANT	0.30		
PRODN YEAR TO START WORKOVERS	5		
WORKOVER COST HH\$'S/WELL CONSTANT	0.85		
WORKOVER ROTATION FACTOR	N/A		
PROPORTION WELL CAPITAL COST INTANG	0.7000		
PROPORTION FACIL CAPITAL COST INTANG	0.3000		
AK PTY TAX TR ORIG CO ANN ESCAL RATE	0.0500		
FINANCING: ASSUMED PROPORTION OF CAPITAL COST OBTAINED AT BEG OF EACH YEAR			
PROPORTION OF CAPITAL COST DEBT	0.0000		
CURRENT \$ INTEREST RATE ON DEBT	0.1000		
TERM OF DEBT IN YEARS	10		

FIELD INPUT ASSUMPTIONS TABLE BY YEAR

NIJAKU

RELATIVE YEAR	INFLATION		FACILITY CAPITAL		FACILITY CAPITAL		WELL CAPITAL		WELL CAPITAL		WELL CAPITAL		PRUDHOE BAY OIL		FIELD		FIELD		FIELD		FIXED		FIXED		FIXED				
	RATE PCT/Y	INFLATION FACTOR	COST CONSTANT	CONC \$ RATE	COST FACTOR	COST CURRENT	COST CONSTANT	CONC \$ RATE	COST FACTOR	COST CURRENT	PRODN VOLUME MMBBL/Y	RELATIVE PRODN YEAR	GROSS WELLHEAD PRICE \$/S/DBL CURRENT	TARIFF COST \$/S/DBL CURRENT	QUALITY DIFFER \$/S/DBL CURRENT	GROSS WELLHEAD PRICE \$/S/DBL CURRENT	4/ ROY CALC \$/S/DBL CURRENT	ROY WELLHEAD PRICE \$/S/DBL CURRENT	OPER COST \$/S/DBL CURRENT	CONC \$ RATE	COST FACTOR	OPER COST \$/S/DBL CURRENT	CONC \$ RATE	COST FACTOR	OPER COST \$/S/DBL CURRENT	CONC \$ RATE	COST FACTOR		
1992		1.0000	27.43		1.0000	27.43	4.41		1.0000	4.41	0.00	0	15.83	1.25	0.00	14.58	0.80	13.79				1.0000	0.00						
1993	4.50	1.0450	59.62	0.00	1.0450	62.31	35.29	0.00	1.0450	36.88	0.00	0	16.55	1.25	0.00	15.30	0.83	14.46	0.00	1.0450	0.00			1.0450	0.00				
1994	4.50	1.0920	0.00	0.00	1.0920	0.00	4.41	0.00	1.0920	4.82	6.94	1	17.29	1.25	0.00	16.04	0.87	15.17	0.00	1.0920	11.92			1.0920	11.92				
1995	4.50	1.1412	0.00	0.00	1.1412	0.00	0.00	0.00	1.1412	0.00	6.94	2	18.07	1.25	0.00	16.82	0.91	15.91	0.00	1.1412	12.46			1.1412	12.46				
1996	4.50	1.1925	0.00	0.00	1.1925	0.00	0.00	0.00	1.1925	0.00	6.94	3	18.88	1.25	0.00	17.63	0.95	16.68	0.00	1.1925	13.02			1.1925	13.02				
1997	4.50	1.2462	0.00	0.00	1.2462	0.00	0.00	0.00	1.2462	0.00	6.94	4	19.73	1.25	0.00	18.48	0.99	17.49	0.00	1.2462	13.61			1.2462	13.61				
1998	4.50	1.3023	0.00	0.00	1.3023	0.00	0.00	0.00	1.3023	0.00	5.46	5	20.62	1.25	0.00	19.37	1.04	18.33	0.00	1.3023	14.22			1.3023	14.22				
1999	4.50	1.3609	0.00	0.00	1.3609	0.00	0.00	0.00	1.3609	0.00	4.47	6	21.55	1.25	0.00	20.30	1.08	19.21	0.00	1.3609	14.86			1.3609	14.86				
2000	4.50	1.4221	0.00	0.00	1.4221	0.00	0.00	0.00	1.4221	0.00	3.83	7	22.52	1.25	0.00	21.27	1.13	20.13	0.00	1.4221	15.53			1.4221	15.53				
2001	4.50	1.4861	0.00	0.00	1.4861	0.00	0.00	0.00	1.4861	0.00	3.24	8	23.53	1.25	0.00	22.28	1.18	21.10	0.00	1.4861	16.23			1.4861	16.23				
2002	4.50	1.5530	0.00	0.00	1.5530	0.00	0.00	0.00	1.5530	0.00	2.77	9	24.59	1.25	0.00	23.34	1.24	22.10	0.00	1.5530	16.96			1.5530	16.96				
2003	4.50	1.6229	0.00	0.00	1.6229	0.00	0.00	0.00	1.6229	0.00	2.38	10	25.70	1.25	0.00	24.45	1.29	23.15	0.00	1.6229	17.72			1.6229	17.72				
2004	4.50	1.6959	0.00	0.00	1.6959	0.00	0.00	0.00	1.6959	0.00	2.06	11	26.85	1.25	0.00	25.60	1.35	24.25	0.00	1.6959	18.52			1.6959	18.52				
2005	4.50	1.7722	0.00	0.00	1.7722	0.00	0.00	0.00	1.7722	0.00	1.80	12	28.06	1.25	0.00	26.81	1.41	25.40	0.00	1.7722	19.35			1.7722	19.35				
2006	4.50	1.8519	0.00	0.00	1.8519	0.00	0.00	0.00	1.8519	0.00	1.57	13	29.32	1.25	0.00	28.07	1.48	26.60	-25.00	1.8519	15.39			1.8519	15.39				
2007	4.50	1.9353	0.00	0.00	1.9353	0.00	0.00	0.00	1.9353	0.00	1.39	14	30.64	1.25	0.00	29.39	1.54	27.85	-25.00	1.9353	12.23			1.9353	12.23				
2008	4.50	2.0224	0.00	0.00	2.0224	0.00	0.00	0.00	2.0224	0.00	0.69	15	32.02	1.25	0.00	30.77	1.61	29.16	-30.00	2.0224	9.11			2.0224	9.11				
2009	4.50	2.1134	0.00	0.00	2.1134	0.00	0.00	0.00	2.1134	0.00	0.58	16	33.46	1.25	0.00	32.21	1.68	30.53	-30.00	2.1134	6.79			2.1134	6.79				
2010	4.50	2.2085	0.00	0.00	2.2085	0.00	0.00	0.00	2.2085	0.00	0.00	16	34.97	1.25	0.00	33.72	1.76	31.96	-30.00	2.2085	0.00			2.2085	0.00				
2011	4.50	2.3079	0.00	0.00	2.3079	0.00	0.00	0.00	2.3079	0.00	0.00	16	36.54	1.25	0.00	35.29	1.84	33.45	-30.00	2.3079	0.00			2.3079	0.00				
2012	4.50	2.4117	0.00	0.00	2.4117	0.00	0.00	0.00	2.4117	0.00	0.00	16	38.19	1.25	0.00	36.94	1.92	35.01	-30.00	2.4117	0.00			2.4117	0.00				
2013	4.50	2.5202	0.00	0.00	2.5202	0.00	0.00	0.00	2.5202	0.00	0.00	16	39.91	1.25	0.00	38.66	2.01	36.65	-30.00	2.5202	0.00			2.5202	0.00				
2014	4.50	2.6337	0.00	0.00	2.6337	0.00	0.00	0.00	2.6337	0.00	0.00	16	41.70	1.25	0.00	40.45	2.10	38.35	-30.00	2.6337	0.00			2.6337	0.00				
2015	4.50	2.7522	0.00	0.00	2.7522	0.00	0.00	0.00	2.7522	0.00	0.00	16	43.58	1.25	0.00	42.33	2.19	40.13	-30.00	2.7522	0.00			2.7522	0.00				
2016	4.50	2.8760	0.00	0.00	2.8760	0.00	0.00	0.00	2.8760	0.00	0.00	16	45.54	1.25	0.00	44.29	2.29	42.00	-30.00	2.8760	0.00			2.8760	0.00				
2017	4.50	3.0054	0.00	0.00	3.0054	0.00	0.00	0.00	3.0054	0.00	0.00	16	47.59	1.25	0.00	46.34	2.40	43.94	-30.00	3.0054	0.00			3.0054	0.00				
2018	4.50	3.1407	0.00	0.00	3.1407	0.00	0.00	0.00	3.1407	0.00	0.00	16	49.73	1.25	0.00	48.48	2.50	45.98	-30.00	3.1407	0.00			3.1407	0.00				
2019	4.50	3.2820	0.00	0.00	3.2820	0.00	0.00	0.00	3.2820	0.00	0.00	16	51.97	1.25	0.00	50.72	2.62	48.10	-30.00	3.2820	0.00			3.2820	0.00				
2020	4.50	3.4297	0.00	0.00	3.4297	0.00	0.00	0.00	3.4297	0.00	0.00	16	54.31	1.25	0.00	53.06	2.73	50.32	-30.00	3.4297	0.00			3.4297	0.00				
2021	4.50	3.5840	0.00	0.00	3.5840	0.00	0.00	0.00	3.5840	0.00	0.00	16	56.75	1.25	0.00	55.50	2.86	52.64	-30.00	3.5840	0.00			3.5840	0.00				
											89.74	46.11	58.00																

NSAKUK

VAR OPER COST CONS \$ ESCAL RATE PCT/Y	VAR OPER COST CURR \$ ESCAL FACTOR	VAR OPER COST NM\$'S CURRENT	WORK OVER COST CONS \$ ESCAL RATE PCT/Y	WORK OVER COST CURR \$ ESCAL FACTOR	PRODN WELLS FOR ELF CALCS	TOT WELLS FOR WORK OVER ROTATION CALCS	WORK OVER COST NM\$'S CURRENT	FIELD PIPE PROFIT \$'S/DBL CURRENT	TAPS PROFIT \$'S/DBL CURRENT
0.00	1.0000	0.00	1.0000	0	0	0.1000	0.00	0.00	0.00
0.00	1.0450	0.00	1.0450	0	0	0.1000	0.00	0.00	0.00
0.00	1.0920	2.27	1.0920	8	14	0.1000	0.00	0.00	0.00
0.00	1.1412	2.38	1.1412	8	14	0.1000	0.00	0.00	0.00
0.00	1.1925	2.48	1.1925	8	14	0.1000	0.00	0.00	0.00
0.00	1.2462	2.59	1.2462	8	14	0.1000	0.00	0.00	0.00
0.00	1.3023	2.13	1.3023	8	14	0.1000	1.55	0.00	0.00
0.00	1.3609	1.82	1.3609	8	14	0.1000	1.62	0.00	0.00
0.00	1.4221	1.63	1.4221	8	14	0.1000	1.69	0.00	0.00
0.00	1.4861	1.44	1.4861	8	14	0.1000	1.77	0.00	0.00
0.00	1.5530	1.29	1.5530	7	14	0.1000	1.85	0.00	0.00
0.00	1.6229	1.16	1.6229	7	14	0.1000	1.93	0.00	0.00
0.00	1.6959	1.05	1.6959	7	14	0.1000	2.02	0.00	0.00
0.00	1.7722	0.96	1.7722	7	14	0.1000	2.11	0.00	0.00
0.00	1.8519	0.87	1.8519	6	14	0.1000	2.20	0.00	0.00
0.00	1.9353	0.81	1.9353	6	14	0.1000	2.30	0.00	0.00
0.00	2.0224	0.42	2.0224	6	14	0.1000	2.41	0.00	0.00
0.00	2.1134	0.37	2.1134	6	14	0.1000	2.51	0.00	0.00
0.00	2.2085	0.00	2.2085	0	0	0.1000	0.00	0.00	0.00
0.00	2.3079	0.00	2.3079	0	0	0.1000	0.00	0.00	0.00
0.00	2.4117	0.00	2.4117	0	0	0.1000	0.00	0.00	0.00
0.00	2.5202	0.00	2.5202	0	0	0.1000	0.00	0.00	0.00
0.00	2.6337	0.00	2.6337	0	0	0.1000	0.00	0.00	0.00
0.00	2.7522	0.00	2.7522	0	0	0.1000	0.00	0.00	0.00
0.00	2.8760	0.00	2.8760	0	0	0.1000	0.00	0.00	0.00
0.00	3.0054	0.00	3.0054	0	0	0.1000	0.00	0.00	0.00
0.00	3.1407	0.00	3.1407	0	0	0.1000	0.00	0.00	0.00
0.00	3.2820	0.00	3.2820	0	0	0.1000	0.00	0.00	0.00
0.00	3.4297	0.00	3.4297	0	0	0.1000	0.00	0.00	0.00
0.00	3.5840	0.00	3.5840	0	0	0.1000	0.00	0.00	0.00

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR

INCREMENTAL ANALYSIS

RELATIVE YEAR	PROD N	FIELD PS 81 GROSS WELLHEAD PRICE	GROSS INCOME	CAPITAL COSTS	OPER COSTS	NET PNTS TO AK STATE GOVT	NET PNTS TO US FED GOVT	NET PNTS TO FINAN COMMUN	CO NET CASHFLOW	NET PNTS TO AK STATE GOVT	NET PNTS TO US FED GOVT	CO NET CASHFLOW
	VOLUME	*PIPE PR \$'S/BDL	NH\$'S	NH\$'S	NH\$'S	NH\$'S	NH\$'S	NH\$'S	NH\$'S	NH\$'S	NH\$'S	NH\$'S
	NH\$'S	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT
1992	0.00	14.58	0.00	31.84	0.00	0.40	-3.67	0.00	-28.58	0.40	-3.67	-28.58
1993	0.00	15.30	0.00	99.19	0.00	1.48	-13.00	0.00	-87.66	1.48	-13.00	-87.66
1994	6.94	16.04	111.33	4.82	14.20	16.04	21.62	0.00	54.65	16.04	21.62	54.65
1995	6.94	16.82	116.73	0.00	14.84	16.73	20.81	0.00	64.34	16.73	20.81	64.34
1996	6.94	17.63	122.37	0.00	15.51	17.46	24.08	0.00	65.32	17.46	24.08	65.32
1997	6.94	18.48	128.27	0.00	16.20	18.21	26.90	0.00	66.96	18.21	26.90	66.96
1998	5.46	19.37	105.76	0.00	17.90	14.74	21.01	0.00	52.11	14.74	21.01	52.11
1999	4.47	20.30	90.73	0.00	18.30	12.73	16.93	0.00	42.76	12.73	16.93	42.76
2000	3.83	21.27	81.45	0.00	18.86	11.48	14.45	0.00	36.67	11.48	14.45	36.67
2001	3.24	22.28	72.19	0.00	19.44	10.22	12.79	0.00	29.75	10.22	12.79	29.75
2002	2.77	23.34	64.65	0.00	20.10	9.16	11.60	0.00	23.80	9.16	11.60	23.80
2003	2.38	24.45	58.18	0.00	20.81	8.23	9.53	0.00	19.61	8.23	9.53	19.61
2004	2.06	25.60	52.74	0.00	21.59	7.42	7.74	0.00	15.99	7.42	7.74	15.99
2005	1.80	26.81	48.26	0.00	22.42	6.72	6.22	0.00	12.90	6.72	6.22	12.90
2006	1.57	28.07	44.08	0.00	18.46	6.11	6.38	0.00	13.12	6.11	6.38	13.12
2007	1.39	29.39	40.86	0.00	15.34	5.60	6.55	0.00	13.36	5.60	6.55	13.36
2008	0.69	30.77	21.23	0.00	11.94	2.95	2.05	0.00	4.30	2.95	2.05	4.30
2009	0.58	32.21	18.68	0.00	9.67	2.48	2.13	0.00	4.40	2.48	2.13	4.40
2010	0.00	33.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	35.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	36.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	38.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	40.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	42.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	44.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	46.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	48.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	50.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	53.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	55.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	58.00	PV AMORT PRICE	1177.50	135.85	275.57	168.16	194.11	0.00	403.81	168.16	194.11	403.81
NPV'S	BEG YR 1	\$'S/BDL										
0 PCT	0.00	20.30	1177.50	135.85	275.57	168.16	194.11	0.00	403.81	168.16	194.11	403.81
5.00	40.57	19.64	796.67	124.45	169.16	114.47	130.19	0.00	258.41	114.47	130.19	258.41
10.00	29.66	19.11	566.91	114.54	110.48	81.96	90.97	0.00	168.96	81.96	90.97	168.96
15.00	22.47	18.70	420.07	105.86	76.10	61.11	65.65	0.00	111.36	61.11	65.65	111.36
20.00	17.51	18.37	321.56	98.20	54.81	47.07	48.59	0.00	72.88	47.07	48.59	72.88
25.00	13.96	18.10	252.71	91.42	40.97	37.23	36.68	0.00	46.40	37.23	36.68	46.40

ROR % W/ FIN ---- 43.06

ROR % W/O FIN --- 43.06

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	CAPC	CAPC
	W/ FIN	W/O FIN
0 PCT	-----	-----
0.00	3.97	3.97
5.00	3.08	3.08
10.00	2.48	2.48
15.00	2.05	2.05
20.00	1.74	1.74
25.00	1.51	1.51

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

RELATIVE YEAR	PROD'n VOLUME	WELLHEAD PRICE \$/S/DBL	GROSS INCOME \$/S	CAPITAL COSTS \$/S	OPER COSTS \$/S	ECONOMIC RENT \$/S	AK STATE GOVT REVS W/O FIN \$/S	US FED GOVT REVS W/O FIN \$/S	CO NET CASHFLOW W/O FIN \$/S
1992	0.00	14.58	0.00	31.84	0.00	-31.84	0.40	-3.67	-28.58
1993	0.00	15.30	0.00	99.19	0.00	-99.19	1.48	-13.00	-87.66
1994	6.94	16.04	111.33	4.82	14.20	92.31	16.04	21.62	54.65
1995	6.94	16.82	116.73	0.00	14.84	101.89	16.73	20.81	64.34
1996	6.94	17.63	122.37	0.00	15.51	106.86	17.46	24.08	65.32
1997	6.94	18.48	128.27	0.00	16.20	112.06	18.21	26.90	66.96
1998	5.46	19.37	105.76	0.00	17.90	87.86	14.74	21.01	52.11
1999	4.47	20.30	90.73	0.00	18.30	72.43	12.73	16.93	42.76
2000	3.83	21.27	81.45	0.00	18.86	62.60	11.48	14.45	36.67
2001	3.24	22.28	72.19	0.00	19.44	52.75	10.22	12.79	29.75
2002	2.77	23.34	64.65	0.00	20.10	44.55	9.16	11.60	23.80
2003	2.38	24.45	58.18	0.00	20.81	37.37	8.23	9.53	19.61
2004	2.06	25.60	52.74	0.00	21.59	31.16	7.42	7.74	15.99
2005	1.80	26.81	48.26	0.00	22.42	25.84	6.72	6.22	12.90
2006	1.57	28.07	44.08	0.00	18.46	25.61	6.11	6.38	13.12
2007	1.39	29.39	40.86	0.00	15.34	25.52	5.60	6.55	13.36
2008	0.69	30.77	21.23	0.00	11.94	9.30	2.95	2.05	4.30
2009	0.58	32.21	18.68	0.00	9.67	9.01	2.48	2.13	4.40
2010	0.00	33.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	35.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	36.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	38.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	40.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	42.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	44.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	46.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	48.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	50.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	53.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	55.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	58.00	PV AMORT PRICE	1177.50	135.85	275.57	766.08	168.16	194.11	403.81
NPV'S BEG YR 1	\$/S/DBL								
0 PCT	0.00	58.00	20.30	1177.50	135.85	275.57	766.08	168.16	194.11
5.00	40.57	19.64	796.67	124.45	169.16	503.06	114.47	130.19	258.41
10.00	29.66	19.11	566.91	114.54	110.48	341.89	81.96	90.97	168.96
15.00	22.47	18.70	420.07	105.86	76.10	238.12	61.11	65.65	111.36
20.00	17.51	18.37	321.56	98.20	54.81	168.54	47.07	48.59	72.88
25.00	13.96	18.10	252.71	91.42	40.97	120.31	37.23	36.68	46.40

PER DBL PV'S	0 PCT	5.00	10.00	15.00	20.00	25.00
0.00	20.30	2.34	4.75	13.21	2.90	3.35
5.00	19.64	3.07	4.17	12.40	2.82	3.21
10.00	19.11	3.86	3.72	11.53	2.76	3.07
15.00	18.70	4.71	3.39	10.60	2.72	2.92
20.00	18.37	5.61	3.13	9.63	2.69	2.78
25.00	18.10	6.55	2.93	8.62	2.67	2.63
PERCENTAGE DIVISION OF PV ECON RENT	0 PCT	5.00	10.00	15.00	20.00	25.00
0.00	100.00	21.95	25.34	52.71		
5.00	100.00	22.75	25.88	51.37		
10.00	100.00	23.97	26.61	49.42		
15.00	100.00	25.66	27.57	46.77		
20.00	100.00	27.93	28.83	43.24		
25.00	100.00	30.95	30.49	38.57		
PAY OUT TIME IN YEARS	3.96					
ROR % W/O FIN	43.06					
PROFITABILITY RATIOS W/O FIN	0 PCT	5.00	10.00	15.00	20.00	25.00
(PVNCF+PVCAPC)	0.00	3.97				
	5.00	3.08				
PVCAPC	10.00	2.48				
	15.00	2.05				
	20.00	1.74				
	25.00	1.51				
MAX CASH EXPOSURE \$/S CURRENT	-116.24					
W/O FIN						

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR

INCREMENTAL ANALYSIS

RELATIVE YEAR	FIELD PS 81 GROSS WELLHEAD PRICE	PROD M VOLUME	PIPE \$'S/DBL	PR CONSTANT	GROSS INCOME MM\$'S	CAPITAL COSTS MM\$'S	OPER COSTS MM\$'S	NET PNTS TO AK STATE MM\$'S	NET PNTS TO US FED MM\$'S	NET PNTS TO FINAN COMMUN MM\$'S	CO NET CASHFLOW MM\$'S	NET PNTS TO AK STATE MM\$'S	NET PNTS TO US FED MM\$'S	CO NET CASHFLOW MM\$'S
		MMB/Y			CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
1992	0.00	14.58	0.00	31.84	0.00	0.40	-3.67	0.00	-28.58	0.40	-3.67	-28.58		
1993	0.00	14.64	0.00	94.92	0.00	1.42	-12.44	0.00	-83.89	1.42	-12.44	-83.89		
1994	6.94	14.69	101.94	4.41	13.00	14.68	19.80	0.00	50.05	14.68	19.80	50.05		
1995	6.94	14.74	102.29	0.00	13.00	14.66	18.24	0.00	56.38	14.66	18.24	56.38		
1996	6.94	14.79	102.61	0.00	13.00	14.64	20.20	0.00	54.78	14.64	20.20	54.78		
1997	6.94	14.83	102.93	0.00	13.00	14.61	21.58	0.00	53.73	14.61	21.58	53.73		
1998	5.46	14.87	81.21	0.00	13.75	11.32	16.13	0.00	40.01	11.32	16.13	40.01		
1999	4.47	14.92	66.67	0.00	13.45	9.36	12.44	0.00	31.42	9.36	12.44	31.42		
2000	3.83	14.96	57.28	0.00	13.26	8.07	10.16	0.00	25.79	8.07	10.16	25.79		
2001	3.24	14.99	48.58	0.00	13.08	6.87	8.60	0.00	20.02	6.87	8.60	20.02		
2002	2.77	15.03	41.63	0.00	12.94	5.90	7.47	0.00	15.32	5.90	7.47	15.32		
2003	2.38	15.06	35.85	0.00	12.82	5.07	5.87	0.00	12.08	5.07	5.87	12.08		
2004	2.06	15.10	31.10	0.00	12.73	4.38	4.57	0.00	9.43	4.38	4.57	9.43		
2005	1.80	15.13	27.23	0.00	12.65	3.79	3.51	0.00	7.28	3.79	3.51	7.28		
2006	1.57	15.16	23.80	0.00	9.97	3.30	3.45	0.00	7.08	3.30	3.45	7.08		
2007	1.39	15.19	21.11	0.00	7.93	2.89	3.39	0.00	6.91	2.89	3.39	6.91		
2008	0.69	15.22	10.50	0.00	5.90	1.46	1.01	0.00	2.12	1.46	1.01	2.12		
2009	0.58	15.24	8.84	0.00	4.58	1.17	1.01	0.00	2.08	1.17	1.01	2.08		
2010	0.00	15.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2011	0.00	15.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2012	0.00	15.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2013	0.00	15.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2014	0.00	15.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2015	0.00	15.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2016	0.00	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2017	0.00	15.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2018	0.00	15.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2019	0.00	15.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2020	0.00	15.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2021	0.00	15.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
TOTAL	58.00	PV AMORT PRICE	863.57	131.17	185.07	124.00	141.31	0.00	282.03	124.00	141.31	282.03		
NPV'S BEG YR 1		\$'S/DBL												
0 PCT														
0.00	58.00	14.89	863.57	131.17	185.07	124.00	141.31	0.00	282.03	124.00	141.31	282.03		
5.00	40.57	14.86	602.93	120.23	118.02	87.13	96.87	0.00	180.67	87.13	96.87	180.67		
10.00	29.66	14.84	440.22	110.71	79.80	64.04	68.82	0.00	116.85	64.04	68.82	116.85		
15.00	22.47	14.82	333.07	102.36	56.66	48.77	50.27	0.00	75.01	48.77	50.27	75.01		
20.00	17.51	14.81	259.29	95.00	41.89	38.22	37.51	0.00	46.67	38.22	37.51	46.67		
25.00	13.96	14.80	206.59	88.48	32.01	30.66	28.45	0.00	26.99	30.66	28.45	26.99		

ROR % W/ FIN ---- 36.90

ROR % W/O FIN --- 36.90

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	----	----
	CAPC	CAPC
	W/ FIN	W/O FIN
0 PCT	-----	-----
0.00	3.15	3.15
5.00	2.50	2.50
10.00	2.06	2.06
15.00	1.73	1.73
20.00	1.49	1.49
25.00	1.31	1.31

MIKUR

RELATIVE YEAR	FIELD PS 81 GROSS WELLHEAD										AK STATE	US FED	CO
	PROB'D VOLUME MMB/Y	PIPE PR \$/S/BDL CONSTANT	PRICE \$/S/BDL CONSTANT	GROSS INCOME MM\$'S CONSTANT	CAPITAL COSTS MM\$'S CONSTANT	OPER COSTS MM\$'S CONSTANT	ECONOMIC RENT MM\$'S CONSTANT	GOVT	GOVT	CASHFLOW			
								W/O FIN	W/O FIN	W/O FIN			
								MM\$'S CONSTANT	MM\$'S CONSTANT	MM\$'S CONSTANT			
1992	0.00	14.58	0.00	31.84	0.00	-31.84	0.40	-3.67	-28.58				
1993	0.00	14.64	0.00	94.92	0.00	-94.92	1.42	-12.44	-83.89				
1994	6.94	14.69	101.94	4.41	13.00	84.53	14.68	19.80	50.05				
1995	6.94	14.74	102.29	0.00	13.00	89.28	14.66	19.24	56.38				
1996	6.94	14.79	102.61	0.00	13.00	89.61	14.64	20.20	54.78				
1997	6.94	14.83	102.93	0.00	13.00	89.92	14.61	21.58	53.73				
1998	5.46	14.87	81.21	0.00	13.75	67.46	11.32	16.13	40.01				
1999	4.47	14.92	66.67	0.00	13.45	53.22	9.36	12.44	31.42				
2000	3.83	14.96	57.28	0.00	13.26	44.02	8.07	10.16	25.79				
2001	3.24	14.99	48.58	0.00	13.08	35.49	6.87	8.60	20.02				
2002	2.77	15.03	41.63	0.00	12.94	28.69	5.90	7.47	15.32				
2003	2.38	15.06	35.85	0.00	12.82	23.03	5.07	5.87	12.08				
2004	2.06	15.10	31.10	0.00	12.73	18.37	4.38	4.57	9.43				
2005	1.80	15.13	27.23	0.00	12.65	14.58	3.79	3.51	7.28				
2006	1.57	15.16	23.80	0.00	9.97	13.83	3.30	3.45	7.08				
2007	1.39	15.19	21.11	0.00	7.93	13.18	2.89	3.39	6.91				
2008	0.69	15.22	10.50	0.00	5.90	4.60	1.46	1.01	2.12				
2009	0.58	15.24	8.84	0.00	4.58	4.26	1.17	1.01	2.08				
2010	0.00	15.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2011	0.00	15.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2012	0.00	15.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2013	0.00	15.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2014	0.00	15.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2015	0.00	15.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2016	0.00	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2017	0.00	15.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2018	0.00	15.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2019	0.00	15.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2020	0.00	15.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2021	0.00	15.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
TOTAL	58.00	PV	AMORT	863.57	131.17	185.07	547.34	124.00	141.31	282.03			
		PRICE											
NPV'S	BEG	YR 1											
0 PCT		\$/S/BDL											
0.00	58.00	14.89	863.57	131.17	185.07	547.34	124.00	141.31	282.03				
5.00	40.57	14.86	602.93	120.23	118.02	364.68	87.13	96.87	180.67				
10.00	29.66	14.84	440.22	110.71	79.80	249.71	64.04	68.82	116.85				
15.00	22.47	14.82	333.07	102.36	56.66	174.04	48.77	50.27	75.01				
20.00	17.51	14.81	259.29	95.00	41.89	122.40	38.22	37.51	46.67				
25.00	13.96	14.80	206.59	88.48	32.01	86.10	30.66	28.45	26.99				

	FIELD PS #1 GROSS WELLHEAD PRICE PIPE PR \$/S/BDL CONSTANT	CAPITAL COSTS MM\$/S CONSTANT	OPEN ECONOMIC COSTS MM\$/S CONSTANT	RENT MM\$/S CONSTANT	STATE GOVT REVS M/O FIN MM\$/S CONSTANT	FED GOVT REVS M/O FIN MM\$/S CONSTANT	CO NET CASHFLOW M/O FIN MM\$/S CONSTANT
PER BDL PV'S							
0 PCT							
0.00	14.89	2.26	3.19	9.44	2.14	2.44	4.86
5.00	14.86	2.96	2.91	8.99	2.15	2.39	4.45
10.00	14.84	3.73	2.69	8.42	2.16	2.32	3.94
15.00	14.82	4.56	2.52	7.75	2.17	2.24	3.34
20.00	14.81	5.43	2.39	6.99	2.18	2.14	2.67
25.00	14.80	6.31	2.29	6.17	2.20	2.04	1.93

PERCENTAGE DIVISION OF PV ECON RENT				0 PCT			
				0.00	100.00	22.66	51.53
				5.00	100.00	23.89	49.54
				10.00	100.00	25.64	46.80
				15.00	100.00	28.02	43.10
				20.00	100.00	31.23	38.13
				25.00	100.00	35.61	31.35

PAY OUT TIME IN YEARS	4.11						
ROR % M/O FIN	36.90						

PROFITABILITY RATIOS M/O FIN				0 PCT			
(PVNCF+PVCAPC)	0.00	3.15					
	5.00	2.50					
PVCAPC	10.00	2.06					
	15.00	1.73					
	20.00	1.49					
	25.00	1.31					

MAX CASH EXPOSURE MM\$/S CONSTANT	-112.47						
M/O FIN							

STATE OF ALASKA DEPT. OF REVENUE
PETROLEUM RESEARCH SECTION

ECONOMIC FEASIBILITY MODEL: ALASKA NORTH SLOPE OIL FIELD DEVELOPMENT DECISION

NOTE: ANALYSIS OF DEVELOPMENT FEASIBILITY ONLY, IGNORES SUNK COSTS OF GAS AND EXPLORATION IN CAPITAL COSTS

PUBLIC VERSION: EQUIVALENT AMORTIZED ECONOMIC RENT FOR HYPOTHETICAL FIELD

FOR MORE INFORMATION CONTACT CHUCK LOGSDON AT (907) 277-5627

WATERFRAME MODEL REQUIRED FOR ENHANCED RECOVERY ANALYSIS, SIMULTANEOUS MULTI-FIELD SUPPLY ANALYSIS AND SHUTDOWN ANALYSIS

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FIELD INPUT ASSUMPTIONS      ANALYSIS OPTIONS      0
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FIELD NAME:                  HURL STATE ANALOG INCREMENTAL - ONGOING OPERATOR = 0
-----
FIELD ASSUMPTIONS:          -----
FISCAL: AK/US                STAND ALONE - NEW INVESTOR = 1
PROPORTION PRODN AK LEASES    1.0000
AK ROYALTY RATE               0.1250
AK NET PROFIT BONUS ROY RATE  0.0000
AK SEV TAX NON RATE 1ST 5 YRS 0.1500
AK SEV TAX NON RATE YR 6 ON  0.1500
AK PROPERTY TAX RATE         0.0200
AK ST CORP TAX EFF RATE      0.0140
PROPORTION PRODN US FED LEASES 0.0000
US FED ROYALTY RATE          0.0000
US FED CORP TAX EFF RATE     0.3400
COST:
TOTAL LEASE ACQUIS COST HH$'S HISTOR 0.0000 FOR CALC LEASE AMORT / DEPLETION
FIXED OPER COST HH$'S CONSTANT 0.00
VARIABLE OPER COST $'S/BDL CONSTANT 2.50
PRODN YEAR TO START WORKOVERS 4
WORKOVER COST HH$'S/WELL CONSTANT 0.75
WORKOVER ROTATION FACTOR N/A
PROPORTION WELL CAPITAL COST INTANG 0.7000
PROPORTION FACIL CAPITAL COST INTANG 0.3000
AK PTY TAX TR ORIG CO ANN ESCAL RATE 0.0500
FINANCING: ASSUMED PROPORTION OF CAPITAL COST OBTAINED AT BEG OF EACH YEAR
PROPORTION OF CAPITAL COST DEBT 0.0000
CURRENT $ INTEREST RATE ON DEBT 0.1000
TERM OF DEBT IN YEARS 10
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COMMENTS:

HURL STATE ANALOG BASE CASE / BASE YEAR 1990
PRUDHOE BAY INCREMENTAL INVESTMENT FEASIBILITY
FOR ONGOING OPERATOR

CONSTANT \$'S = 1990 \$'S
CURRENT \$'S = \$'S OF THE DAY
INFLATION ASSUMED 4.5% PER YEAR FROM 1990

FIELD INPUT ASSUMPTIONS TABLE BY YEAR

HURL STATE ANALOG

INFLATION			FACILITY CAPITAL				WELL CAPITAL				PRUDHOE BAY OIL		FIELD		FIELD		FIELD		FIELD		FIXED		FIXED	
RELATIVE	RATE	INFLATION	FACILITY	COST	FACILITY	WELL	WELL	COST	CAPITAL	WELL	PRODN	RELATIVE	PRICE	TARIFF	QUALITY	GROSS	COSTS	ROY	ROY	OPEN	OPEN	FIXED	FIXED	
YEAR	PCI/Y	FACTOR	HH\$'S	ESCAL	CURR \$	HH\$'S	HH\$'S	ESCAL	CURR \$	HH\$'S	VOLUME	PRODN	\$'/BBL	\$'/BBL	\$'/BBL	\$'/BBL	\$'/BBL	\$'/BBL	\$'/BBL	COST \$	COST \$	HH\$'S	HH\$'S	
			CONSTANT	PCI/Y	FACTOR	CURRENT	CONSTANT	PCI/Y	FACTOR	CURRENT	HHBBL/Y	YEAR	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	RATE	ESCAL	HH\$'S	HH\$'S	
1990		1.0000	50.00		1.0000	50.00	0.00		1.0000	0.00	0.00	0	14.50	0.00	0.00	14.50	0.73	13.77			1.0000	0.00	0.00	
1991	4.50	1.0450	12.00	0.00	1.0450	12.54	20.00	0.00	1.0450	20.90	2.50	1	15.15	0.00	0.00	15.15	0.76	14.39	0.00		1.0450	0.00	0.00	
1992	4.50	1.0920	0.00	0.00	1.0920	0.00	6.00	0.00	1.0920	6.55	5.00	2	15.83	0.00	0.00	15.83	0.80	15.04	0.00		1.0920	0.00	0.00	
1993	4.50	1.1412	0.00	0.00	1.1412	0.00	0.00	0.00	1.1412	0.00	5.00	3	16.55	0.00	0.00	16.55	0.83	15.71	0.00		1.1412	0.00	0.00	
1994	4.50	1.1925	0.00	0.00	1.1925	0.00	0.00	0.00	1.1925	0.00	4.25	4	17.29	0.00	0.00	17.29	0.87	16.42	0.00		1.1925	0.00	0.00	
1995	4.50	1.2462	0.00	0.00	1.2462	0.00	0.00	0.00	1.2462	0.00	3.61	5	18.07	0.00	0.00	18.07	0.91	17.16	0.00		1.2462	0.00	0.00	
1996	4.50	1.3023	0.00	0.00	1.3023	0.00	0.00	0.00	1.3023	0.00	3.07	6	18.88	0.00	0.00	18.88	0.95	17.93	0.00		1.3023	0.00	0.00	
1997	4.50	1.3609	0.00	0.00	1.3609	0.00	0.00	0.00	1.3609	0.00	2.61	7	19.73	0.00	0.00	19.73	0.99	18.74	0.00		1.3609	0.00	0.00	
1998	4.50	1.4221	0.00	0.00	1.4221	0.00	0.00	0.00	1.4221	0.00	2.22	8	20.62	0.00	0.00	20.62	1.04	19.58	0.00		1.4221	0.00	0.00	
1999	4.50	1.4861	0.00	0.00	1.4861	0.00	0.00	0.00	1.4861	0.00	1.89	9	21.55	0.00	0.00	21.55	1.08	20.46	0.00		1.4861	0.00	0.00	
2000	4.50	1.5530	0.00	0.00	1.5530	0.00	0.00	0.00	1.5530	0.00	1.60	10	22.52	0.00	0.00	22.52	1.13	21.38	0.00		1.5530	0.00	0.00	
2001	4.50	1.6229	0.00	0.00	1.6229	0.00	0.00	0.00	1.6229	0.00	1.30	11	23.53	0.00	0.00	23.53	1.18	22.35	0.00		1.6229	0.00	0.00	
2002	4.50	1.6959	0.00	0.00	1.6959	0.00	0.00	0.00	1.6959	0.00	1.10	12	24.59	0.00	0.00	24.59	1.24	23.35	0.00		1.6959	0.00	0.00	
2003	4.50	1.7722	0.00	0.00	1.7722	0.00	0.00	0.00	1.7722	0.00	0.95	13	25.70	0.00	0.00	25.70	1.29	24.40	0.00		1.7722	0.00	0.00	
2004	4.50	1.8519	0.00	0.00	1.8519	0.00	0.00	0.00	1.8519	0.00	0.80	14	26.85	0.00	0.00	26.85	1.35	25.50	0.00		1.8519	0.00	0.00	
2005	4.50	1.9353	0.00	0.00	1.9353	0.00	0.00	0.00	1.9353	0.00	0.60	15	28.06	0.00	0.00	28.06	1.41	26.65	0.00		1.9353	0.00	0.00	
2006	4.50	2.0224	0.00	0.00	2.0224	0.00	0.00	0.00	2.0224	0.00	0.50	16	29.32	0.00	0.00	29.32	1.48	27.85	-4.50		1.9353	0.00	0.00	
2007	4.50	2.1134	0.00	0.00	2.1134	0.00	0.00	0.00	2.1134	0.00	0.00	16	30.64	0.00	0.00	30.64	1.54	29.10	-4.50		1.9353	0.00	0.00	
2008	4.50	2.2085	0.00	0.00	2.2085	0.00	0.00	0.00	2.2085	0.00	0.00	16	32.02	0.00	0.00	32.02	1.61	30.41	-4.50		1.9353	0.00	0.00	
2009	4.50	2.3079	0.00	0.00	2.3079	0.00	0.00	0.00	2.3079	0.00	0.00	16	33.46	0.00	0.00	33.46	1.68	31.78	-4.50		1.9353	0.00	0.00	
2010	4.50	2.4117	0.00	0.00	2.4117	0.00	0.00	0.00	2.4117	0.00	0.00	16	34.97	0.00	0.00	34.97	1.76	33.21	-4.50		1.9353	0.00	0.00	
2011	4.50	2.5202	0.00	0.00	2.5202	0.00	0.00	0.00	2.5202	0.00	0.00	16	36.54	0.00	0.00	36.54	1.84	34.70	-4.50		1.9353	0.00	0.00	
2012	4.50	2.6337	0.00	0.00	2.6337	0.00	0.00	0.00	2.6337	0.00	0.00	16	38.19	0.00	0.00	38.19	1.92	36.27	-4.50		1.9353	0.00	0.00	
2013	4.50	2.7522	0.00	0.00	2.7522	0.00	0.00	0.00	2.7522	0.00	0.00	16	39.91	0.00	0.00	39.91	2.01	37.90	-4.50		1.9353	0.00	0.00	
2014	4.50	2.8760	0.00	0.00	2.8760	0.00	0.00	0.00	2.8760	0.00	0.00	16	41.70	0.00	0.00	41.70	2.10	39.60	-4.50		1.9353	0.00	0.00	
2015	4.50	3.0054	0.00	0.00	3.0054	0.00	0.00	0.00	3.0054	0.00	0.00	16	43.58	0.00	0.00	43.58	2.19	41.38	-4.50		1.9353	0.00	0.00	
2016	4.50	3.1407	0.00	0.00	3.1407	0.00	0.00	0.00	3.1407	0.00	0.00	16	45.54	0.00	0.00	45.54	2.29	43.25	-4.50		1.9353	0.00	0.00	
2017	4.50	3.2820	0.00	0.00	3.2820	0.00	0.00	0.00	3.2820	0.00	0.00	16	47.59	0.00	0.00	47.59	2.40	45.19	-4.50		1.9353	0.00	0.00	
2018	4.50	3.4297	0.00	0.00	3.4297	0.00	0.00	0.00	3.4297	0.00	0.00	16	49.73	0.00	0.00	49.73	2.50	47.23	-4.50		1.9353	0.00	0.00	
2019	4.50	3.5840	0.00	0.00	3.5840	0.00	0.00	0.00	3.5840	0.00	0.00	16	51.97	0.00	0.00	51.97	2.62	49.35	-4.50		1.9353	0.00	0.00	
											62.54			27.45			37.00							

MORE STAGE

1970

2019

VAR OPER COST CONS \$ ESCAL RATE PCI/Y	VAR OPER COST CURR \$ ESCAL FACTOR	VAR OPER COST NHS'S CURRENT	WORK OVER COST ESCAL RATE PCI/Y	WORK OVER COST CURR \$ ESCAL FACTOR	PROD WELLS FOR ELF CALCS	TOT WELLS FOR WORK OVER ROTATION FACTOR	WORK OVER COST NHS'S CURRENT	FIELD PIPE PROFIT \$'S/DBL CURRENT	TAPS PROFIT \$'S/DBL CURRENT
0.00	1.0000	0.00	0.00	1.0000	0	0	0.0000	0.00	0.00
0.00	1.0450	6.53	0.00	1.0450	7	10	0.0770	0.00	0.00
0.00	1.0920	13.65	0.00	1.0920	10	13	0.0770	0.00	0.00
0.00	1.1412	14.26	0.00	1.1412	10	13	0.0770	0.00	0.00
4.00	1.2382	13.16	0.00	1.1925	10	13	0.0770	0.90	0.00
4.00	1.3434	12.12	0.00	1.2462	10	13	0.0770	0.94	0.00
4.00	1.4576	11.19	0.00	1.3023	10	13	0.0770	0.98	0.00
4.00	1.5815	10.32	0.00	1.3609	10	13	0.0770	1.02	0.00
4.00	1.7159	9.52	0.00	1.4221	10	13	0.0770	1.07	0.00
4.00	1.8618	8.80	0.00	1.4861	9	13	0.0770	1.12	0.00
4.00	2.0200	8.08	0.00	1.5530	9	13	0.0770	1.17	0.00
4.00	2.1917	7.12	0.00	1.6229	9	13	0.0770	1.22	0.00
4.00	2.3780	6.54	0.00	1.6959	9	13	0.0770	1.27	0.00
4.00	2.5802	6.13	0.00	1.7722	9	13	0.0770	1.33	0.00
4.00	2.7995	5.60	0.00	1.8519	8	13	0.0770	1.39	0.00
4.00	3.0374	4.56	0.00	1.9353	7	13	0.0770	1.45	0.00
4.00	3.2956	4.12	0.00	2.0224	6	13	0.0770	1.52	0.00
4.00	3.5757	0.00	0.00	2.1134	0	0	0.0000	0.00	0.00
4.00	3.8797	0.00	0.00	2.2085	0	0	0.0000	0.00	0.00
4.00	4.2094	0.00	0.00	2.3079	0	0	0.0000	0.00	0.00
4.00	4.5672	0.00	0.00	2.4117	0	0	0.0000	0.00	0.00
4.00	4.9555	0.00	0.00	2.5202	0	0	0.0000	0.00	0.00
4.00	5.3767	0.00	0.00	2.6337	0	0	0.0000	0.00	0.00
4.00	5.8337	0.00	0.00	2.7522	0	0	0.0000	0.00	0.00
4.00	6.3296	0.00	0.00	2.8760	0	0	0.0000	0.00	0.00
4.00	6.8676	0.00	0.00	3.0054	0	0	0.0000	0.00	0.00
4.00	7.4513	0.00	0.00	3.1407	0	0	0.0000	0.00	0.00
4.00	8.0847	0.00	0.00	3.2820	0	0	0.0000	0.00	0.00
4.00	8.7719	0.00	0.00	3.4297	0	0	0.0000	0.00	0.00
4.00	9.5175	0.00	0.00	3.5840	0	0	0.0000	0.00	0.00

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

NUML STATE ANALOG	FIELD	PS 01	GROSS	WELLHEAD	PRICE	GROSS	CAPITAL	OPER	NET	NET	NET	NET	CO	NET	CO
RELATIVE	PRODNR	PIPE PR	INCOME	COSTS	COSTS	COSTS	COSTS	COSTS	PTS TO	PTS TO	PTS TO	PTS TO	PTS TO	PTS TO	PTS TO
YEAR	VOLUME	\$'S/BDL	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	AX STATE	US FED	FINAN	CASHFLOW	AX STATE	US FED	NET
	MMB/Y	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	W/ FIN	W/ FIN	COMMON	W/ FIN	W/O FIN	W/O FIN	W/O FIN
1990	0.00	14.50	0.00	50.00	0.00	0.69	-5.33	0.00	45.36	0.69	-5.33	-45.36			
1991	2.50	15.15	37.88	33.44	6.53	10.65	0.30	0.00	-12.44	10.65	-0.30	-12.44			
1992	5.00	15.83	79.17	6.55	13.65	21.15	9.39	0.00	28.43	21.15	9.39	28.43			
1993	5.00	16.55	82.73	0.00	14.26	22.00	12.27	0.00	34.20	22.00	12.27	34.20			
1994	4.25	17.29	73.49	0.00	14.05	19.58	10.92	0.00	28.94	19.58	10.92	28.94			
1995	3.61	18.07	65.23	0.00	13.06	17.42	9.82	0.00	24.93	17.42	9.82	24.93			
1996	3.07	18.88	57.97	0.00	12.16	15.50	8.48	0.00	21.82	15.50	8.48	21.82			
1997	2.61	19.73	51.50	0.00	11.34	13.79	7.34	0.00	19.03	13.79	7.34	19.03			
1998	2.22	20.62	45.78	0.00	10.59	12.25	6.98	0.00	15.96	12.25	6.98	15.96			
1999	1.89	21.55	40.73	0.00	9.91	10.88	6.75	0.00	13.19	10.88	6.75	13.19			
2000	1.60	22.52	36.03	0.00	9.25	9.57	5.85	0.00	11.36	9.57	5.85	11.36			
2001	1.30	23.53	30.59	0.00	8.34	8.11	4.81	0.00	9.33	8.11	4.81	9.33			
2002	1.10	24.59	27.05	0.00	7.81	7.04	4.15	0.00	8.05	7.04	4.15	8.05			
2003	0.95	25.70	24.41	0.00	7.46	6.20	3.66	0.00	7.10	6.20	3.66	7.10			
2004	0.80	26.85	21.48	0.00	6.99	5.27	3.13	0.00	6.08	5.27	3.13	6.08			
2005	0.60	28.06	16.84	0.00	6.01	3.97	2.33	0.00	4.53	3.97	2.33	4.53			
2006	0.50	29.32	14.66	0.00	5.64	3.17	1.99	0.00	3.87	3.17	1.99	3.87			
2007	0.00	30.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2008	0.00	32.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2009	0.00	33.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2010	0.00	34.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2011	0.00	36.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2012	0.00	38.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2013	0.00	39.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2014	0.00	41.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2015	0.00	43.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2016	0.00	45.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2017	0.00	47.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2018	0.00	49.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2019	0.00	51.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
TOTAL	37.00	19.07	705.5	89.99	157.06	187.24	92.23	0.00	179.03	187.24	92.23	179.03			
NPV'S BEG YR 1		\$'S/BDL													
0 PCT	0.00	37.00	19.07	705.5	89.99	157.06	187.24	92.23	0.00	179.03	187.24	92.23	179.03		
5.00	26.86	18.50	496.06	83.61	105.98	132.67	61.96	0.00	112.65	132.67	61.96	112.65			
10.00	20.34	18.04	366.99	78.01	75.56	98.48	43.39	0.00	71.54	98.48	43.39	71.54			
15.00	15.92	17.68	281.56	73.07	56.34	75.87	31.40	0.00	44.88	75.87	31.40	44.88			
20.00	12.80	17.39	222.68	68.68	43.54	60.23	23.30	0.00	26.93	60.23	23.30	26.93			
25.00	10.51	17.16	180.48	64.76	34.65	48.98	17.63	0.00	14.47	48.98	17.63	14.47			

ROR % W/ FIN 34.28

ROR % W/O FIN 34.28

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	CAPC	CAPC
	W/ FIN	W/O FIN
0 PCT	2.99	2.99
5.00	2.35	2.35
10.00	1.92	1.92
15.00	1.61	1.61
20.00	1.39	1.39
25.00	1.22	1.22

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

RELATIVE YEAR	PRODN VOLUME MMB/Y	PIPE PR \$'S/DBL CURRENT	GROSS INCOME MMS'S CURRENT	CAPITAL COSTS MMS'S CURRENT	OPER COSTS MMS'S CURRENT	ECONOMIC RENT MMS'S CURRENT	AK STATE GOVT W/O FIN CURRENT	US FED GOVT W/O FIN CURRENT	CO NET CASHFLOW MMS'S CURRENT
1990	0.00	14.50	0.00	50.00	0.00	-50.00	0.69	-5.33	-45.36
1991	2.50	15.15	37.88	33.44	6.53	-2.09	10.65	0.30	-12.44
1992	5.00	15.83	79.17	6.55	13.65	58.97	21.15	9.39	28.43
1993	5.00	16.55	82.73	0.00	14.26	68.47	22.00	12.27	34.20
1994	4.25	17.29	73.47	0.00	14.05	59.44	19.58	10.92	28.94
1995	3.61	18.07	65.23	0.00	13.06	52.17	17.42	9.82	24.93
1996	3.07	18.88	57.97	0.00	12.16	45.81	15.50	8.48	21.82
1997	2.61	19.73	51.50	0.00	11.34	40.16	13.79	7.34	19.03
1998	2.22	20.62	45.78	0.00	10.59	35.19	12.25	6.98	15.96
1999	1.89	21.55	40.73	0.00	9.91	30.81	10.88	6.75	13.19
2000	1.60	22.52	36.03	0.00	9.25	26.78	9.57	5.85	11.36
2001	1.30	23.53	30.59	0.00	8.34	22.25	8.11	4.81	9.33
2002	1.10	24.59	27.05	0.00	7.81	19.24	7.04	4.15	8.05
2003	0.95	25.70	24.41	0.00	7.46	16.95	6.20	3.66	7.10
2004	0.80	26.85	21.48	0.00	6.99	14.49	5.27	3.13	6.08
2005	0.60	28.06	16.84	0.00	6.01	10.83	3.97	2.33	4.53
2006	0.50	29.32	14.66	0.00	5.64	9.02	3.17	1.99	3.87
2007	0.00	30.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	32.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	33.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	34.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	36.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	38.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	39.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	41.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	43.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	45.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	47.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	49.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	51.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	37.00	PV AMORT PRICE	705.5	89.99	157.06	458.49	187.24	92.23	179.03
NPV'S REG YR 1		\$'S/DBL							
0 PCT	0.00	37.00	19.07	705.5	89.99	157.06	458.49	187.24	179.03
5.00	26.86	18.50	496.86	83.61	105.98	307.27	132.67	61.96	112.65
10.00	20.34	18.04	366.99	78.01	75.56	213.41	98.48	43.39	71.54
15.00	15.92	17.68	281.56	73.07	56.34	152.15	75.87	31.40	44.88
20.00	12.80	17.39	222.68	68.68	43.54	110.46	60.23	23.30	26.93
25.00	10.51	17.16	180.48	64.76	34.45	81.08	48.98	17.63	14.47

PER BRL PV'S	PIPE PR \$'S/DBL CURRENT	CAPITAL COSTS MMS'S CURRENT	OPER COSTS MMS'S CURRENT	ECONOMIC RENT MMS'S CURRENT	STATE GOVT W/O FIN CURRENT	FED GOVT W/O FIN CURRENT	CO NET CASHFLOW MMS'S CURRENT
0 PCT	19.07	2.43	4.24	12.39	5.06	2.49	4.84
5.00	18.50	3.11	3.94	11.44	4.94	2.31	4.19
10.00	18.04	3.84	3.71	10.49	4.84	2.13	3.52
15.00	17.68	4.59	3.54	9.55	4.76	1.97	2.82
20.00	17.39	5.36	3.40	8.63	4.70	1.82	2.10
25.00	17.16	6.16	3.29	7.71	4.66	1.68	1.38
PERCENTAGE DIVISION OF PV ECON RENT							
0 PCT	0.00	100.00	40.84	20.12	39.05		
5.00	100.00	43.17	20.16	36.66			
10.00	100.00	46.14	20.33	33.52			
15.00	100.00	49.87	20.64	29.50			
20.00	100.00	54.53	21.10	24.38			
25.00	100.00	60.41	21.75	17.84			
PAY OUT TIME IN YEARS							
		3.86					
ROR % W/O FIN							
		34.28					
PROFITABILITY RATIOS W/O FIN							
	0 PCT						
(PVNCI + PVCAPC)	0.00	2.99					
	5.00	2.35					
PVCAPC	10.00	1.92					
	15.00	1.61					
	20.00	1.39					
	25.00	1.27					
MAX CASH EXPOSURE MMS'S CURRENT W/O FIN							
		-57.79					

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

HURL STATE ANALOG	FIELD	PS 81	GROSS	NET	NET	NET	NET	NET	NET	NET	NET	CO
	WELLHEAD	PRICE	GROSS	CAPITAL	OPER	GOVT	GOVT	FINAN	CASHFLOW	GOVT	GOVT	CASHFLOW
RELATIVE	PRODN	PIPE PR	INCOME	COSTS	COSTS	W/ FIN	W/ FIN	COMMUN	W/ FIN	W/O FIN	W/O FIN	W/O FIN
YEAR	VOLUME	\$'S/DBL	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S
	MMB/Y	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
1990	0.00	14.50	0.00	50.00	0.00	0.69	-5.33	0.00	-45.36	0.69	-5.33	-45.36
1991	2.50	14.50	36.25	32.00	6.25	10.19	0.29	0.00	1.90	10.19	-0.29	-11.90
1992	5.00	14.50	72.50	6.00	12.50	19.37	8.59	0.00	26.03	19.37	8.59	26.03
1993	5.00	14.50	72.50	0.00	12.50	19.28	10.75	0.00	29.97	19.28	10.75	29.97
1994	4.25	14.50	61.63	0.00	11.78	16.42	9.15	0.00	24.27	16.42	9.15	24.27
1995	3.61	14.50	52.35	0.00	10.48	13.98	7.88	0.00	20.01	13.98	7.88	20.01
1996	3.07	14.50	44.52	0.00	9.34	11.90	6.51	0.00	16.76	11.90	6.51	16.76
1997	2.61	14.50	37.85	0.00	8.33	10.13	5.39	0.00	13.99	10.13	5.39	13.99
1998	2.22	14.50	32.19	0.00	7.45	8.61	4.91	0.00	11.22	8.61	4.91	11.22
1999	1.89	14.50	27.40	0.00	6.67	7.32	4.54	0.00	8.87	7.32	4.54	8.87
2000	1.60	14.50	23.20	0.00	5.95	6.16	3.77	0.00	7.31	6.16	3.77	7.31
2001	1.30	14.50	18.85	0.00	5.14	4.99	2.96	0.00	5.75	4.99	2.96	5.75
2002	1.10	14.50	15.95	0.00	4.61	4.15	2.45	0.00	4.75	4.15	2.45	4.75
2003	0.95	14.50	13.78	0.00	4.21	3.50	2.06	0.00	4.01	3.50	2.06	4.01
2004	0.80	14.50	11.60	0.00	3.77	2.85	1.69	0.00	3.29	2.85	1.69	3.29
2005	0.60	14.50	8.70	0.00	3.11	2.05	1.21	0.00	2.34	2.05	1.21	2.34
2006	0.50	14.50	7.25	0.00	2.79	1.57	0.98	0.00	1.91	1.57	0.98	1.91
2007	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	37.00	PV AMORT	536.50	88.00	114.88	143.17	67.23	0.00	123.21	143.17	67.23	123.21
NPV'S BEG YR I		PRICE										
0 PCT		\$'S/DBL										
0.00	37.00	14.50	536.50	88.00	114.88	143.17	67.23	0.00	123.21	143.17	67.23	123.21
5.00	26.86	14.50	389.53	81.83	80.34	104.50	46.20	0.00	76.66	104.50	46.20	76.66
10.00	20.34	14.50	294.96	76.41	59.04	79.48	32.91	0.00	47.13	79.48	32.91	47.13
15.00	15.92	14.50	230.91	71.62	45.12	62.46	24.11	0.00	27.60	62.46	24.11	27.60
20.00	12.80	14.50	185.63	67.36	35.59	50.39	18.03	0.00	14.26	50.39	18.03	14.26
25.00	10.51	14.50	152.47	63.55	28.79	41.52	13.70	0.00	4.90	41.52	13.70	4.90

ROR % W/ FIN ---- 28.50

ROR % W/O FIN -- 28.50

PROFITABILITY RATIOS

	(NCF + CAPC)	(NCF + CAPC)
	W/ FIN	W/O FIN
0 PCT	2.40	2.40
5.00	1.94	1.94
10.00	1.62	1.62
15.00	1.39	1.39
20.00	1.21	1.21
25.00	1.08	1.08

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

HURL STATE ANALOG	FIELD PS #1 GROSS WELLHEAD PRICE		AK STATE GOVT REVS							US FED GOVT REVS	CO NET CASHFLOW
RELATIVE YEAR	PROD N VOLUME HHB/Y	PIPE PR \$/S/BDL CONSTANT	GROSS INCOME HHB'S CONSTANT	CAPITAL COSTS HHB'S CONSTANT	OPER ECONOMIC COSTS HHB'S CONSTANT	ECONOMIC RENT HHB'S CONSTANT	W/O FIN HHB'S CONSTANT	W/O FIN HHB'S CONSTANT	W/O FIN HHB'S CONSTANT	W/O FIN HHB'S CONSTANT	
1990	0.00	14.50	0.00	50.00	0.00	-50.00	0.69	-5.33	-45.36		
1991	2.50	14.50	36.25	32.00	6.25	-2.00	10.19	0.29	-11.90		
1992	5.00	14.50	72.50	6.00	12.50	54.00	19.37	8.59	26.03		
1993	5.00	14.50	72.50	0.00	12.50	60.00	19.28	10.75	29.97		
1994	4.25	14.50	61.63	0.00	11.78	49.84	16.42	9.15	24.27		
1995	3.61	14.50	52.35	0.00	10.48	41.87	13.98	7.88	20.01		
1996	3.07	14.50	44.52	0.00	9.34	35.17	11.90	6.51	16.76		
1997	2.61	14.50	37.85	0.00	8.33	29.51	10.13	5.39	13.99		
1998	2.22	14.50	32.19	0.00	7.45	24.74	8.61	4.91	11.22		
1999	1.89	14.50	27.40	0.00	6.67	20.73	7.32	4.54	8.87		
2000	1.60	14.50	23.20	0.00	5.95	17.25	6.16	3.77	7.31		
2001	1.30	14.50	18.85	0.00	5.14	13.71	4.99	2.96	5.75		
2002	1.10	14.50	15.95	0.00	4.61	11.34	4.15	2.45	4.75		
2003	0.95	14.50	13.78	0.00	4.21	9.57	3.50	2.06	4.01		
2004	0.80	14.50	11.60	0.00	3.77	7.83	2.85	1.69	3.29		
2005	0.60	14.50	8.70	0.00	3.11	5.59	2.05	1.21	2.34		
2006	0.50	14.50	7.25	0.00	2.79	4.46	1.57	0.98	1.91		
2007	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2008	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2009	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2010	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2011	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2012	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2013	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2014	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2015	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2016	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2017	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2018	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2019	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
TOTAL	37.00	PV AMORT PRICE	536.50	88.00	114.88	333.62	143.17	67.23	123.21		
NPV'S BEG YR 1	\$/S/BDL										
# PCT											
0.00	37.00	14.50	536.50	88.00	114.88	333.62	143.17	67.23	123.21		
5.00	26.86	14.50	389.53	81.83	80.34	227.36	104.50	46.20	76.66		
10.00	20.34	14.50	294.96	76.41	59.04	159.52	79.48	32.91	47.13		
15.00	15.92	14.50	230.91	71.62	45.12	114.17	62.46	24.11	27.60		
20.00	12.80	14.50	185.63	67.36	35.59	82.68	50.39	18.03	14.26		
25.00	10.51	14.50	152.47	63.55	28.79	60.13	41.52	13.70	4.90		

	FIELD PS #1 GROSS WELLHEAD PRICE +PIPE PR \$/S/BDL CONSTANT	CAPITAL COSTS MM\$/S CONSTANT	OPER COSTS MM\$/S CONSTANT	ECONOMIC RENT MM\$/S CONSTANT	STATE GOVT REVS W/O FIN MM\$/S CONSTANT	FED GOVT REVS W/O FIN MM\$/S CONSTANT	CO NET CASHFLOW W/O FIN MM\$/S CONSTANT
PER BBL PV'S							
# PCT							
0.00	14.50	2.38	3.10	9.02	3.87	1.82	3.33
5.00	14.50	3.05	2.99	8.46	3.89	1.72	2.85
10.00	14.50	3.76	2.90	7.84	3.91	1.62	2.32
15.00	14.50	4.50	2.83	7.17	3.92	1.51	1.73
20.00	14.50	5.26	2.78	6.46	3.94	1.41	1.11
25.00	14.50	6.04	2.74	5.72	3.95	1.30	0.47

PERCENTAGE DIVISION OF PV ECON RENT			# PCT				
			0.00	100.00	42.91	20.15	36.93
			5.00	100.00	45.96	20.32	33.72
			10.00	100.00	49.83	20.63	29.54
			15.00	100.00	54.71	21.12	24.17
			20.00	100.00	60.94	21.81	17.25
			25.00	100.00	69.06	22.79	8.16

PAY OUT TIME IN YEARS	-----	4.05					
ROR 1 W/O FIN	-----	28.50					

PROFITABILITY RATIOS W/O FIN	-----		# PCT				
(PVNCF/PVCAFC)	0.00	2.40					
	5.00	1.94					
PVCAFC	10.00	1.62					
	15.00	1.39					
	20.00	1.21					
	25.00	1.08					

MAX CASH EXPOSURE MM\$/S CONSTANT	--	57.26					
W/O FIN							

STATE OF ALASKA DEPT. OF REVENUE

PETROLEUM RESEARCH SECTION

ECONOMIC FEASIBILITY MODEL: ALASKA NORTH SLOPE OIL FIELD DEVELOPMENT DECISION

NOTE: ANALYSIS OF DEVELOPMENT FEASIBILITY ONLY, IGNORES SUNK COSTS OF G&G AND EXPLORATION IN CAPITAL COSTS

PUBLIC VERSION: EQUIVALENT AMORTIZED ECONOMIC RENT FOR HYPOTHETICAL FIELD

FOR MORE INFORMATION CONTACT CHUCK LOGSDON AT (907) 277-5627

MAINFRAME MODEL REQUIRED FOR ENHANCED RECOVERY ANALYSIS, SIMULTANEOUS MULTI-FIELD SUPPLY ANALYSIS AND SHUTDOWN ANALYSIS

FIELD INPUT ASSUMPTIONS		ANALYSIS OPTIONS
-----		-----
FIELD NAME:	NIAXUK	INCREMENTAL - ONGOING OPERATOR = 0

FIELD ASSUMPTIONS:		STAND ALONE - NEW INVESTOR = 1
FISCAL: AK/US		
PROPORTION PROD N AK LEASES	1.0000	
AK ROYALTY RATE	0.1250	COMMENTS:
AK NET PROFIT BONUS ROY RATE	0.0000	-----
AK SEV TAX NON RATE 1ST 5 YRS	0.1225	NIAXUK BASE CASE / BASE YEAR 1992
AK SEV TAX NON RATE YR 6 ON	0.1500	CONSTANT \$'S : 1992 \$'S
AK PROPERTY TAX RATE	0.0200	CURRENT \$'S : \$'S OF THE DAY
AK ST CORP TAX EFF RATE	0.0140	INFLATION RATE ASSUMED 4.5% PER YEAR FROM 1990
PROPORTION PROD N US FED LEASES	0.0000	
US FED ROYALTY RATE	0.0000	
US FED CORP TAX EFF RATE	0.3400	
COST:		
TOTAL LEASE ACQUIS COST MM\$'S HISTOR	27.0000	FOR CALC OF LEASE AMORT / DEPLETION
FIXED OPER COST MM\$'S CONSTANT	10.92	
VARIABLE OPER COST \$'S/BBL CONSTANT	0.30	
PROD N YEAR TO START WORKOVERS	5	
WORKOVER COST MM\$'S/WELL CONSTANT	0.85	
WORKOVER ROTATION FACTOR	N/A	
PROPORTION WELL CAPITAL COST INTANG	0.7000	
PROPORTION FACIL CAPITAL COST INTANG	0.3000	
AK PTY TAX TR ORIG CO ANN ESCAL RATE	0.0500	
FINANCING: ASSUMED PROPORTION OF CAPITAL COST OBTAINED AT BEG OF EACH YEAR		
PROPORTION OF CAPITAL COST DEBT	0.0000	
CURRENT \$ INTEREST RATE ON DEBT	0.1000	
TERM OF DEBT IN YEARS	10	

FIELD INPUT ASSUMPTIONS TABLE BY YEAR

MIAXUK

YEAR	INFLATION			FACILITY CAPITAL				WELL CAPITAL				PRUDHOE BAY OIL			FIELD		FIELD		FIELD		FIXED		
	RELATIVE	RATE	INFLATION	FACILITY	COST	CAPITAL	FACILITY	WELL	COST	CAPITAL	WELL	PROD	RELATIVE	GROSS	FIELD	FIELD	GROSS	COSTS	ROY	ROY	OPER	FIXED	
	YEAR	PCI/Y	FACTOR	CONSTANT	ESCAL	CURR \$	MM\$'S	MM\$'S	ESCAL	CURR \$	MM\$'S	VOLUME	PROD	PRICE	TARIFF	QUALITY	WELLHEAD	4/ ROY	WELLHEAD	ESCAL	CURR \$		
					PCI/Y	FACTOR	CURRENT	CONSTANT	PCI/Y	FACTOR	CURRENT	MMBBL/Y	YEAR	\$'/BBL	\$'/BBL	\$'/BBL	\$'/BBL	\$'/BBL	\$'/BBL	RATE	ESCAL		
1992			1.0000	27.43		1.0000	27.43	4.41		1.0000	4.41	0.00	0	15.83	1.25	0.00	14.58	0.80	13.79		1.0000		
1993	4.50	1.0450	59.62	0.00	1.0450	62.31	35.29	0.00	1.0450	36.88	0.00	0	16.55	1.25	0.00	15.30	0.83	14.46	0.00	1.0450			
1994	4.50	1.0920	0.00	0.00	1.0920	0.00	4.41	0.00	1.0920	4.82	6.94	1	17.29	1.25	0.00	16.04	0.87	15.17	0.00	1.0920			
1995	4.50	1.1412	0.00	0.00	1.1412	0.00	0.00	0.00	1.1412	0.00	6.94	2	18.07	1.25	0.00	16.82	0.91	15.91	0.00	1.1412			
1996	4.50	1.1925	0.00	0.00	1.1925	0.00	0.00	0.00	1.1925	0.00	6.94	3	18.88	1.25	0.00	17.63	0.95	16.68	0.00	1.1925			
1997	4.50	1.2462	0.00	0.00	1.2462	0.00	0.00	0.00	1.2462	0.00	6.94	4	19.73	1.25	0.00	18.48	0.99	17.49	0.00	1.2462			
1998	4.50	1.3023	0.00	0.00	1.3023	0.00	0.00	0.00	1.3023	0.00	5.46	5	20.62	1.25	0.00	19.37	1.04	18.33	0.00	1.3023			
1999	4.50	1.3609	0.00	0.00	1.3609	0.00	0.00	0.00	1.3609	0.00	4.47	6	21.55	1.25	0.00	20.30	1.08	19.21	0.00	1.3609			
2000	4.50	1.4221	0.00	0.00	1.4221	0.00	0.00	0.00	1.4221	0.00	3.83	7	22.52	1.25	0.00	21.27	1.13	20.13	0.00	1.4221			
2001	4.50	1.4861	0.00	0.00	1.4861	0.00	0.00	0.00	1.4861	0.00	3.24	8	23.53	1.25	0.00	22.28	1.18	21.10	0.00	1.4861			
2002	4.50	1.5530	0.00	0.00	1.5530	0.00	0.00	0.00	1.5530	0.00	2.77	9	24.59	1.25	0.00	23.34	1.24	22.10	0.00	1.5530			
2003	4.50	1.6229	0.00	0.00	1.6229	0.00	0.00	0.00	1.6229	0.00	2.38	10	25.70	1.25	0.00	24.45	1.29	23.15	0.00	1.6229			
2004	4.50	1.6959	0.00	0.00	1.6959	0.00	0.00	0.00	1.6959	0.00	2.06	11	26.85	1.25	0.00	25.60	1.35	24.25	0.00	1.6959			
2005	4.50	1.7722	0.00	0.00	1.7722	0.00	0.00	0.00	1.7722	0.00	1.80	12	28.06	1.25	0.00	26.81	1.41	25.40	0.00	1.7722			
2006	4.50	1.8519	0.00	0.00	1.8519	0.00	0.00	0.00	1.8519	0.00	1.57	13	29.32	1.25	0.00	28.07	1.48	26.60	-25.00	1.4089			
2007	4.50	1.9353	0.00	0.00	1.9353	0.00	0.00	0.00	1.9353	0.00	1.39	14	30.64	1.25	0.00	29.39	1.54	27.85	-25.00	1.1201			
2008	4.50	2.0224	0.00	0.00	2.0224	0.00	0.00	0.00	2.0224	0.00	0.69	15	32.02	1.25	0.00	30.77	1.61	29.16	-30.00	0.8345			
2009	4.50	2.1134	0.00	0.00	2.1134	0.00	0.00	0.00	2.1134	0.00	0.58	16	33.46	1.25	0.00	32.21	1.68	30.53	-30.00	0.6217			
2010	4.50	2.2085	0.00	0.00	2.2085	0.00	0.00	0.00	2.2085	0.00	0.00	16	34.97	1.25	0.00	33.72	1.76	31.96	-30.00	0.4631			
2011	4.50	2.3079	0.00	0.00	2.3079	0.00	0.00	0.00	2.3079	0.00	0.00	16	36.54	1.25	0.00	35.29	1.84	33.45	-30.00	0.3450			
2012	4.50	2.4117	0.00	0.00	2.4117	0.00	0.00	0.00	2.4117	0.00	0.00	16	38.19	1.25	0.00	36.94	1.92	35.01	-30.00	0.2571			
2013	4.50	2.5202	0.00	0.00	2.5202	0.00	0.00	0.00	2.5202	0.00	0.00	16	39.91	1.25	0.00	38.66	2.01	36.65	-30.00	0.1915			
2014	4.50	2.6337	0.00	0.00	2.6337	0.00	0.00	0.00	2.6337	0.00	0.00	16	41.70	1.25	0.00	40.45	2.10	38.35	-30.00	0.1427			
2015	4.50	2.7522	0.00	0.00	2.7522	0.00	0.00	0.00	2.7522	0.00	0.00	16	43.58	1.25	0.00	42.33	2.19	40.13	-30.00	0.1063			
2016	4.50	2.8760	0.00	0.00	2.8760	0.00	0.00	0.00	2.8760	0.00	0.00	16	45.54	1.25	0.00	44.29	2.29	42.00	-30.00	0.0792			
2017	4.50	3.0054	0.00	0.00	3.0054	0.00	0.00	0.00	3.0054	0.00	0.00	16	47.59	1.25	0.00	46.34	2.40	43.94	-30.00	0.0590			
2018	4.50	3.1407	0.00	0.00	3.1407	0.00	0.00	0.00	3.1407	0.00	0.00	16	49.73	1.25	0.00	48.48	2.50	45.98	-30.00	0.0440			
2019	4.50	3.2820	0.00	0.00	3.2820	0.00	0.00	0.00	3.2820	0.00	0.00	16	51.97	1.25	0.00	50.72	2.62	48.10	-30.00	0.0327			
2020	4.50	3.4297	0.00	0.00	3.4297	0.00	0.00	0.00	3.4297	0.00	0.00	16	54.31	1.25	0.00	53.06	2.73	50.32	-30.00	0.0244			
2021	4.50	3.5840	0.00	0.00	3.5840	0.00	0.00	0.00	3.5840	0.00	0.00	16	56.75	1.25	0.00	55.50	2.86	52.64	-30.00	0.0182			
												89.74			46.11	58.00							

NIAPUK

VAR OPER COST CONS \$ FSCAL RATE PCT/Y	VAR OPER COST CURR \$ ESCAL FACTOR	VAR OPER COST HMS'S CURRENT	WORK OVER COST CONS \$ FSCAL RATE PCT/Y	WORK OVER COST CURR \$ ESCAL FACTOR	PROD WELLS FOR ELF CALCS	TOT WELLS FOR WORK OVER CALCS	WORK ROTATION FACTOR	WORK OVER COST HMS'S CURRENT	FIELD PIPE PROFIT \$'S/DBL CURRENT	TAPS PROFIT \$'S/DBL CURRENT
1992	1.0000	0.00		1.0000	0	0	0.1000	0.00	0.00	0.00
0.00	1.0450	0.00	0.00	1.0450	0	0	0.1000	0.00	0.00	0.00
0.00	1.0920	2.27	0.00	1.0920	8	14	0.1000	0.00	0.00	0.00
0.00	1.1412	2.38	0.00	1.1412	8	14	0.1000	0.00	0.00	0.00
0.00	1.1925	2.48	0.00	1.1925	8	14	0.1000	0.00	0.00	0.00
0.00	1.2462	2.59	0.00	1.2462	8	14	0.1000	0.00	0.00	0.00
0.00	1.3023	2.13	0.00	1.3023	8	14	0.1000	1.55	0.00	0.00
0.00	1.3609	1.82	0.00	1.3609	8	14	0.1000	1.62	0.00	0.00
0.00	1.4221	1.63	0.00	1.4221	8	14	0.1000	1.69	0.00	0.00
0.00	1.4861	1.44	0.00	1.4861	8	14	0.1000	1.77	0.00	0.00
0.00	1.5530	1.29	0.00	1.5530	7	14	0.1000	1.85	0.00	0.00
0.00	1.6229	1.16	0.00	1.6229	7	14	0.1000	1.93	0.00	0.00
0.00	1.6959	1.05	0.00	1.6959	7	14	0.1000	2.02	0.00	0.00
0.00	1.7722	0.96	0.00	1.7722	7	14	0.1000	2.11	0.00	0.00
0.00	1.8519	0.87	0.00	1.8519	6	14	0.1000	2.20	0.00	0.00
0.00	1.9353	0.81	0.00	1.9353	6	14	0.1000	2.30	0.00	0.00
0.00	2.0224	0.42	0.00	2.0224	6	14	0.1000	2.41	0.00	0.00
0.00	2.1134	0.37	0.00	2.1134	6	14	0.1000	2.51	0.00	0.00
0.00	2.2085	0.00	0.00	2.2085	0	0	0.1000	0.00	0.00	0.00
0.00	2.3079	0.00	0.00	2.3079	0	0	0.1000	0.00	0.00	0.00
0.00	2.4117	0.00	0.00	2.4117	0	0	0.1000	0.00	0.00	0.00
0.00	2.5202	0.00	0.00	2.5202	0	0	0.1000	0.00	0.00	0.00
0.00	2.6337	0.00	0.00	2.6337	0	0	0.1000	0.00	0.00	0.00
0.00	2.7522	0.00	0.00	2.7522	0	0	0.1000	0.00	0.00	0.00
0.00	2.8760	0.00	0.00	2.8760	0	0	0.1000	0.00	0.00	0.00
0.00	3.0054	0.00	0.00	3.0054	0	0	0.1000	0.00	0.00	0.00
0.00	3.1407	0.00	0.00	3.1407	0	0	0.1000	0.00	0.00	0.00
0.00	3.2820	0.00	0.00	3.2820	0	0	0.1000	0.00	0.00	0.00
0.00	3.4297	0.00	0.00	3.4297	0	0	0.1000	0.00	0.00	0.00
2021	0.00	3.5840	0.00	0.00	3.5840	0	0	0.1000	0.00	0.00

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR STAND ALONE ANALYSIS

WJARUR	FIELD PS 81 GROSS WELLHEAD PRICE			NET PNTS TO AK STATE GOVT		NET PNTS TO US FED GOVT		NET PNTS TO FINAN COMMON		NET CO PNTS TO AK STATE GOVT		NET PNTS TO US FED GOVT		NET CO PNTS TO FINAN COMMON	
RELATIVE YEAR	PROD VOLUME MMB/Y	PIPE PR \$/S/DBL CURRENT	GROSS INCOME MM\$/S CURRENT	CAPITAL COSTS MM\$/S CURRENT	OPER COSTS MM\$/S CURRENT	W/ FIN MM\$/S CURRENT	W/ FIN MM\$/S CURRENT	W/ FIN MM\$/S CURRENT	W/ FIN MM\$/S CURRENT	W/ FIN MM\$/S CURRENT	W/ FIN MM\$/S CURRENT	W/ FIN MM\$/S CURRENT	W/ FIN MM\$/S CURRENT	W/ FIN MM\$/S CURRENT	W/ FIN MM\$/S CURRENT
1992	0.00	14.58	0.00	31.84	0.00	0.41	0.00	0.00	0.00	-32.25	0.41	0.00	-32.25		
1993	0.00	15.30	0.00	39.19	0.00	1.50	0.00	0.00	0.00	-100.69	1.50	0.00	-100.69		
1994	6.94	16.04	111.33	4.82	14.20	16.01	4.95	0.00	0.00	71.35	16.01	4.95	71.35		
1995	6.94	16.82	116.73	0.00	14.84	16.73	20.81	0.00	0.00	64.34	16.73	20.81	64.34		
1996	6.94	17.63	122.37	0.00	15.51	17.46	24.08	0.00	0.00	65.32	17.46	24.08	65.32		
1997	6.94	18.48	128.27	0.00	16.20	18.21	26.90	0.00	0.00	66.96	18.21	26.90	66.96		
1998	5.46	19.37	105.76	0.00	17.90	14.74	21.01	0.00	0.00	52.11	14.74	21.01	52.11		
1999	4.47	20.30	90.73	0.00	18.30	12.73	16.93	0.00	0.00	42.76	12.73	16.93	42.76		
2000	3.83	21.27	81.45	0.00	18.86	11.48	14.45	0.00	0.00	36.67	11.48	14.45	36.67		
2001	3.24	22.28	72.19	0.00	19.44	10.22	12.79	0.00	0.00	29.75	10.22	12.79	29.75		
2002	2.77	23.34	64.65	0.00	20.10	9.16	11.60	0.00	0.00	23.80	9.16	11.60	23.80		
2003	2.38	24.45	58.18	0.00	20.81	8.23	9.53	0.00	0.00	19.61	8.23	9.53	19.61		
2004	2.06	25.60	52.74	0.00	21.59	7.42	7.74	0.00	0.00	15.99	7.42	7.74	15.99		
2005	1.80	26.81	48.26	0.00	22.42	6.72	6.22	0.00	0.00	12.90	6.72	6.22	12.90		
2006	1.57	28.07	44.08	0.00	18.46	6.11	6.38	0.00	0.00	13.12	6.11	6.38	13.12		
2007	1.39	29.39	40.86	0.00	15.34	5.60	6.55	0.00	0.00	13.36	5.60	6.55	13.36		
2008	0.69	30.77	21.23	0.00	11.94	2.95	2.05	0.00	0.00	4.30	2.95	2.05	4.30		
2009	0.58	32.21	18.68	0.00	9.67	2.48	2.13	0.00	0.00	4.40	2.48	2.13	4.40		
2010	0.00	33.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2011	0.00	35.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2012	0.00	36.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2013	0.00	38.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2014	0.00	40.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2015	0.00	42.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2016	0.00	44.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2017	0.00	46.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2018	0.00	48.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2019	0.00	50.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2020	0.00	53.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2021	0.00	55.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
TOTAL	58.00	PV AMORT PRICE	1177.50	135.85	275.57	168.16	194.11	0.00	403.81	168.16	194.11	403.81			
NPV'S REF YR 1															
# PCT															
0.00	58.00	20.30	1177.50	135.85	275.57	168.16	194.11	0.00	403.81	168.16	194.11	403.81			
5.00	40.57	19.64	796.67	124.45	169.16	114.47	131.08	0.00	257.52	114.47	131.08	257.52			
10.00	29.66	19.11	566.91	114.54	110.48	81.96	92.53	0.00	167.40	81.96	92.53	167.40			
15.00	22.47	18.70	420.07	105.86	76.10	61.11	67.71	0.00	109.29	61.11	67.71	109.29			
20.00	17.51	18.37	321.56	98.20	54.81	47.08	51.03	0.00	70.43	47.08	51.03	70.43			
25.00	13.96	18.10	252.71	91.42	40.97	37.24	39.40	0.00	43.67	37.24	39.40	43.67			

ROR % W/ FIN --- 40.89

ROR % W/O FIN - 40.89

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	---	---
	CAPC	CAPC
	W/ FIN	W/O FIN
# PCT	---	---
0.00	3.97	3.97
5.00	3.07	3.07
10.00	2.46	2.46
15.00	2.03	2.03
20.00	1.72	1.72
25.00	1.48	1.48

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR STAND ALONE ANALYSIS

WTA#UR	FIELD PS #1 GROSS WELLHEAD PRICE	PROD'n VOLUME MMB/Y	PIPE PR \$/S/DBL CURRENT	GROSS INCOME MM\$/S CURRENT	CAPITAL COSTS MM\$/S CURRENT	OPER COSTS MM\$/S CURRENT	ECONOMIC RENT MM\$/S CURRENT	AK STATE GOVT W/O FIN MM\$/S CURRENT	US FED GOVT W/O FIN MM\$/S CURRENT	CO NET CASHFLOW W/O FIN MM\$/S CURRENT
RELATIVE YEAR										
1992	0.00	14.58	0.00	31.84	0.00	-31.84	0.41	0.00	-32.25	
1993	0.00	15.30	0.00	99.19	0.00	-99.19	1.50	0.00	-100.69	
1994	6.94	16.04	111.33	4.82	14.20	92.31	16.01	4.95	71.35	
1995	6.94	16.82	116.73	0.00	14.84	101.89	16.73	20.81	64.34	
1996	6.94	17.63	122.37	0.00	15.51	106.86	17.46	24.08	65.32	
1997	6.94	18.48	128.27	0.00	16.20	112.06	18.21	26.90	66.96	
1998	5.46	19.37	105.76	0.00	17.90	87.86	14.74	21.01	52.11	
1999	4.47	20.30	90.73	0.00	18.30	72.43	12.73	16.93	42.76	
2000	3.83	21.27	81.45	0.00	18.86	62.60	11.48	14.45	36.67	
2001	3.24	22.28	72.19	0.00	19.44	52.75	10.22	12.79	29.75	
2002	2.77	23.34	64.65	0.00	20.10	44.55	9.16	11.60	23.80	
2003	2.38	24.45	58.18	0.00	20.81	37.37	8.23	9.53	19.61	
2004	2.06	25.60	52.74	0.00	21.59	31.16	7.42	7.74	15.99	
2005	1.80	26.81	48.26	0.00	22.42	25.84	6.72	6.22	12.90	
2006	1.57	28.07	44.08	0.00	18.46	25.61	6.11	6.38	13.12	
2007	1.39	29.39	40.86	0.00	15.34	25.52	5.60	6.55	13.36	
2008	0.69	30.77	21.23	0.00	11.94	9.30	2.95	2.05	4.30	
2009	0.58	32.21	18.68	0.00	9.67	9.01	2.48	2.13	4.40	
2010	0.00	33.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2011	0.00	35.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2012	0.00	36.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2013	0.00	38.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2014	0.00	40.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2015	0.00	42.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2016	0.00	44.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2017	0.00	46.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2018	0.00	48.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2019	0.00	50.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2020	0.00	53.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2021	0.00	55.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	58.00	PV AMORT PRICE	1177.50	135.85	275.57	766.08	168.16	194.11	403.81	
NPV'S BEG YR 1		\$/S/DBL								
0 PCT										
0.00	58.00	20.30	1177.50	135.85	275.57	766.08	168.16	194.11	403.81	
5.00	40.57	19.64	796.67	124.45	169.16	503.06	114.47	131.08	257.52	
10.00	29.66	19.11	566.91	114.54	110.48	341.89	81.96	92.53	167.40	
15.00	22.47	18.70	420.07	105.86	76.10	238.12	61.11	67.71	109.29	
20.00	17.51	18.37	321.56	98.20	54.81	168.54	47.08	51.03	70.43	
25.00	13.96	18.10	252.71	91.42	40.97	120.31	37.24	39.40	43.67	

FIELD PS #1 GROSS WELLHEAD PRICE	PIPE PR \$/S/DBL CURRENT	CAPITAL COSTS MM\$/S CURRENT	OPER COSTS MM\$/S CURRENT	ECONOMIC RENT MM\$/S CURRENT	STATE GOVT W/O FIN MM\$/S CURRENT	FED GOVT W/O FIN MM\$/S CURRENT	CO NET CASHFLOW W/O FIN MM\$/S CURRENT
PER BBL PV'S							
0 PCT							
0.00	20.30	2.34	4.75	13.21	2.90	3.35	6.96
5.00	19.64	3.07	4.17	12.40	2.82	3.23	6.35
10.00	19.11	3.86	3.72	11.53	2.76	3.12	5.64
15.00	18.70	4.71	3.39	10.60	2.72	3.01	4.86
20.00	18.37	5.61	3.13	9.63	2.69	2.91	4.02
25.00	18.10	6.55	2.93	8.62	2.67	2.82	3.13
PERCENTAGE DIVISION OF PV ECON RENT	0 PCT						
	0.00	100.00	21.95	25.34	52.71		
	5.00	100.00	22.75	26.06	51.19		
	10.00	100.00	23.97	27.06	48.96		
	15.00	100.00	25.66	28.44	45.90		
	20.00	100.00	27.93	30.28	41.79		
	25.00	100.00	30.95	32.75	36.30		
PAY OUT TIME IN YEARS	3.96						
ROR % W/O FIN	40.89						
PROFITABILITY RATIOS W/O FIN	0 PCT						
(PVNCF/PVCAFC)	0.00	3.97					
	5.00	3.07					
PVCAFC	10.00	2.46					
	15.00	2.03					
	20.00	1.72					
	25.00	1.48					
MAX CASH EXPOSURE MM\$/S CURRENT W/O FIN	-132.94						

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR STAND ALONE ANALYSIS

NTAKUK	FIELD PS 81 GROSS WELLHEAD PRICE	PROD N VOLUME	PIPE PR \$/S/BBL	GROSS INCOME MM\$/S	CAPITAL COSTS MM\$/S	OPER COSTS MM\$/S	NET PNTS TO AK STATE MM\$/S	NET PNTS TO US FED MM\$/S	NET PNTS TO FINAN COMMUN MM\$/S	CO NET CASHFLOW MM\$/S	NET PNTS TO AK STATE MM\$/S	NET PNTS TO US FED MM\$/S	CO NET CASHFLOW MM\$/S
RELATIVE YEAR	MM\$/Y	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
1992	0.00	14.58	0.00	31.84	0.00	0.41	0.00	0.00	0.00	-32.25	0.41	0.00	-32.25
1993	0.00	14.64	0.00	94.92	0.00	1.44	0.00	0.00	0.00	-96.35	1.44	0.00	-96.35
1994	6.94	14.69	101.94	4.41	13.00	14.66	4.53	0.00	65.34	14.66	4.53	65.34	65.34
1995	6.94	14.74	102.29	0.00	13.00	14.66	18.24	0.00	56.38	14.66	18.24	56.38	56.38
1996	6.94	14.79	102.61	0.00	13.00	14.64	20.20	0.00	54.78	14.64	20.20	54.78	54.78
1997	6.94	14.83	102.93	0.00	13.00	14.61	21.58	0.00	53.73	14.61	21.58	53.73	53.73
1998	5.46	14.87	81.21	0.00	13.75	11.32	16.13	0.00	40.01	11.32	16.13	40.01	40.01
1999	4.47	14.92	66.67	0.00	13.45	9.36	12.44	0.00	31.42	9.36	12.44	31.42	31.42
2000	3.83	14.96	57.28	0.00	13.26	8.07	10.16	0.00	25.79	8.07	10.16	25.79	25.79
2001	3.24	14.99	48.58	0.00	13.08	6.87	8.60	0.00	20.02	6.87	8.60	20.02	20.02
2002	2.77	15.03	41.63	0.00	12.94	5.90	7.47	0.00	15.32	5.90	7.47	15.32	15.32
2003	2.38	15.06	35.85	0.00	12.82	5.07	5.87	0.00	12.08	5.07	5.87	12.08	12.08
2004	2.06	15.10	31.10	0.00	12.73	4.38	4.57	0.00	9.43	4.38	4.57	9.43	9.43
2005	1.80	15.13	27.23	0.00	12.65	3.79	3.51	0.00	7.28	3.79	3.51	7.28	7.28
2006	1.57	15.16	23.80	0.00	9.97	3.30	3.45	0.00	7.08	3.30	3.45	7.08	7.08
2007	1.39	15.19	21.11	0.00	7.93	2.89	3.39	0.00	6.91	2.89	3.39	6.91	6.91
2008	0.69	15.22	10.50	0.00	5.90	1.46	1.01	0.00	2.12	1.46	1.01	2.12	2.12
2009	0.58	15.24	8.84	0.00	4.58	1.17	1.01	0.00	2.08	1.17	1.01	2.08	2.08
2010	0.00	15.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	15.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	15.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	15.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	15.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	15.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	15.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	15.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	15.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	15.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	15.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	58.00	PV AMORT PRICE	863.57	131.17	185.07	124.00	142.15	0.00	281.18	124.00	142.15	281.18	281.18
NPV'S	BEG YR 1	\$/S/BBL											
0 PCT	0.00	58.00	14.89	863.57	131.17	185.07	124.00	142.15	0.00	281.18	124.00	142.15	281.18
5.00	40.57	14.86	602.93	120.23	118.02	87.14	98.46	0.00	179.08	87.14	98.46	179.08	179.08
10.00	29.66	14.84	440.22	110.71	79.80	64.04	70.97	0.00	114.70	64.04	70.97	114.70	114.70
15.00	22.47	14.82	333.07	102.36	56.66	48.77	52.83	0.00	72.44	48.77	52.83	72.44	72.44
20.00	17.51	14.81	259.29	95.00	41.89	38.23	40.37	0.00	43.80	38.23	40.37	43.80	43.80
25.00	13.96	14.80	206.59	88.40	32.01	30.66	31.53	0.00	23.90	30.66	31.53	23.90	23.90

ROR % W/ FIN ---- 34.82

ROR % W/O FIN ---- 34.82

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	W/ FIN	W/O FIN
0 PCT	3.14	3.14
5.00	2.49	2.49
10.00	2.04	2.04
15.00	1.71	1.71
20.00	1.46	1.46
25.00	1.27	1.27

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR STAND ALONE ANALYSIS

WIAKUK	FIELD PS #1 GROSS WELLHEAD			AK STATE GOVT REV'S			US FED GOVT REV'S			CO NET CASHFLOW
RELATIVE YEAR	PROD N VOLUME MMB/Y	PIPE PR \$/S/DBL CONSTANT	GROSS INCOME MM\$/S CONSTANT	CAPITAL COSTS MM\$/S CONSTANT	OPER COSTS MM\$/S CONSTANT	ECONOMIC RENT MM\$/S CONSTANT	W/O FIN MM\$/S CONSTANT	W/O FIN MM\$/S CONSTANT	W/O FIN MM\$/S CONSTANT	
1992	0.00	14.58	0.00	31.84	0.00	-31.84	0.41	0.00	-32.25	
1993	0.00	14.64	0.00	94.92	0.00	-94.92	1.44	0.00	-96.35	
1994	6.94	14.69	101.94	4.41	13.00	84.53	14.66	4.53	65.34	
1995	6.94	14.74	102.29	0.00	13.00	89.28	14.66	18.24	56.38	
1996	6.94	14.79	102.61	0.00	13.00	89.61	14.64	20.20	54.78	
1997	6.94	14.83	102.93	0.00	13.00	89.92	14.61	21.58	53.73	
1998	5.46	14.87	81.21	0.00	13.75	67.46	11.32	16.13	40.01	
1999	4.47	14.92	66.67	0.00	13.45	53.22	9.36	12.44	31.42	
2000	3.83	14.96	57.28	0.00	13.26	44.02	8.07	10.16	25.79	
2001	3.24	14.99	48.58	0.00	13.08	35.49	6.87	8.60	20.02	
2002	2.77	15.03	41.63	0.00	12.94	28.69	5.90	7.47	15.32	
2003	2.38	15.06	35.85	0.00	12.82	23.03	5.07	5.87	12.08	
2004	2.06	15.10	31.10	0.00	12.73	18.37	4.38	4.57	9.43	
2005	1.80	15.13	27.23	0.00	12.65	14.58	3.79	3.51	7.28	
2006	1.57	15.16	23.80	0.00	9.97	13.83	3.30	3.45	7.08	
2007	1.39	15.19	21.11	0.00	7.93	13.18	2.89	3.39	6.91	
2008	0.69	15.22	10.50	0.00	5.90	4.60	1.46	1.01	2.12	
2009	0.58	15.24	8.84	0.00	4.58	4.26	1.17	1.01	2.08	
2010	0.00	15.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2011	0.00	15.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2012	0.00	15.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2013	0.00	15.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2014	0.00	15.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2015	0.00	15.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2016	0.00	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2017	0.00	15.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2018	0.00	15.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2019	0.00	15.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2020	0.00	15.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2021	0.00	15.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	58.00	PV AMORT PRICE	863.57	131.17	185.07	547.34	124.00	142.15	281.18	
NPV'S BFG YR 1		\$/S/DBL								
0 PCT										
0.00	58.00	14.89	863.57	131.17	185.07	547.34	124.00	142.15	281.18	
5.00	40.57	14.86	602.93	120.23	118.02	364.68	87.14	98.46	179.08	
10.00	29.66	14.84	440.22	110.71	79.80	249.71	64.04	70.97	114.70	
15.00	22.47	14.82	333.07	102.36	56.66	174.04	48.77	52.83	72.44	
20.00	17.51	14.81	259.29	95.00	41.89	122.40	38.23	40.37	43.80	
25.00	13.96	14.80	206.59	88.48	32.01	86.10	30.66	31.53	23.90	

	FIELD PS #1 GROSS WELLHEAD PRICE PIPE PR \$/S/DBL CONSTANT	CAPITAL COSTS MM\$/S CONSTANT	OPER ECONOMIC COSTS MM\$/S CONSTANT	RENT MM\$/S CONSTANT	STATE GOVT REVS W/O FIN MM\$/S CONSTANT	FED GOVT REVS W/O FIN MM\$/S CONSTANT	CO NET CASHFLOW W/O FIN MM\$/S CONSTANT
PER BBL PV'S							
0 PCT							
0.00	14.89	2.26	3.19	9.44	2.14	2.45	4.85
5.00	14.86	2.96	2.91	8.99	2.15	2.43	4.41
10.00	14.84	3.73	2.69	8.42	2.16	2.39	3.87
15.00	14.82	4.56	2.52	7.75	2.17	2.35	3.22
20.00	14.81	5.43	2.39	6.99	2.18	2.31	2.50
25.00	14.80	6.34	2.29	6.17	2.20	2.26	1.71

PERCENTAGE DIVISION OF PV ECON RENT -----		0 PCT					
			</				

STATE OF ALASKA DEPT. OF REVENUE

PETROLEUM RESEARCH SECTION

ECONOMIC FEASIBILITY MODEL: ALASKA NORTH SLOPE OIL FIELD DEVELOPMENT DECISION

NOTE: ANALYSIS OF DEVELOPMENT FEASIBILITY ONLY, IGNORES SUNK COSTS OF G&G AND EXPLORATION IN CAPITAL COSTS

PUBLIC VERSION: EQUIVALENT AMORTIZED ECONOMIC RENT FOR HYPOTHETICAL FIELD

FOR MORE INFORMATION CONTACT CHUCK LOGSDON AT (907) 277-5627

MAINFRAME MODEL REQUIRED FOR ENHANCED RECOVERY ANALYSIS, SIMULTANEOUS MULTI-FIELD SUPPLY ANALYSIS AND SHUTDOWN ANALYSIS

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FIELD INPUT ASSUMPTIONS      ANALYSIS OPTIONS      0
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FIELD NAME:                  NORTH STAR      INCREMENTAL - ONGOING OPERATOR : 0
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FIELD ASSUMPTIONS:          -----
FISCAL: AK/US              STAND ALONE - NEW INVESTOR : 1
PROPORTION PROD N AK LEASES 1.0000
AK ROYALTY RATE             0.2000
AK NET PROFIT BONUS ROY RATE 0.8500
AK SEV TAX MON RATE 1ST 5 YRS 0.1225
AK SEV TAX MON RATE YR 6 ON 0.1500
AK PROPERTY TAX RATE        0.0200
AK ST CORP TAX EFF RATE     0.0140
PROPORTION PROD N US FED LEASES 0.0000
US FED ROYALTY RATE         0.0000
US FED CORP TAX EFF RATE    0.3400
COST:
TOTAL LEASE ACQUIS COST MM$'S HISTOR 278.0000 FOR CALC OF LEASE AMORT / DEPLETION
FIXED OPER COST MM$'S CONSTANT 60.00
VARIABLE OPER COST $'S/BDL CONSTANT 2.29
PROD N YEAR TO START WORKOVERS 5
WORKOVER COST MM$'S/WELL CONSTANT 1.02
WORKOVER ROTATION FACTOR N/A
PROPORTION WELL CAPITAL COST INTANG 0.7000
PROPORTION FACIL CAPITAL COST INTANG 0.3000
AK PTY TAX TR ORIG CO ANN ESCAL RATE 0.0500
FINANCING: ASSUMED PROPORTION OF CAPITAL COST OBTAINED AT BEG OF EACH YEAR
PROPORTION OF CAPITAL COST DEBT 0.0000
CURRENT $ INTEREST RATE ON DEBT 0.1000
TERM OF DEBT IN YEARS 10
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COMMENTS:

NORTH STAR BASE CASE / BASE YEAR 1997

CONSTANT \$'S : 1997 \$'S

CURRENT \$'S : \$'S OF THE DAY

INFLATION ASSUMED 4.5% PER YEAR FROM 1990

FIELD INPUT ASSUMPTIONS TABLE BY YEAR

NORTH STAR

INFLATION			FACILITY CAPITAL				WELL CAPITAL				PRUDHOE		FIELD		FIELD		FIELD		FIXED			
RELATIVE YEAR	RATE PCT/Y	INFLATION FACTOR	FACILITY CAPITAL	COST	CAPITAL	FACILITY CAPITAL	WELL CAPITAL	COST	CAPITAL	WELL CAPITAL	PROD N HMBBL/Y	RELATIVE PROD YEAR	PRUDHOE BAY OIL	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		
			CONSTANT	ESCAL RATE PCT/Y	CURR \$	ESCAL	CURR \$	CONSTANT	ESCAL	CURR \$			WELLHEAD PRICE	TARIFF COST	QUALITY DIFFER	GROSS WELLHEAD PRICE	4/ ROY CALC	ROY WELLHEAD PRICE	OPER COST	FIXED OPER		
			NM\$/S		NM\$/S	NM\$/S	NM\$/S		NM\$/S	NM\$/S			\$/S/DBL CURRENT	\$/S/DBL CURRENT	\$/S/DBL CURRENT	\$/S/DBL CURRENT	\$/S/DBL CURRENT	\$/S/DBL CURRENT	ESCAL RATE PCT/Y	CURR \$	ESCAL	NM\$/S
1997		1.0000	142.91		1.0000	142.91	0.00		1.0000	0.00	0.00	0	19.73	3.50	0.00	16.23	0.00	16.23		1.0000		0.00
1998	4.50	1.0450	142.91	0.00	1.0450	149.34	95.27	0.00	1.0450	99.56	0.00	0	20.62	3.50	0.00	17.12	0.00	17.12	0.00	1.0450		0.00
1999	4.50	1.0920	170.13	0.00	1.0920	185.78	95.27	0.00	1.0920	104.04	0.00	0	21.55	3.50	0.00	18.05	0.00	18.05	0.00	1.0920		0.00
2000	4.50	1.1412	20.42	0.00	1.1412	23.30	109.56	0.00	1.1412	125.03	18.00	1	22.52	3.50	0.00	19.02	0.00	19.02	0.00	1.1412		68.47
2001	4.50	1.1925	0.00	0.00	1.1925	0.00	0.00	0.00	1.1925	0.00	20.00	2	23.53	3.50	0.00	20.03	0.00	20.03	0.00	1.1925		71.55
2002	4.50	1.2462	0.00	0.00	1.2462	0.00	0.00	0.00	1.2462	0.00	20.00	3	24.59	3.50	0.00	21.09	0.00	21.09	0.00	1.2462		74.77
2003	4.50	1.3023	0.00	0.00	1.3023	0.00	0.00	0.00	1.3023	0.00	20.00	4	25.70	3.50	0.00	22.20	0.00	22.20	0.00	1.3023		78.14
2004	4.50	1.3609	0.00	0.00	1.3609	0.00	0.00	0.00	1.3609	0.00	18.00	5	26.86	3.50	0.00	23.36	0.00	23.36	0.00	1.3609		81.65
2005	4.50	1.4221	0.00	0.00	1.4221	0.00	0.00	0.00	1.4221	0.00	15.00	6	28.06	3.50	0.00	24.56	0.00	24.56	0.00	1.4221		85.33
2006	4.50	1.4861	0.00	0.00	1.4861	0.00	0.00	0.00	1.4861	0.00	12.00	7	29.33	3.50	0.00	25.83	0.00	25.83	0.00	1.4861		89.17
2007	4.50	1.5530	0.00	0.00	1.5530	0.00	0.00	0.00	1.5530	0.00	10.00	8	30.65	3.50	0.00	27.15	0.00	27.15	0.00	1.5530		93.18
2008	4.50	1.6229	0.00	0.00	1.6229	0.00	0.00	0.00	1.6229	0.00	9.00	9	32.03	3.50	0.00	28.53	0.00	28.53	0.00	1.6229		97.37
2009	4.50	1.6959	0.00	0.00	1.6959	0.00	0.00	0.00	1.6959	0.00	8.00	10	33.47	3.50	0.00	29.97	0.00	29.97	0.00	1.6959		101.75
2010	4.50	1.7722	0.00	0.00	1.7722	0.00	0.00	0.00	1.7722	0.00	7.00	11	34.97	3.50	0.00	31.47	0.00	31.47	0.00	1.7722		106.33
2011	4.50	1.8519	0.00	0.00	1.8519	0.00	0.00	0.00	1.8519	0.00	6.00	12	36.55	3.50	0.00	33.05	0.00	33.05	-4.50	1.7722		106.33
2012	4.50	1.9353	0.00	0.00	1.9353	0.00	0.00	0.00	1.9353	0.00	5.00	13	38.19	3.50	0.00	34.69	0.00	34.69	-4.50	1.7722		106.33
2013	4.50	2.0224	0.00	0.00	2.0224	0.00	0.00	0.00	2.0224	0.00	4.00	14	39.91	3.50	0.00	36.41	0.00	36.41	-4.50	1.7722		106.33
2014	4.50	2.1134	0.00	0.00	2.1134	0.00	0.00	0.00	2.1134	0.00	3.00	15	41.71	3.50	0.00	38.21	0.00	38.21	-4.50	1.7722		106.33
2015	4.50	2.2085	0.00	0.00	2.2085	0.00	0.00	0.00	2.2085	0.00	3.00	16	43.58	3.50	0.00	40.08	0.00	40.08	-4.50	1.7722		106.33
2016	4.50	2.3079	0.00	0.00	2.3079	0.00	0.00	0.00	2.3079	0.00	0.00	16	45.54	3.50	0.00	42.04	0.00	42.04	-4.50	1.7722		0.00
2017	4.50	2.4117	0.00	0.00	2.4117	0.00	0.00	0.00	2.4117	0.00	0.00	16	47.59	3.50	0.00	44.09	0.00	44.09	-4.50	1.7722		0.00
2018	4.50	2.5202	0.00	0.00	2.5202	0.00	0.00	0.00	2.5202	0.00	0.00	16	49.74	3.50	0.00	46.24	0.00	46.24	-4.50	1.7722		0.00
2019	4.50	2.6337	0.00	0.00	2.6337	0.00	0.00	0.00	2.6337	0.00	0.00	16	51.97	3.50	0.00	48.47	0.00	48.47	-4.50	1.7722		0.00
2020	4.50	2.7522	0.00	0.00	2.7522	0.00	0.00	0.00	2.7522	0.00	0.00	16	54.31	3.50	0.00	50.81	0.00	50.81	-4.50	1.7722		0.00
2021	4.50	2.8760	0.00	0.00	2.8760	0.00	0.00	0.00	2.8760	0.00	0.00	16	56.76	3.50	0.00	53.26	0.00	53.26	-4.50	1.7722		0.00
2022	4.50	3.0054	0.00	0.00	3.0054	0.00	0.00	0.00	3.0054	0.00	0.00	16	59.31	3.50	0.00	55.81	0.00	55.81	-4.50	1.7722		0.00
2023	4.50	3.1407	0.00	0.00	3.1407	0.00	0.00	0.00	3.1407	0.00	0.00	16	61.98	3.50	0.00	58.48	0.00	58.48	-4.50	1.7722		0.00
2024	4.50	3.2820	0.00	0.00	3.2820	0.00	0.00	0.00	3.2820	0.00	0.00	16	64.77	3.50	0.00	61.27	0.00	61.27	-4.50	1.7722		0.00
2025	4.50	3.4297	0.00	0.00	3.4297	0.00	0.00	0.00	3.4297	0.00	0.00	16	67.68	3.50	0.00	64.18	0.00	64.18	-4.50	1.7722		0.00
2026	4.50	3.5840	0.00	0.00	3.5840	0.00	0.00	0.00	3.5840	0.00	0.00	16	70.73	3.50	0.00	67.23	0.00	67.23	-4.50	1.7722		0.00
			501.32				328.62				178.00											

NORTH STAR

VAR OPER COST CONS \$ ESCAL RATE PCT/Y	VAR OPER COST CURR \$ ESCAL FACTOR	VAR OPER COST MHS'S CURRENT	WORK OVER COST CONS \$ ESCAL RATE PCT/Y	WORK OVER COST CURR \$ ESCAL FACTOR	PROD WELLS FOR ELF CALCS	TOT WELLS FOR WORK OVER ROTATION CALCS	WORK OVER COST MHS'S CURRENT	FIELD PIPE PROFIT \$'S/BDL CURRENT	TAPS PROFIT \$'S/BDL CURRENT
1417	1.0000	0.00	1.0000	0	0	0.3333	0.00	0.00	0.00
0.00	1.0450	0.00	0.00	1.0450	0	0.3333	0.00	0.00	0.00
0.00	1.0920	0.00	0.00	1.0920	0	0.3333	0.00	0.00	0.00
0.00	1.1412	46.97	0.00	1.1412	45	63	0.3333	0.00	0.00
0.00	1.1925	54.53	0.00	1.1925	45	63	0.3333	0.00	0.00
0.00	1.2462	56.99	0.00	1.2462	45	63	0.3333	0.00	0.00
0.00	1.3023	59.55	0.00	1.3023	45	63	0.3333	0.00	0.00
6.00	1.4390	59.22	0.00	1.3609	45	63	0.3333	29.17	0.00
6.00	1.5901	54.54	0.00	1.4221	45	63	0.3333	30.48	0.00
6.00	1.7571	48.21	0.00	1.4861	45	63	0.3333	31.85	0.00
6.00	1.9415	44.39	0.00	1.5530	40	58	0.3333	30.64	0.00
6.00	2.1454	44.15	0.00	1.6229	38	56	0.3333	30.92	0.00
6.00	2.3707	43.36	0.00	1.6959	36	54	0.3333	31.16	0.00
6.00	2.6196	41.93	0.00	1.7722	34	52	0.3333	31.35	0.00
6.00	2.8946	39.71	0.00	1.8519	32	50	0.3333	31.50	0.00
6.00	3.1986	36.57	0.00	1.9353	30	48	0.3333	31.60	0.00
6.00	3.5344	32.33	0.00	2.0224	28	46	0.3333	31.65	0.00
6.00	3.9056	26.79	0.00	2.1134	26	44	0.3333	31.64	0.00
6.00	4.3156	29.60	0.00	2.2085	26	44	0.3333	33.06	0.00
6.00	4.7688	0.00	0.00	2.3079	0	0	0.3333	0.00	0.00
6.00	5.2695	0.00	0.00	2.4117	0	0	0.3333	0.00	0.00
6.00	5.8228	0.00	0.00	2.5202	0	0	0.3333	0.00	0.00
6.00	6.4342	0.00	0.00	2.6337	0	0	0.3333	0.00	0.00
6.00	7.1098	0.00	0.00	2.7522	0	0	0.3333	0.00	0.00
6.00	7.8563	0.00	0.00	2.8760	0	0	0.3333	0.00	0.00
6.00	8.6812	0.00	0.00	3.0054	0	0	0.3333	0.00	0.00
6.00	9.5928	0.00	0.00	3.1407	0	0	0.3333	0.00	0.00
6.00	10.6000	0.00	0.00	3.2820	0	0	0.3333	0.00	0.00
6.00	11.7130	0.00	0.00	3.4297	0	0	0.3333	0.00	0.00
226 6.00	12.9429	0.00	0.00	3.5840	0	0	0.3333	0.00	0.00

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR

INCREMENTAL ANALYSIS

NORTH STAR	FIELD		NET		NET		NET		NET		NET	
	PS #1	GROSS	AK STATE	US FED	FINAN	CASHFLOW	GOVT	GOVT	W/O FIN	W/O FIN	W/O FIN	W/O FIN
RELATIVE	WELLHEAD	PRICE	INCOME	COSTS	OPER	W/ FIN	W/ FIN	COMMUN	W/ FIN	W/O FIN	W/O FIN	W/O FIN
YEAR	VOLUME	\$'S/BDL	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S
	MMB/Y	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT
1997	0.00	16.23	0.00	142.91	0.00	1.97	-15.25	0.00	-129.63	1.97	-15.25	-129.63
1998	0.00	17.12	0.00	248.89	0.00	4.61	-33.39	0.00	-220.12	4.61	-33.39	-220.12
1999	0.00	18.05	0.00	289.82	0.00	7.75	-38.92	0.00	-258.65	7.75	-38.92	-258.65
2000	18.00	19.02	342.37	148.32	115.44	83.64	-8.22	0.00	3.18	83.64	-8.22	3.18
2001	20.00	20.03	400.68	0.00	126.08	99.98	6.63	0.00	167.98	99.98	6.63	167.98
2002	20.00	21.09	421.86	0.00	131.76	104.75	20.98	0.00	164.37	104.75	20.98	164.37
2003	20.00	22.20	443.99	0.00	137.69	109.70	32.44	0.00	164.16	109.70	32.44	164.16
2004	18.00	23.36	420.41	0.00	170.04	99.77	23.30	0.00	127.29	99.77	23.30	127.29
2005	15.00	24.56	368.47	0.00	170.34	84.17	14.78	0.00	99.17	84.17	14.78	99.17
2006	12.00	25.83	309.93	0.00	169.23	69.50	4.19	0.00	67.01	69.50	4.19	67.01
2007	10.00	27.15	271.47	0.00	168.22	61.02	2.23	0.00	40.00	61.02	2.23	40.00
2008	9.00	28.53	256.74	0.00	172.44	57.46	4.34	0.00	22.49	57.46	4.34	22.49
2009	8.00	29.97	239.74	0.00	176.27	53.38	-0.82	0.00	10.90	53.38	-0.82	10.90
2010	7.00	31.47	220.31	0.00	179.61	48.73	-6.45	0.00	-1.58	48.73	-6.45	-1.58
2011	6.00	33.05	198.28	0.00	177.55	43.53	-10.93	0.00	-11.86	43.53	-10.93	-11.86
2012	5.00	34.69	173.46	0.00	174.50	37.67	-15.82	0.00	-22.90	37.67	-15.82	-22.90
2013	4.00	36.41	145.64	0.00	170.31	31.11	-21.09	0.00	-34.69	31.11	-21.09	-34.69
2014	3.00	38.21	114.62	0.00	164.76	23.80	-26.73	0.00	-47.20	23.80	-26.73	-47.20
2015	3.00	40.08	170.25	0.00	168.99	23.90	-26.29	0.00	-46.35	23.90	-26.29	-46.35
2016	0.00	42.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	44.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	46.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	48.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	50.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	53.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	55.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	58.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	61.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	64.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	0.00	67.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	178.00	PV AMORT	4448.20	829.94	2573.23	1046.45	-95.00	0.00	93.58	1046.45	-95.00	93.58
		PRICE										
NPV'S	BEG YR 1	\$'S/BDL										
0 PCT												
0.00	178.00	24.99	4448.20	829.94	2573.23	1046.45	-95.00	0.00	93.58	1046.45	-95.00	93.58
5.00	116.83	24.07	2811.96	734.24	1472.28	672.20	-56.59	0.00	-10.15	672.20	-56.59	-10.15
10.00	80.53	23.34	1879.19	654.66	902.68	456.05	-44.05	0.00	-90.14	456.05	-44.05	-90.14
15.00	57.73	22.75	1313.62	587.83	587.15	323.36	-40.13	0.00	-144.60	323.36	-40.13	-144.60
20.00	42.72	22.29	952.34	531.18	401.34	237.63	-38.81	0.00	-179.01	237.63	-38.81	-179.01
25.00	32.45	21.92	711.26	482.76	285.86	179.82	-38.04	0.00	-199.13	179.82	-38.04	-199.13

ROR % W/ FIN ---- 4.46

ROR % W/O FIN --- 4.46

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	----	----
	CAPC	CAPC
	W/ FIN	W/O FIN
0 PCT	----	----
0.00	1.11	1.11
5.00	0.99	0.99
10.00	0.86	0.86
15.00	0.75	0.75
20.00	0.66	0.66
25.00	0.59	0.59

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

NORTH STAR		FIELD PS #1		GROSS		AK STATE		US FED		CO	
		WELLHEAD				GOV1		GOV1		NET	
		PRICE		CAPITAL		OPER ECONOMIC		REVS		CASHFLOW	
		PRODN + PIPE PR		GROSS INCOME		COSTS		W/O FIN		W/O FIN	
		\$'/BBL		MM\$'S		MM\$'S		MM\$'S		MM\$'S	
RELATIVE	VOLUME	PIPE	PR	INCOME	COSTS	COSTS	RENT	W/O FIN	W/O FIN	W/O FIN	W/O FIN
YEAR	MMB/Y	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT
1997	0.00	16.23	0.00	142.91	0.00	-142.91	1.97	-15.25	-129.63		
1998	0.00	17.12	0.00	248.89	0.00	-248.89	4.61	-33.39	-220.12		
1999	0.00	18.35	0.00	289.82	0.00	-289.82	7.75	-38.92	-258.65		
2000	18.00	19.02	342.37	148.32	115.44	78.61	83.64	-8.22	3.16		
2001	20.00	20.03	400.68	0.00	126.08	274.59	99.98	6.63	167.98		
2002	20.00	21.09	421.86	0.00	131.76	290.10	104.75	20.98	164.37		
2003	20.00	22.20	443.99	0.00	137.69	306.30	109.70	32.44	164.16		
2004	18.00	23.36	420.41	0.00	170.04	250.36	99.77	23.30	127.29		
2005	15.00	24.56	368.47	0.00	170.34	198.12	84.17	14.78	99.17		
2006	12.00	25.83	309.93	0.00	169.23	140.70	69.50	4.19	67.01		
2007	10.00	27.15	271.47	0.00	168.22	103.26	61.02	2.23	40.00		
2008	9.00	28.53	256.74	0.00	172.44	84.30	57.46	4.34	22.49		
2009	8.00	29.97	239.74	0.00	176.27	63.47	53.38	-0.82	10.90		
2010	7.00	31.47	220.31	0.00	179.61	40.70	48.73	-6.45	-1.58		
2011	6.00	33.05	198.28	0.00	177.55	20.74	43.53	-10.93	-11.86		
2012	5.00	34.69	173.46	0.00	174.50	-1.04	37.67	-15.82	-22.90		
2013	4.00	36.41	145.64	0.00	170.31	-24.67	31.11	-21.09	-34.69		
2014	3.00	38.21	114.62	0.00	164.76	-50.14	23.80	-26.73	-47.20		
2015	3.00	40.08	120.25	0.00	168.99	-48.74	23.90	-26.29	-46.35		
2016	0.00	42.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2017	0.00	44.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2018	0.00	46.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2019	0.00	48.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2020	0.00	50.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2021	0.00	53.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2022	0.00	55.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2023	0.00	58.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2024	0.00	61.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2025	0.00	64.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2026	0.00	67.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
TOTAL		178.00	PV AMORT	4448.20	829.94	2573.23	1045.03	1046.45	-95.00	93.58	
NPV'S		REG YR 1	PRICE								
% PCT			\$'/BBL								
0.00	178.00	24.99	4448.20	829.94	2573.23	1045.03	1046.45	-95.00	93.58		
5.00	116.83	24.07	2811.96	734.24	1472.28	605.45	672.20	-56.59	-10.15		
10.00	80.53	23.34	1879.19	654.66	902.68	321.85	456.05	-44.05	-90.14		
15.00	57.73	22.75	1313.62	587.83	587.15	138.63	323.36	-40.13	-144.60		
20.00	42.72	22.29	952.34	531.18	401.34	19.82	237.63	-38.81	-179.01		
25.00	32.45	21.92	711.26	482.76	285.86	-57.36	179.82	-38.04	-199.13		

INCREMENTAL ANALYSIS

[illegible]

ROR % W/ FIN ---- -0.03

ROR 2 W/O FIN --- -0.03

PROFITABILITY RATIOS

	(NCF+CAFC)	(NCF+CAFC)
	CAPC	CAPC
# PCT	M/ FIN	M/O FIN
0.00	1.00	1.00
5.00	0.87	0.87
10.00	0.76	0.76
15.00	0.66	0.66
20.00	0.58	0.58
25.00	0.52	0.52

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

NORTH STAR		FIELD PS #1 GROSS WELLHEAD		PRICE		GROSS	CAPITAL	OPER ECONOMIC		AK STATE	US FED	CO
		PRODN	PIPE PR	INCOME						GOVT	GOVT	NET
		VOLUME	\$'/DBL	MM\$'S						REVS	REVS	CASHFLOW
RELATIVE												
YEAR		MMB/Y	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	MM\$'S	MM\$'S	MM\$'S
1997		0.00	16.23	0.00	142.91	0.00	-142.91	1.97	-15.25	-129.63		
1998		0.00	16.39	0.00	238.18	0.00	-238.18	4.41	-31.95	-210.64		
1999		0.00	16.53	0.00	265.40	0.00	-265.40	7.10	-35.64	-236.86		
2000		18.00	16.67	300.01	129.98	101.16	68.88	73.29	-7.20	2.79		
2001		20.00	16.80	335.99	0.00	105.73	230.26	83.84	5.56	140.86		
2002		20.00	16.93	338.52	0.00	105.73	232.79	84.05	16.83	131.90		
2003		20.00	17.05	340.94	0.00	105.73	235.21	84.24	24.91	126.06		
2004		18.00	17.16	308.93	0.00	124.95	183.97	73.31	17.12	93.54		
2005		15.00	17.27	259.10	0.00	119.78	139.32	59.19	10.40	69.73		
2006		12.00	17.38	200.55	0.00	113.87	94.68	46.77	2.82	45.09		
2007		10.00	17.48	174.81	0.00	108.32	66.49	39.29	1.44	25.76		
2008		9.00	17.58	158.20	0.00	106.26	51.94	35.41	2.68	13.86		
2009		8.00	17.67	141.37	0.00	103.94	37.42	31.48	-0.48	6.43		
2010		7.00	17.76	124.32	0.00	101.35	22.97	27.50	-3.64	-0.89		
2011		6.00	17.84	107.07	0.00	95.87	11.20	23.50	-5.90	-6.40		
2012		5.00	17.93	89.63	0.00	90.17	-0.54	19.46	-8.17	-11.83		
2013		4.00	18.00	72.02	0.00	84.21	-12.20	15.38	-10.43	-17.15		
2014		3.00	18.08	54.24	0.00	77.96	-23.72	11.26	-12.65	-22.34		
2015		3.00	18.15	54.45	0.00	76.52	-22.07	10.82	-11.91	-20.99		
2016		0.00	18.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2017		0.00	18.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2018		0.00	18.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2019		0.00	18.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2020		0.00	18.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2021		0.00	18.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2022		0.00	18.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2023		0.00	18.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2024		0.00	18.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2025		0.00	18.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2026		0.00	18.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
TOTAL		178.00	PV AMORT PRICE	3068.13	776.45	1621.55	670.12	732.29	-61.46	-0.71		
NPV'S		REG YR 1	\$'/DBL									
# PCT												
0.00		178.00	17.24	3068.13	776.45	1621.55	670.12	732.29	-61.46	-0.71		
5.00		116.83	17.16	2005.25	688.32	967.45	349.48	486.25	-46.43	-90.33		
10.00		80.53	17.10	1377.39	614.92	616.06	146.41	339.02	-41.96	-150.65		
15.00		57.73	17.05	984.62	553.18	414.18	17.26	245.80	-40.52	-188.02		
20.00		42.72	17.01	726.92	500.75	291.18	-65.01	183.97	-39.69	-209.28		
25.00		32.45	16.98	551.02	455.88	212.33	-117.18	141.33	-38.76	-219.75		

	FIELD PS #1 GROSS WELLHEAD PRICE PIPE PR \$/S/BDL CONSTANT	CAPITAL COSTS MM\$/S CONSTANT	OPER COSTS MM\$/S CONSTANT	ECONOMIC RENT MM\$/S CONSTANT	STATE GOVT REVS W/O FIN MM\$/S CONSTANT	FED GOVT REVS W/O FIN MM\$/S CONSTANT	CO NET CASHFLOW W/O FIN MM\$/S CONSTANT	
PER BBL PV'S								
0 PCT								
0.00	17.24	4.36	9.11	3.76	4.11	-0.35	0.00	
5.00	17.16	5.89	8.28	2.99	4.16	-0.40	-0.77	
10.00	17.10	7.64	7.65	1.82	4.21	-0.52	-1.87	
15.00	17.05	9.58	7.17	0.30	4.26	-0.70	-3.26	
20.00	17.01	11.72	6.82	-1.52	4.31	-0.93	-4.90	
25.00	16.98	14.05	6.54	-3.61	4.36	-1.19	-6.77	

PERCENTAGE DIVISION OF PV ECON RENT				0 PCT				
				0.00	100.00	109.28	-9.17	-0.11
				5.00	100.00	139.13	-13.29	-25.85
				10.00	100.00	231.56	-28.66	-102.90
				15.00	100.00	1424.14	-234.77	-1089.37
				20.00	100.00	-282.99	61.06	321.93
				25.00	100.00	-120.60	33.08	187.52

PAY OUT TIME IN YEARS		-10.69						
ROR % W/O FIN		-0.03						
PROFITABILITY RATIOS W/O FIN								
	0 PCT							
(PVNCF+PVCAPC)	0.00	1.00						
	5.00	0.87						
PVCAPC	10.00	0.76						
	15.00	0.66						
	20.00	0.58						
	25.00	0.52						

MAX CASH EXPOSURE MM\$/S CONSTANT		-577.13						
W/O FIN								

STATE OF ALASKA DEPT. OF REVENUE

PETROLEUM RESEARCH SECTION

ECONOMIC FEASIBILITY MODEL: ALASKA NORTH SLOPE OIL FIELD DEVELOPMENT DECISION

NOTE: ANALYSIS OF DEVELOPMENT FEASIBILITY ONLY, IGNORES SUNK COSTS OF G&G AND EXPLORATION IN CAPITAL COSTS

PUBLIC VERSION: EQUIVALENT AMORTIZED ECONOMIC RENT FOR HYPOTHETICAL FIELD

FOR MORE INFORMATION CONTACT CHUCK LOGSDON AT (907) 277-5627

MAINFRAME MODEL REQUIRED FOR ENHANCED RECOVERY ANALYSIS, SIMULTANEOUS MULTI-FIELD SUPPLY ANALYSIS AND SHUTDOWN ANALYSIS

FIELD INPUT ASSUMPTIONS		ANALYSIS OPTIONS	1
FIELD NAME:	NORTH STAR	INCREMENTAL - ONGOING OPERATOR :	0
FIELD ASSUMPTIONS:		STAND ALONE - NEW INVESTOR :	1
FISCAL: AK/US		COMMENTS:	
PROPORTION PRODN AK LEASES	1.0000		
AK ROYALTY RATE	0.2000		
AK NET PROFIT BONUS ROY RATE	0.8500		
AK SEV TAX NON RATE 1ST 5 YRS	0.1225	NORTH STAR BASE CASE / BASE YEAR 1997	
AK SEV TAX NON RATE YR 6 ON	0.1500	CONSTANT \$'S = 1997 \$'S	
AK PROPERTY TAX RATE	0.0200	CURRENT \$'S = \$'S OF THE DAY	
AK ST CORP TAX EFF RATE	0.0140	INFLATION ASSUMED 4.5% PER YEAR FROM 1990	
PROPORTION PRODN US FED LEASES	0.0000		
US FED ROYALTY RATE	0.0000		
US FED CORP TAX EFF RATE	0.3400		
COST:			
TOTAL LEASE ACQUIS COST MM\$'S HISTOR 278,0000 FOR CALC OF LEASE AMORT / DEPLETION			
FIXED OPER COST MM\$'S CONSTANT	60.00		
VARIABLE OPER COST \$'S/BBL CONSTANT	2.29		
PRODN YEAR TO START WORKOVERS	5		
WORKOVER COST MM\$'S/WELL CONSTANT	1.02		
WORKOVER ROTATION FACTOR	N/A		
PROPORTION WELL CAPITAL COST INTANG	0.7000		
PROPORTION FACIL CAPITAL COST INTANG	0.3000		
AK PTY TAX TR ORIG CO ANN ESCAL RATE	0.0500		
FINANCING: ASSUMED PROPORTION OF CAPITAL COST OBTAINED AT BEG OF EACH YEAR			
PROPORTION OF CAPITAL COST DEBT	0.0000		
CURRENT \$ INTEREST RATE ON DEBT	0.1000		
TERM OF DEBT IN YEARS	10		

FIELD INPUT ASSUMPTIONS TABLE BY YEAR

NORTH STAR

[illegible]

NORTH STAR

VAR OPER COST CONS \$ FSCAL RATE PCI/Y	VAR OPER COST CURR \$ ESCAL FACTOR	VAR OPER COST CURR \$ MM\$'S CURRENT	WORK OVER COST ESCAL RATE PCI/Y	WORK OVER COST CURR \$ ESCAL FACTOR	PRODN WELLS FOR ELF CALCS	TOT WELLS FOR WORK OVER CALCS	WORK ROTATION FACTOR	WORK OVER COST MM\$'S CURRENT	FIELD PIPE PROFIT \$/S/DBL CURRENT	TAPS PROFIT \$/S/DBL CURRENT
1917	1.0000	0.00	1.0000	0	0	0	0.3333	0.00	0.00	0.00
0.00	1.0450	0.00	0.00	1.0450	0	0	0.3333	0.00	0.00	0.00
0.00	1.0920	0.00	0.00	1.0920	0	0	0.3333	0.00	0.00	0.00
0.00	1.1412	46.97	0.00	1.1412	45	63	0.3333	0.00	0.00	0.00
0.00	1.1925	54.53	0.00	1.1925	45	63	0.3333	0.00	0.00	0.00
0.00	1.2462	56.99	0.00	1.2462	45	63	0.3333	0.00	0.00	0.00
0.00	1.3023	59.55	0.00	1.3023	45	63	0.3333	0.00	0.00	0.00
6.00	1.4390	59.22	0.00	1.3609	45	63	0.3333	29.17	0.00	0.00
6.00	1.5901	54.54	0.00	1.4221	45	63	0.3333	30.48	0.00	0.00
6.00	1.7571	48.21	0.00	1.4861	45	63	0.3333	31.85	0.00	0.00
6.00	1.9415	44.39	0.00	1.5530	40	58	0.3333	30.64	0.00	0.00
6.00	2.1454	44.15	0.00	1.6229	38	56	0.3333	30.92	0.00	0.00
6.00	2.3707	43.36	0.00	1.6959	36	54	0.3333	31.16	0.00	0.00
6.00	2.6196	41.93	0.00	1.7722	34	52	0.3333	31.35	0.00	0.00
6.00	2.8946	39.71	0.00	1.8519	32	50	0.3333	31.50	0.00	0.00
6.00	3.1986	36.57	0.00	1.9353	30	48	0.3333	31.60	0.00	0.00
6.00	3.5344	32.33	0.00	2.0224	28	46	0.3333	31.65	0.00	0.00
6.00	3.9056	26.79	0.00	2.1134	26	44	0.3333	31.64	0.00	0.00
6.00	4.3156	29.60	0.00	2.2085	26	44	0.3333	33.06	0.00	0.00
6.00	4.7688	0.00	0.00	2.3079	0	0	0.3333	0.00	0.00	0.00
6.00	5.2695	0.00	0.00	2.4117	0	0	0.3333	0.00	0.00	0.00
6.00	5.8228	0.00	0.00	2.5202	0	0	0.3333	0.00	0.00	0.00
6.00	6.4342	0.00	0.00	2.6337	0	0	0.3333	0.00	0.00	0.00
6.00	7.1098	0.00	0.00	2.7522	0	0	0.3333	0.00	0.00	0.00
6.00	7.8563	0.00	0.00	2.8760	0	0	0.3333	0.00	0.00	0.00
6.00	8.6812	0.00	0.00	3.0054	0	0	0.3333	0.00	0.00	0.00
6.00	9.5928	0.00	0.00	3.1407	0	0	0.3333	0.00	0.00	0.00
6.00	10.6000	0.00	0.00	3.2820	0	0	0.3333	0.00	0.00	0.00
6.00	11.7130	0.00	0.00	3.4297	0	0	0.3333	0.00	0.00	0.00
2016	6.00	12.9429	0.00	0.00	3.5840	0	0	0.3333	0.00	0.00

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR STARD ALONE ANALYSIS

NORTH STAR		FIELD		GROSS		NET		NET		NET		NET	
		PS #1		WELLHEAD		PNTS TO		PNTS TO		PNTS TO		PNTS TO	
		PRICE		INCOME		GOVT		GOVT		FINAN		GOVT	
		GROSS		CAPITAL		OPER		W/ FIN		CASHFLOW		W/O FIN	
		CURRENT		CURRENT		CURRENT		CURRENT		CURRENT		CURRENT	
RELATIVE	YEAR	PROD N	PIPE PR	INCOME	COSTS	COSTS	W/ FIN	W/ FIN	COMMUN	W/ FIN	W/O FIN	W/O FIN	W/O FIN
		VOLUME	\$'S/BDL	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S
		MMB/Y	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT
1997	0.00	14.23	0.00	142.91	0.00	2.00	0.00	0.00	-144.91	2.00	0.00	-144.91	
1998	0.00	17.12	0.00	248.89	0.00	4.68	0.00	0.00	-253.57	4.68	0.00	-253.57	
1999	0.00	18.05	0.00	289.82	0.00	7.86	0.00	0.00	-297.68	7.86	0.00	-297.68	
2000	18.00	19.02	342.37	148.32	115.44	83.44	0.00	0.00	-1.83	83.44	0.00	-4.83	
2001	20.00	20.03	400.68	0.00	126.08	99.98	0.00	0.00	174.61	99.98	0.00	174.61	
2002	20.00	21.09	421.86	0.00	131.76	104.75	0.00	0.00	185.35	104.75	0.00	185.35	
2003	20.00	22.20	443.99	0.00	137.69	109.70	0.00	0.00	196.60	109.70	0.00	196.60	
2004	18.00	23.36	420.41	0.00	170.04	99.77	0.00	0.00	150.60	99.77	0.00	150.60	
2005	15.00	24.56	368.47	0.00	170.34	84.17	2.36	0.00	111.59	84.17	2.36	111.59	
2006	12.00	25.83	309.93	0.00	169.23	69.56	4.17	0.00	66.97	69.56	4.17	66.97	
2007	10.00	27.15	271.47	0.00	168.22	61.31	2.13	0.00	39.81	61.31	2.13	39.81	
2008	9.00	28.53	256.74	0.00	172.44	57.89	4.20	0.00	22.21	57.89	4.20	22.21	
2009	8.00	29.97	239.74	0.00	176.27	53.95	0.00	0.00	9.51	53.95	0.00	9.51	
2010	7.00	31.47	220.31	0.00	179.61	49.47	0.00	0.00	-8.77	49.47	0.00	-8.77	
2011	6.00	33.05	198.28	0.00	177.55	44.39	0.00	0.00	-23.65	44.39	0.00	-23.65	
2012	5.00	34.69	173.46	0.00	174.50	38.66	0.00	0.00	-39.71	38.66	0.00	-39.71	
2013	4.00	36.41	145.64	0.00	170.31	32.26	0.00	0.00	-56.92	32.26	0.00	-56.92	
2014	3.00	38.21	114.62	0.00	164.76	25.11	0.00	0.00	-75.25	25.11	0.00	-75.25	
2015	3.00	40.08	120.25	0.00	168.99	25.20	0.00	0.00	-73.94	25.20	0.00	-73.94	
2016	0.00	42.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2017	0.00	44.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2018	0.00	46.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2019	0.00	48.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2020	0.00	50.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2021	0.00	53.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2022	0.00	55.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2023	0.00	58.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2024	0.00	61.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2025	0.00	64.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2026	0.00	67.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	178.00	PV AMORT	4448.20	829.94	2573.23	1054.14	12.87	0.00	-21.98	1054.14	12.87	-21.98	
NCF'S BEG YR 1 \$'S/BDL													
# PCT													
0.00	178.00	24.99	4448.20	829.94	2573.23	1054.14	12.87	0.00	-21.98	1054.14	12.87	-21.98	
5.00	116.83	24.07	2811.96	734.24	1472.28	675.76	7.67	0.00	-77.97	675.76	7.67	-77.97	
10.00	80.53	23.34	1879.19	654.66	902.68	457.79	4.70	0.00	-140.63	457.79	4.70	-140.63	
15.00	57.73	22.75	1313.62	587.83	587.15	324.26	2.95	0.00	-188.57	324.26	2.95	-188.57	
20.00	42.72	22.20	952.34	531.18	401.34	238.13	1.89	0.00	-220.20	238.13	1.89	-220.20	
25.00	32.45	21.92	711.26	482.76	285.86	180.10	1.24	0.00	-238.70	180.10	1.24	-238.70	

ROR % W/ FIN

FRR

ROR % W/O FIN

FRR

PROFITABILITY RATIOS

	(NCF + CAPC)	(NCF + CAPC)
	----	----
	CAPC	CAPC
	W/ FIN	W/O FIN
# PCT	----	----
0.00	0.97	0.97
5.00	0.89	0.89
10.00	0.79	0.79
15.00	0.68	0.68
20.00	0.59	0.59
25.00	0.51	0.51

PRODUCT CO CASHFLOW CALCULATION TABLE BY YEAR

STAND ALONE ANALYSIS

NORTH STAR	FIELD											
	PS 01											
	GROSS											
	WELLHEAD											
	PRICE											
RELATIVE	PROD	PIPE	PR	GROSS	CAPITAL	OPER	GOVT	GOVT	FINAN	CASHFLOW	GOVT	GOVT
	VOLUME	\$'S/BBL		INCOME	COSTS	COSTS	W/ FIN	W/ FIN	COMMUN	W/ FIN	W/O FIN	W/O FIN
YEAR	MMB/Y	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
1997	0.00	16.23	0.00	142.91	0.00	2.00	0.00	0.00	-144.91	2.00	0.00	-144.91
1998	0.00	16.39	0.00	238.18	0.00	4.48	0.00	0.00	-242.65	4.48	0.00	-242.65
1999	0.00	16.53	0.00	265.40	0.00	7.20	0.00	0.00	-272.60	7.20	0.00	-272.60
2000	18.00	16.67	300.01	129.98	101.16	73.11	0.00	0.00	-4.23	73.11	0.00	-4.23
2001	20.00	16.80	335.99	0.00	105.73	83.84	0.00	0.00	146.42	83.84	0.00	146.42
2002	20.00	16.93	338.52	0.00	105.73	84.05	0.00	0.00	148.73	84.05	0.00	148.73
2003	20.00	17.05	340.94	0.00	105.73	84.24	0.00	0.00	150.97	84.24	0.00	150.97
2004	18.00	17.16	308.93	0.00	124.95	73.31	0.00	0.00	110.66	73.31	0.00	110.66
2005	15.00	17.27	259.10	0.00	119.78	59.19	1.66	0.00	78.47	59.19	1.66	78.47
2006	12.00	17.38	208.55	0.00	113.87	46.81	2.80	0.00	45.07	46.81	2.80	45.07
2007	10.00	17.48	174.81	0.00	108.32	39.48	1.37	0.00	25.63	39.48	1.37	25.63
2008	9.00	17.58	158.20	0.00	106.26	35.67	2.59	0.00	13.69	35.67	2.59	13.69
2009	8.00	17.67	141.37	0.00	103.94	31.81	0.00	0.00	5.61	31.81	0.00	5.61
2010	7.00	17.76	124.32	0.00	101.35	27.91	0.00	0.00	-4.95	27.91	0.00	-4.95
2011	6.00	17.84	107.07	0.00	95.87	23.97	0.00	0.00	-12.77	23.97	0.00	-12.77
2012	5.00	17.93	89.63	0.00	90.17	19.98	0.00	0.00	-20.52	19.98	0.00	-20.52
2013	4.00	18.00	72.02	0.00	84.21	15.95	0.00	0.00	-28.15	15.95	0.00	-28.15
2014	3.00	18.08	54.24	0.00	77.96	11.88	0.00	0.00	-35.61	11.88	0.00	-35.61
2015	3.00	18.15	54.45	0.00	76.52	11.41	0.00	0.00	-33.48	11.41	0.00	-33.48
2016	0.00	18.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	18.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	18.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	18.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	18.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	18.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	18.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	18.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	18.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	18.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	0.00	18.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	178.00	17.24	3068.13	776.45	1621.55	736.30	8.43	0.00	-74.60	736.30	8.43	-74.60
NPV'S	BEG YR	1	\$'S/BBL									
# PCT												
0.00	178.00	17.24	3068.13	776.45	1621.55	736.30	8.43	0.00	-74.60	736.30	8.43	-74.60
5.00	116.83	17.16	2005.25	688.32	967.45	488.13	5.04	0.00	-143.69	488.13	5.04	-143.69
10.00	80.53	17.10	1377.39	614.92	616.06	339.96	3.09	0.00	-196.65	339.96	3.09	-196.65
15.00	57.73	17.05	984.62	553.18	414.18	246.31	1.94	0.00	-230.99	246.31	1.94	-230.99
20.00	42.72	17.01	726.92	500.75	291.18	184.26	1.25	0.00	-250.52	184.26	1.25	-250.52
25.00	32.45	16.98	551.02	455.88	212.33	141.51	0.82	0.00	-259.51	141.51	0.82	-259.51

ROR % W/ FIN --- ERR

ROR % W/O FIN --- ERR

PROFITABILITY RATIOS

	(NCF+CAPC)	
	CAPC	
	W/ FIN	
# PCT		
0.00	0.90	0.90
5.00	0.79	0.79
10.00	0.68	0.68
15.00	0.58	0.58
20.00	0.50	0.50
25.00	0.43	0.43

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR STAND ALONE ANALYSIS

NORTH STAR									
RELATIVE YEAR	FIELD PS #1 GROSS WELLHEAD PRICE		AK STATE US FED CO						
	PRODN VOLUME MMB/Y	PIPE PR \$/BBL CONSTANT	GROSS	CAPITAL	OPER ECONOMIC	RENT	W/O FIN	W/O FIN	W/O FIN
			INCOME	COSTS	COSTS	RENT	W/O FIN	W/O FIN	W/O FIN
			MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT
1997	0.00	16.23	0.00	142.91	0.00	-142.91	2.00	0.00	-144.91
1998	0.00	16.39	0.00	238.18	0.00	-238.18	4.48	0.00	-242.65
1999	0.00	16.53	0.00	265.40	0.00	-265.40	7.20	0.00	-272.60
2000	18.00	16.67	300.01	129.98	101.16	68.88	73.11	0.00	-4.23
2001	20.00	16.80	335.99	0.00	105.73	230.26	83.84	0.00	146.42
2002	20.00	16.93	338.52	0.00	105.73	232.79	84.05	0.00	148.73
2003	20.00	17.05	340.94	0.00	105.73	235.21	84.24	0.00	150.97
2004	18.00	17.16	308.93	0.00	124.95	183.97	73.31	0.00	110.66
2005	15.00	17.27	259.10	0.00	119.78	139.32	59.19	1.66	78.47
2006	12.00	17.38	208.55	0.00	113.87	94.68	46.81	2.80	45.07
2007	10.00	17.48	174.81	0.00	108.32	66.49	39.48	1.37	25.63
2008	9.00	17.58	158.20	0.00	106.26	51.94	35.67	2.59	13.69
2009	8.00	17.67	141.37	0.00	103.94	37.42	31.81	0.00	5.61
2010	7.00	17.76	124.32	0.00	101.35	22.97	27.91	0.00	-4.95
2011	6.00	17.84	107.07	0.00	95.87	11.20	23.97	0.00	-12.77
2012	5.00	17.93	89.63	0.00	90.17	-0.54	19.98	0.00	-20.52
2013	4.00	18.00	72.02	0.00	84.21	-12.20	15.95	0.00	-28.15
2014	3.00	18.08	54.24	0.00	77.96	-23.72	11.88	0.00	-35.61
2015	3.00	18.15	54.45	0.00	76.52	-22.07	11.41	0.00	-33.48
2016	0.00	18.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	18.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	18.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	18.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	18.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	18.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	18.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	18.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	18.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	18.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	0.00	18.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	178.00	PV AMORT PRICE	3068.13	776.45	1621.55	670.12	736.30	8.43	-74.60
NPV'S BEG YR 1	\$/BBL								
	# PCT								
0.00	178.00	17.24	3068.13	776.45	1621.55	670.12	736.30	8.43	-74.60
5.00	116.83	17.16	2005.25	688.32	967.45	349.48	488.13	5.04	-143.69
10.00	80.53	17.10	1377.39	614.92	616.06	146.41	339.96	3.09	-196.65
15.00	57.73	17.05	984.62	553.18	414.18	17.26	246.31	1.94	-230.99
20.00	42.72	17.01	726.92	500.75	291.18	-65.01	184.26	1.25	-250.52
25.00	32.45	16.98	551.02	455.88	212.33	-117.18	141.51	0.82	-259.51

FIELD PS #1 GROSS WELLHEAD PRICE		STATE GOVT REV'S		FED GOVT REV'S		CO NET CASHFLOW	
PER BBL PV'S	PIPE PR \$/BBL CONSTANT	CAPITAL COSTS MM\$/S CONSTANT	OPER ECONOMIC COSTS MM\$/S CONSTANT	ECONOMIC RENT MM\$/S CONSTANT	W/O FIN MM\$/S CONSTANT	W/O FIN MM\$/S CONSTANT	W/O FIN MM\$/S CONSTANT
		CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
# PCT							
0.00	17.24	4.36	9.11	3.76	4.14	0.05	-0.42
5.00	17.16	5.89	8.28	2.99	4.18	0.04	-1.23
10.00	17.10	7.64	7.65	1.82	4.22	0.04	-2.44
15.00	17.05	9.58	7.17	0.30	4.27	0.03	-4.00
20.00	17.01	11.72	6.82	-1.52	4.31	0.03	-5.86
25.00	16.98	14.05	6.54	-3.61	4.36	0.03	-8.00
PERCENTAGE DIVISION OF PV ECON RENT		# PCT					
		0.00	100.00	109.87	1.26	-11.13	
		5.00	100.00	139.67	1.44	-41.11	
		10.00	100.00	232.20	2.11	-134.32	
		15.00	100.00	1427.06	11.27	-1338.33	
		20.00	100.00	-283.43	-1.92	385.36	
		25.00	100.00	-120.76	-0.70	221.46	
PAY OUT TIME IN YEARS		-8.16					
ROR % W/O FIN		ERR					
PROFITABILITY RATIOS W/O FIN		# PCT					
(PVNCF/PVCAFC)		0.00	0.90				
		5.00	0.79				
PVCAFC		10.00	0.68				
		15.00	0.58				
		20.00	0.50				
		25.00	0.43				
MAX CASH EXPOSURE MM\$/S CONSTANT		-664.39					
W/O FIN							

STATE OF ALASKA DEPT. OF REVENUE

PETROLEUM RESEARCH SECTION

ECONOMIC FEASIBILITY MODEL: ALASKA NORTH SLOPE OIL FIELD DEVELOPMENT DECISION

NOTE: ANALYSIS OF DEVELOPMENT FEASIBILITY ONLY, IGNORES SUNK COSTS OF G&G AND EXPLORATION IN CAPITAL COSTS

PUBLIC VERSION: EQUIVALENT AMORTIZED ECONOMIC RENT FOR HYPOTHETICAL FIELD

FOR MORE INFORMATION CONTACT CHUCK LOGSDON AT (907) 277-5627

MAINFRAME MODEL REQUIRED FOR ENHANCED RECOVERY ANALYSIS, SIMULTANEOUS MULTI-FIELD SUPPLY ANALYSIS AND SHUTDOWN ANALYSIS

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FIELD INPUT ASSUMPTIONS              ANALYSIS OPTIONS      0
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FIELD NAME:                          WEST SAK              INCREMENTAL - ONGOING OPERATOR = 0
-----
FIELD ASSUMPTIONS:                  STAND ALONE - NEW INVESTOR = 1
FISCAL: AK/US
PROPORTION PRODN AK LEASES          1.0000
AK ROYALTY RATE                     0.1250
AK NET PROFIT BONUS ROY RATE        0.0000
AK SEV TAX NOM RATE 1ST 5 YRS       0.1225
AK SEV TAX NOM RATE YR 6 ON         0.1500
AK PROPERTY TAX RATE                0.0200
AK ST CORP TAX EFF RATE             0.0140
PROPORTION PRODN US FED LEASES      0.0000
US FED ROYALTY RATE                 0.0000
US FED CORP TAX EFF RATE            0.3400
COST:
TOTAL LEASE ACQUIS COST MM$'S HISTOR 200.0000 FOR CALC OF LEASE AMORT / DEPLETION
FIXED OPER COST MM$'S CONSTANT      62.70
VARIABLE OPER COST $'S/DBL CONSTANT 2.61
PRODN YEAR TO START WORKOVERS       3
WORKOVER COST MM$'S/ WELL CONSTANT  0.52
WORKOVER ROTATION FACTOR             N/A
PROPORTION WELL CAPITAL COST INTANG  0.7000
PROPORTION FACIL CAPITAL COST INTANG 0.3000
AK PTY TAX TR ORIG CO ANN ESCAL RATE 0.0500
FINANCING: ASSUMED PROPORTION OF CAPITAL COST OBTAINED AT BEG OF EACH YEAR
PROPORTION OF CAPITAL COST DEBT      0.0000
CURRENT $ INTEREST RATE ON DEBT      1.0000
TERM OF DEBT IN YEARS                10
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COMMENTS:

WEST SAK BASE CASE / BASE YEAR 1991

CONSTANT \$'S = 1991 \$'S

CURRENT \$'S = \$'S OF THE DAY

INFLATION ASSUMED 4.5% PER YEAR FROM 1990

FIELD INPUT ASSUMPTIONS TABLE BY YEAR

WEST SAK

[illegible]

WEST SAK

	VAR OPER COST CONS \$ ESCAL RATE PCT/Y	VAR OPER COST CURR \$ ESCAL FACTOR	VAR OPER COST MM\$'S CURRENT	WORK OVER COST CONS \$ ESCAL RATE PCT/Y	WORK OVER COST CURR \$ ESCAL FACTOR	PRODN WELLS FOR ELF CALCS	TOT WELLS FOR WORK OVER ROTATION ELF CALCS	WORK OVER COST MM\$'S CURRENT	FIELD PIPE PROFIT \$'S/BDL CURRENT	TAPS PROFIT \$'S/BDL CURRENT
1991		1.0000	0.00		1.0000	0	0	0.3333	0.00	0.00
1992	0.00	1.0450	5.98	0.00	1.0450	17	21	0.3333	0.00	0.00
	0.00	1.0920	6.25	0.00	1.0920	17	21	0.3333	0.00	0.00
	0.00	1.1412	6.53	0.00	1.1412	17	21	0.3333	4.15	0.00
	0.00	1.1925	13.65	0.00	1.1925	34	45	0.3333	9.30	0.00
	0.00	1.2462	14.26	0.00	1.2462	34	45	0.3333	9.72	0.00
	0.00	1.3023	14.90	0.00	1.3023	34	45	0.3333	10.16	0.00
	0.00	1.3609	32.46	0.00	1.3609	71	90	0.3333	21.23	0.00
	0.00	1.4221	33.92	0.00	1.4221	71	90	0.3333	22.18	0.00
	0.00	1.4861	70.85	0.00	1.4861	143	175	0.3333	45.07	0.00
	0.00	1.5530	74.04	0.00	1.5530	143	175	0.3333	47.10	0.00
	0.00	1.6229	116.08	0.00	1.6229	214	250	0.3333	70.32	0.00
	0.00	1.6959	121.31	0.00	1.6959	214	250	0.3333	73.48	0.00
	0.00	1.7722	168.99	0.00	1.7722	286	350	0.3333	107.50	0.00
	0.00	1.8519	176.59	0.00	1.8519	286	350	0.3333	112.34	0.00
	6.00	2.0464	292.71	0.00	1.9353	430	525	0.3333	176.09	0.00
	6.00	2.2613	323.44	0.00	2.0224	450	550	0.3333	192.78	0.00
	6.00	2.4987	357.40	0.00	2.1134	500	625	0.3333	220.93	0.00
	6.00	2.7611	394.93	0.00	2.2085	500	625	0.3333	239.23	0.00
	6.00	3.0510	407.30	0.00	2.3079	475	600	0.3333	239.99	0.00
	6.00	3.3713	385.77	0.00	2.4117	450	550	0.2000	137.95	0.00
	6.00	3.7253	337.52	0.00	2.5202	425	525	0.2000	137.61	0.00
	6.00	4.1165	294.45	0.00	2.6337	400	500	0.2000	136.95	0.00
	6.00	4.5407	260.25	0.00	2.7522	375	450	0.1000	64.40	0.00
	6.00	5.0263	239.65	0.00	2.8760	350	425	0.1000	63.56	0.00
	6.00	5.5541	211.85	0.00	3.0054	300	375	0.0000	0.00	0.00
	6.00	6.1373	0.00	0.00	3.1407	0	0	0.0000	0.00	0.00
	6.00	6.7817	0.00	0.00	3.2820	0	0	0.0000	0.00	0.00
	6.00	7.4938	0.00	0.00	3.4297	0	0	0.0000	0.00	0.00
2020	6.00	8.2806	0.00	0.00	3.5840	0	0	0.0000	0.00	0.00

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR

INCREMENTAL ANALYSIS

WEST SAK	FIELD PS #1 GROSS WELLHEAD PRICE	PROD N PIPE PR VOLUME MMB/Y	GROSS INCOME MM\$/S CURRENT	CAPITAL COSTS MM\$/S CURRENT	OPER COSTS MM\$/S CURRENT	NET PMTS TO AK STATE GOVT MM\$/S CURRENT	NET PMTS TO US FED GOVT MM\$/S CURRENT	NET PMTS TO FINAN COMMUN MM\$/S CURRENT	CO NET CASHFLOW MM\$/S CURRENT	NET PMTS TO AK STATE GOVT MM\$/S CURRENT	NET PMTS TO US FED GOVT MM\$/S CURRENT	CO NET CASHFLOW MM\$/S CURRENT
RELATIVE YEAR	PRODN VOLUME MMB/Y	PIPE PR \$/S/BBL CURRENT	GROSS INCOME MM\$/S CURRENT	CAPITAL COSTS MM\$/S CURRENT	OPER COSTS MM\$/S CURRENT	NET PMTS TO AK STATE GOVT MM\$/S CURRENT	NET PMTS TO US FED GOVT MM\$/S CURRENT	NET PMTS TO FINAN COMMUN MM\$/S CURRENT	CO NET CASHFLOW MM\$/S CURRENT	NET PMTS TO AK STATE GOVT MM\$/S CURRENT	NET PMTS TO US FED GOVT MM\$/S CURRENT	CO NET CASHFLOW MM\$/S CURRENT
1991	0.00	14.20	0.00	52.25	0.00	0.72	-5.57	0.00	-47.40	0.72	-5.57	-47.40
1992	2.19	14.88	32.60	22.93	71.50	4.18	-20.98	0.00	-45.04	4.18	-20.98	-45.04
1993	2.19	15.60	34.16	0.00	74.72	4.35	-19.45	0.00	-25.46	4.35	-19.45	-25.46
1994	2.19	16.34	35.79	0.00	82.23	4.46	-20.46	0.00	-30.45	4.46	-20.46	-30.45
1995	4.38	17.12	74.98	36.14	97.72	9.70	-20.15	0.00	-48.42	9.70	-20.15	-48.42
1996	4.38	17.93	78.55	0.00	102.11	10.12	-15.11	0.00	-18.58	10.12	-15.11	-18.58
1997	4.38	18.78	82.27	0.00	106.71	10.55	-15.07	0.00	-19.92	10.55	-15.07	-19.92
1998	9.13	19.67	179.59	71.11	139.01	23.46	-10.49	0.00	-43.49	23.46	-10.49	-43.49
1999	9.13	20.60	188.06	74.30	145.27	25.50	-9.62	0.00	-47.38	25.50	-9.62	-47.38
2000	18.25	21.57	393.62	147.53	209.11	52.75	8.57	0.00	-24.34	52.75	8.57	-24.34
2001	18.25	22.58	412.11	0.00	218.52	55.00	33.63	0.00	104.96	55.00	33.63	104.96
2002	27.38	23.64	647.27	144.15	288.15	86.34	54.60	0.00	74.03	86.34	54.60	74.03
2003	27.38	24.75	677.57	0.00	301.12	90.06	81.65	0.00	204.74	90.06	81.65	204.74
2004	36.50	25.90	945.47	203.71	387.61	128.33	94.20	0.00	131.61	128.33	94.20	131.61
2005	36.50	27.11	989.57	0.00	405.05	133.82	132.61	0.00	318.10	133.82	132.61	318.10
2006	54.75	28.37	1553.50	394.36	590.14	232.60	158.05	0.00	178.34	232.60	158.05	178.34
2007	54.75	29.69	1625.74	52.83	643.02	233.86	213.78	0.00	482.24	233.86	213.78	482.24
2008	54.75	31.07	1701.24	187.72	718.84	222.37	196.97	0.00	375.35	222.37	196.97	375.35
2009	54.75	32.51	1780.14	0.00	772.63	231.26	233.63	0.00	542.62	231.26	233.63	542.62
2010	51.10	34.02	1738.41	0.00	792.00	224.97	220.92	0.00	500.53	224.97	220.92	500.53
2011	43.80	35.59	1559.00	0.00	668.43	202.46	215.23	0.00	472.87	202.46	215.23	472.87
2012	34.68	37.24	1291.41	0.00	619.83	167.19	158.48	0.00	345.91	167.19	158.48	345.91
2013	27.38	38.96	1066.63	0.00	568.15	137.45	114.13	0.00	246.90	137.45	114.13	246.90
2014	21.90	40.75	892.47	0.00	453.87	115.12	105.41	0.00	218.07	115.12	105.41	218.07
2015	18.25	42.63	777.98	0.00	425.32	99.31	83.19	0.00	170.16	99.31	83.19	170.16
2016	14.60	44.59	651.01	0.00	327.25	82.69	80.40	0.00	160.68	82.69	80.40	160.68
2017	0.00	46.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	48.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	51.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	53.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	632.94	PV AMORT PRICE \$/S/BBL	19409.13	1387.04	9208.30	2588.58	2048.57	0.00	4176.64	2588.58	2048.57	4176.64
NPV'S @ PCT	BEG YR 1	\$/S/BBL										
0.00	632.94	30.67	19409.13	1387.04	9208.30	2588.58	2048.57	0.00	4176.64	2588.58	2048.57	4176.64
5.00	280.61	29.18	8188.42	750.35	4029.26	1096.56	772.65	0.00	1539.60	1096.56	772.65	1539.60
10.00	136.47	27.69	3778.92	440.07	1977.92	507.54	293.54	0.00	559.86	507.54	293.54	559.86
15.00	72.36	26.22	1897.33	279.53	1083.79	255.27	103.12	0.00	175.61	255.27	103.12	175.61
20.00	41.55	24.81	1030.82	191.55	656.51	138.80	24.44	0.00	19.52	138.80	24.44	19.52
25.00	25.66	23.48	602.59	140.60	433.70	81.16	-8.53	0.00	-44.33	81.16	-8.53	-44.33

ROR % W/ FIN ---- 21.11

ROR % W/O FIN --- 21.11

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	----	----
	CAPC W/ FIN	CAPC W/O FIN
@ PCT	----	----
0.00	4.01	4.01
5.00	3.05	3.05
10.00	2.27	2.27
15.00	1.63	1.63
20.00	1.10	1.10
25.00	0.68	0.68

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

WEST SAK	FIELD							AK STATE GOVT	US FED GOVT	CO NET
	PS #1									
	GROSS									
	WELLHEAD									
RELATIVE YEAR	PRODN VOLUME MMB/Y	PRICE \$/BBL CURRENT	GROSS INCOME MM\$'S CURRENT	CAPITAL COSTS MM\$'S CURRENT	OPER COSTS MM\$'S CURRENT	ECONOMIC RENT MM\$'S CURRENT	W/O FIN MM\$'S CURRENT	REVS MM\$'S CURRENT	W/O FIN MM\$'S CURRENT	CASHFLOW MM\$'S CURRENT
1991	0.00	14.20	0.00	52.25	0.00	-52.25	0.72	-5.57	-47.40	
1992	2.19	14.88	32.60	22.93	71.50	-61.84	4.18	-20.98	-45.04	
1993	2.19	15.60	34.16	0.00	74.72	-40.56	4.35	-19.45	-25.46	
1994	2.19	16.34	35.79	0.00	82.23	-46.45	4.46	-20.46	-30.45	
1995	4.38	17.12	74.98	36.14	97.72	-58.87	9.70	-20.15	-48.42	
1996	4.38	17.93	78.55	0.00	102.11	-23.57	10.12	-15.11	-18.58	
1997	4.38	18.78	82.27	0.00	106.71	-24.44	10.55	-15.07	-19.92	
1998	9.13	19.67	179.59	71.11	139.01	-30.53	23.46	-10.49	-43.49	
1999	9.13	20.60	188.06	74.30	145.27	-31.51	25.50	-9.62	-47.38	
2000	18.25	21.57	393.62	147.53	209.11	36.98	52.75	8.57	-24.34	
2001	18.25	22.58	412.11	0.00	218.52	193.59	55.00	33.63	104.96	
2002	27.38	23.64	647.27	144.15	288.15	214.97	86.34	54.60	74.03	
2003	27.38	24.75	677.57	0.00	301.12	376.45	90.06	81.65	204.74	
2004	36.50	25.90	945.47	203.71	387.61	354.14	128.33	94.20	131.61	
2005	36.50	27.11	989.57	0.00	405.05	584.52	133.82	132.61	318.10	
2006	54.75	28.37	1553.50	394.36	590.14	568.99	232.60	158.05	178.34	
2007	54.75	29.69	1625.74	52.83	643.02	929.89	233.86	213.78	482.24	
2008	54.75	31.07	1701.24	187.72	718.84	794.69	222.37	196.97	375.35	
2009	54.75	32.51	1780.14	0.00	772.63	1007.51	231.26	233.63	542.62	
2010	51.10	34.02	1738.41	0.00	792.00	946.42	224.97	220.92	500.53	
2011	43.80	35.59	1559.00	0.00	668.43	890.57	202.46	215.23	472.87	
2012	34.68	37.24	1291.41	0.00	619.83	671.58	167.19	158.48	345.91	
2013	27.38	38.96	1066.63	0.00	568.15	498.48	137.45	114.13	246.90	
2014	21.90	40.75	892.47	0.00	453.87	438.60	115.12	105.41	218.07	
2015	18.25	42.63	777.98	0.00	425.32	352.65	99.31	83.19	170.16	
2016	14.60	44.59	651.01	0.00	327.25	323.77	82.69	80.40	160.68	
2017	0.00	46.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2018	0.00	48.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2019	0.00	51.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2020	0.00	53.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	632.94	PV AMORT PRICE	19409.13	1387.04	9208.30	8813.79	2588.58	2048.57	4176.64	
NPV'S REG YR 1		\$'S/BBL								
# PCT										
0.00	632.94	30.67	19409.13	1387.04	9208.30	8813.79	2588.58	2048.57	4176.64	
5.00	280.61	29.18	8188.42	750.35	4029.26	3408.81	1096.56	772.65	1539.60	
10.00	136.47	27.69	3778.92	440.07	1977.92	1360.94	507.54	293.54	559.86	
15.00	72.36	26.22	1897.33	279.53	1083.79	534.01	255.27	103.12	175.61	
20.00	41.55	24.81	1030.82	191.55	656.51	182.76	138.80	24.44	19.52	
25.00	25.66	23.48	602.59	140.60	433.70	28.29	81.16	-8.53	-44.33	

	FIELD PS #1 GROSS WELLHEAD PRICE +PIPE PR \$/S/BDL CURRENT	CAPITAL COST'S MM\$'S CURRENT	OPER COSTS MM\$'S CURRENT	ECONOMIC RENT MM\$'S CURRENT	STATE GOVT REVS W/O FIN CURRENT	FED GOVT REVS W/O FIN CURRENT	CO NET CASHFLOW W/O FIN MM\$'S CURRENT
PER BBL PV'S							
0 PCT							
0.00	30.67	2.19	14.55	13.93	4.09	3.24	6.60
5.00	29.18	2.67	14.36	12.15	3.91	2.75	5.49
10.00	27.69	3.22	14.49	9.97	3.72	2.15	4.10
15.00	26.22	3.86	14.98	7.38	3.53	1.43	2.43
20.00	24.81	4.61	15.80	4.40	3.34	0.59	0.47
25.00	23.48	5.48	16.90	1.10	3.16	-0.33	-1.73

PERCENTAGE DIVISION OF PV ECON RENT	-----	0 PCT					
		0.00	100.00	29.37	23.24	47.39	
		5.00	100.00	32.17	22.67	45.17	
		10.00	100.00	37.29	21.57	41.14	
		15.00	100.00	47.80	19.31	32.89	
		20.00	100.00	75.94	13.37	10.68	
		25.00	100.00	286.84	-30.15	-156.70	

PAY OUT TIME IN YEARS	-----	12.84					
ROR % W/O FIN	-----	21.11					
PROFITABILITY RATIOS W/O FIN	-----						
	0 PCT						
(PVNCF+PVCAFC)	0.00	4.01					
	5.00	3.05					
PVCAFC	10.00	2.27					
	15.00	1.63					
	20.00	1.10					
	25.00	0.68					

MAX CASH EXPOSURE MM\$'S CURRENT	---	-350.48					
W/O FIN							

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

WEST SAK	FIELD												
	PS #1												
	GROSS												
	WELLHEAD												
RELATIVE YEAR	PROD	PIPE	PR	GROSS	CAPITAL	OPER	NET	NET	NET	NET	NET	NET	CO
	VOLUME	*PIPER	PRICE	INCOME	COSTS	COSTS	AK STATE	US FED	FINAN	CASHFLOW	AK STATE	US FED	CO
	MMB/Y	\$/BBL	CONSTANT	MM\$/S	MM\$/S	MM\$/S	W/ FIN	W/ FIN	COMMUN	W/ FIN	W/O FIN	W/O FIN	W/O FIN
	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
1991	0.00	14.20	0.00	52.25	0.00	0.72	-5.57	0.00	-47.40	0.72	-5.57	-47.40	
1992	2.19	14.24	31.19	21.95	68.42	4.00	-20.07	0.00	-43.10	4.00	-20.07	-43.10	
1993	2.19	14.28	31.28	0.00	68.42	3.98	-17.81	0.00	-23.31	3.98	-17.81	-23.31	
1994	2.19	14.32	31.36	0.00	72.06	3.91	-17.93	0.00	-26.69	3.91	-17.93	-26.69	
1995	4.38	14.36	62.88	30.31	81.94	8.14	-16.90	0.00	-40.61	8.14	-16.90	-40.61	
1996	4.38	14.39	63.03	0.00	81.94	8.12	-12.12	0.00	-14.91	8.12	-12.12	-14.91	
1997	4.38	14.42	63.17	0.00	81.94	8.10	-11.57	0.00	-15.30	8.10	-11.57	-15.30	
1998	9.13	14.45	131.97	52.25	102.15	17.24	-7.71	0.00	-31.96	17.24	-7.71	-31.96	
1999	9.13	14.48	132.24	52.25	102.15	17.93	-6.77	0.00	-33.32	17.93	-6.77	-33.32	
2000	18.25	14.51	264.87	99.28	140.71	35.50	5.77	0.00	-16.38	35.50	5.77	-16.38	
2001	18.25	14.54	265.37	0.00	140.71	35.42	21.66	0.00	67.58	35.42	21.66	67.58	
2002	27.38	14.57	398.85	88.83	177.56	53.20	33.65	0.00	45.62	53.20	33.65	45.62	
2003	27.38	14.59	399.54	0.00	177.56	53.10	48.15	0.00	120.73	53.10	48.15	120.73	
2004	36.50	14.62	533.50	114.95	218.72	72.41	53.16	0.00	74.26	72.41	53.16	74.26	
2005	36.50	14.64	534.34	0.00	218.72	72.26	71.60	0.00	171.76	72.26	71.60	171.76	
2006	54.75	14.66	802.72	203.78	304.94	120.19	81.67	0.00	92.15	120.19	81.67	92.15	
2007	54.75	14.68	803.88	26.13	317.95	115.64	105.71	0.00	238.45	115.64	105.71	238.45	
2008	54.75	14.70	804.99	88.83	340.14	105.22	93.20	0.00	177.61	105.22	93.20	177.61	
2009	54.75	14.72	806.05	0.00	349.85	104.71	105.79	0.00	245.70	104.71	105.79	245.70	
2010	51.10	14.74	753.26	0.00	343.17	97.48	95.72	0.00	216.88	97.48	95.72	216.88	
2011	43.80	14.76	646.43	0.00	277.16	83.95	89.24	0.00	196.07	83.95	89.24	196.07	
2012	34.68	14.78	512.42	0.00	245.94	66.34	62.88	0.00	137.25	66.34	62.88	137.25	
2013	27.38	14.79	405.00	0.00	215.73	52.19	43.33	0.00	93.75	52.19	43.33	93.75	
2014	21.90	14.81	324.28	0.00	164.91	41.83	38.30	0.00	79.24	41.83	38.30	79.24	
2015	18.25	14.82	270.50	0.00	147.89	34.53	28.93	0.00	59.16	34.53	28.93	59.16	
2016	14.60	14.84	216.61	0.00	108.88	27.51	26.75	0.00	53.46	27.51	26.75	53.46	
2017	0.00	14.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2018	0.00	14.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2019	0.00	14.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2020	0.00	14.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	632.94	PV AMORT	9289.73	830.78	4549.56	1243.60	889.06	0.00	1776.73	1243.60	889.06	1776.73	
NPV'S	BEG YR 1	\$/BBL											
0 PCT													
0.00	632.94	14.68	9289.73	830.78	4549.56	1243.60	889.06	0.00	1776.73	1243.60	889.06	1776.73	
5.00	280.61	14.65	4111.33	472.58	2143.14	552.11	323.81	0.00	619.69	552.11	323.81	619.69	
10.00	136.47	14.62	1995.62	293.33	1138.80	268.49	109.00	0.00	185.99	268.49	109.00	185.99	
15.00	72.36	14.59	1055.89	197.80	675.24	142.17	23.76	0.00	16.92	142.17	23.76	16.92	
20.00	41.55	14.56	605.04	143.72	439.88	81.49	-10.57	0.00	-49.48	81.49	-10.57	-49.48	
25.00	25.66	14.53	372.80	111.30	309.35	50.22	-23.92	0.00	-74.16	50.22	-23.92	-74.16	

ROR % W/ FIN ---- 15.90

ROR % W/O FIN --- 15.90

PROFITABILITY RATIOS

0 PCT	(NCF+CAPC)	

	CAPC	
	W/ FIN	
0.00	3.14	3.14
5.00	2.31	2.31
10.00	1.63	1.63
15.00	1.09	1.09
20.00	0.66	0.66
25.00	0.33	0.33

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR INCREMENTAL ANALYSIS

WEST SAK	FIELD PS #1	GROSS WELLHEAD PRICE	GROSS INCOME	CAPITAL COSTS	OPER COSTS	ECONOMIC RENT	AK STATE GOVT REVS	US FED GOVT REVS	CO NET CASHFLOW
RELATIVE YEAR	PROD N VOLUME	PIPE PR \$/S/BBL	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT
1991	0.00	14.20	0.00	52.25	0.00	-52.25	0.72	-5.57	-47.40
1992	2.19	14.24	31.19	21.95	68.42	-59.17	4.00	-20.07	-43.10
1993	2.19	14.28	31.28	0.00	68.42	-37.14	3.98	-17.81	-23.31
1994	2.19	14.32	31.36	0.00	72.06	-40.70	3.91	-17.93	-26.69
1995	4.38	14.36	62.88	30.31	81.94	-49.37	8.14	-16.90	-40.61
1996	4.38	14.39	63.03	0.00	81.94	-18.91	8.12	-12.12	-14.91
1997	4.38	14.42	63.17	0.00	81.94	-18.77	8.10	-11.57	-15.30
1998	9.13	14.45	131.97	52.25	102.15	-22.43	17.24	-7.71	-31.96
1999	9.13	14.48	132.24	52.25	102.15	-22.16	17.93	-6.77	-33.32
2000	18.25	14.51	264.87	99.28	140.71	24.88	35.50	5.77	-16.38
2001	18.25	14.54	265.37	0.00	140.71	124.66	35.42	21.66	67.58
2002	27.38	14.57	398.85	88.83	177.56	132.46	53.20	33.65	45.62
2003	27.38	14.59	399.54	0.00	177.56	221.98	53.10	48.15	120.73
2004	36.50	14.62	533.50	114.95	218.72	199.83	72.41	53.16	74.26
2005	36.50	14.64	534.34	0.00	218.72	315.63	72.26	71.60	171.76
2006	54.75	14.66	802.72	203.78	304.94	294.01	120.19	81.67	92.15
2007	54.75	14.68	803.88	26.13	317.95	459.80	115.64	105.71	238.45
2008	54.75	14.70	804.99	88.83	340.14	376.03	105.22	93.20	177.61
2009	54.75	14.72	806.05	0.00	349.85	456.20	104.71	105.79	245.70
2010	51.10	14.74	753.26	0.00	343.17	410.08	97.48	95.72	216.88
2011	43.80	14.76	646.43	0.00	277.16	369.27	83.95	89.24	196.07
2012	34.68	14.78	512.42	0.00	245.94	266.48	66.34	62.88	137.25
2013	27.38	14.79	405.00	0.00	215.73	189.27	52.19	43.33	93.75
2014	21.90	14.81	324.28	0.00	164.91	159.37	41.83	38.30	79.24
2015	18.25	14.82	270.50	0.00	147.89	122.62	34.53	28.93	59.16
2016	14.60	14.84	216.61	0.00	108.88	107.73	27.51	26.75	53.46
2017	0.00	14.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	14.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	14.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	14.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	632.94	PV AMORT	9289.73	830.78	4549.56	3909.39	1243.60	889.06	1776.73
NPV'S BEG YR 1	PRICE								
0.00	632.94	14.68	9289.73	830.78	4549.56	3909.39	1243.60	889.06	1776.73
5.00	280.61	14.65	4111.33	472.58	2143.14	1495.61	552.11	323.81	619.69
10.00	136.47	14.62	1995.62	293.33	1138.80	563.49	268.49	109.00	185.99
15.00	72.36	14.59	1055.89	197.80	675.24	182.85	142.17	23.76	16.92
20.00	41.55	14.56	605.04	143.72	439.88	21.44	81.49	-10.57	-49.48
25.00	25.66	14.53	372.80	111.30	309.35	-47.85	50.22	-23.92	-74.16

FIELD PS #1	GROSS WELLHEAD PRICE	CAPITAL COSTS	OPER COSTS	ECONOMIC RENT	STATE GOVT REVS	FED GOVT REVS	CO NET CASHFLOW
PER BBL PV'S	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT	MM\$/S CONSTANT
0.00	14.68	1.31	7.19	6.18	1.96	1.40	2.81
5.00	14.65	1.68	7.64	5.33	1.97	1.15	2.21
10.00	14.62	2.15	8.34	4.13	1.97	0.80	1.36
15.00	14.59	2.73	9.33	2.53	1.96	0.33	0.23
20.00	14.56	3.46	10.59	0.52	1.96	-0.25	-1.19
25.00	14.53	4.34	12.06	-1.86	1.96	-0.93	-2.89
PERCENTAGE DIVISION OF PV ECON RENT	0.00	100.00	31.81	22.74	45.45		
	5.00	100.00	36.92	21.65	41.43		
	10.00	100.00	47.65	19.34	33.01		
	15.00	100.00	77.75	12.99	9.25		
	20.00	100.00	380.07	-49.31	-230.76		
	25.00	100.00	-104.95	49.98	154.97		
PAY OUT TIME IN YEARS	13.79						
ROR % W/O FIN	15.90						
PROFITABILITY RATIOS W/O FIN							
(PVNCF+PVCAPC)	0.00	3.14					
	5.00	2.31					
PVCAPC	10.00	1.63					
	15.00	1.09					
	20.00	0.66					
	25.00	0.33					
MAX CASH EXPOSURE MM\$/S CONSTANT	-292.96						
W/O FIN							

STATE OF ALASKA DEPT. OF REVENUE

PETROLEUM RESEARCH SECTION

ECONOMIC FEASIBILITY MODEL: ALASKA NORTH SLOPE OIL FIELD DEVELOPMENT DECISION

NOTE: ANALYSIS OF DEVELOPMENT FEASIBILITY ONLY, IGNORES SUNK COSTS OF G&G AND EXPLORATION IN CAPITAL COSTS

PUBLIC VERSION: EQUIVALENT AMORTIZED ECONOMIC RENT FOR HYPOTHETICAL FIELD

FOR MORE INFORMATION CONTACT CHUCK LOGSDON AT (907) 277-5627

MAINFRAME MODEL REQUIRED FOR ENHANCED RECOVERY ANALYSIS, SIMULTANEOUS MULTI-FIELD SUPPLY ANALYSIS AND SHUTDOWN ANALYSIS

FIELD INPUT ASSUMPTIONS		ANALYSIS OPTIONS
-----		-----
FIELD NAME:	WEST SAK	INCREMENTAL - ONGOING OPERATOR = 0
-----		-----
FIELD ASSUMPTIONS:		STAND ALONE - NEW INVESTOR = 1

FISCAL: AK/US		
PROPORTION PRODN AK LEASES	1.0000	
AK ROYALTY RATE	0.1250	COMMENTS:
AK NET PROFIT BONUS ROY RATE	0.0000	-----
AK SEV TAX NOM RATE 1ST 5 YRS	0.1225	WEST SAK BASE CASE / BASE YEAR 1991
AK SEV TAX NOM RATE YR 6 ON	0.1500	CONSTANT \$'S : 1991 \$'S
AK PROPERTY TAX RATE	0.0200	CURRENT \$'S = \$'S OF THE DAY
AK ST CORP TAX EFF RATE	0.0140	INFLATION ASSUMED 4.5% PER YEAR FROM 1990
PROPORTION PRODN US FED LEASES	0.0000	
US FED ROYALTY RATE	0.0000	
US FED CORP TAX EFF RATE	0.3400	
COST:		
TOTAL LEASE ACQUIS COST MM\$'S HISTOR 200.0000 FOR CALC OF LEASE AMORT / DEPLETION		
FIXED OPER COST MM\$'S CONSTANT	62.70	
VARIABLE OPER COST \$'S/BBL CONSTANT	2.61	
PRODN YEAR TO START WORKOVERS	3	
WORKOVER COST MM\$'S/WELL CONSTANT	0.52	
WORKOVER ROTATION FACTOR	N/A	
PROPORTION WELL CAPITAL COST INTANG	0.7000	
PROPORTION FACIL CAPITAL COST INTANG	0.3000	
AK PTY TAX TR ORIG CO ANN ESCAL RATE	0.0500	
FINANCING: ASSUMED PROPORTION OF CAPITAL COST OBTAINED AT BEG OF EACH YEAR		
PROPORTION OF CAPITAL COST DEBT	0.0000	
CURRENT \$ INTEREST RATE ON DEBT	1.0000	
TERM OF DEBT IN YEARS	10	

FIELD INPUT ASSUMPTIONS TABLE BY YEAR

WEST SAK

INFLATION			FACILITY CAPITAL				WELL CAPITAL				PRUDHOE BAY OIL		FIELD		FIELD		FIELD		FIXED		FIXED			
RELATIVE YEAR	RATE PCT/Y	INFLATION FACTOR	FACILITY CAPITAL COST MM\$'S CONSTANT	FACILITY CAPITAL COST RATE PCT/Y	FACILITY CAPITAL COST ESCAL FACTOR	FACILITY CAPITAL COST MM\$'S CURRENT	WELL CAPITAL COST MM\$'S CONSTANT	WELL CAPITAL COST RATE PCT/Y	WELL CAPITAL COST ESCAL FACTOR	WELL CAPITAL COST MM\$'S CURRENT	PRODN VOLUME MMBBL/Y	RELATIVE PRODN YEAR	GROSS WELHEAD PRICE \$'S/DBL CURRENT	FIELD TARIFF COST \$'S/DBL CURRENT	FIELD QUALITY DIFFER \$'S/DBL CURRENT	FIELD GROSS WELHEAD PRICE \$'S/DBL CURRENT	FIELD COSTS 4/ ROY CALC \$'S/DBL CURRENT	FIELD ROY WELHEAD PRICE \$'S/DBL CURRENT	OPER COST \$ ESCAL RATE PCT/Y	FIXED OPER COST \$ ESCAL FACTOR	FIXED OPER COST MM\$'S CURRENT			
1991		1.0000	52.25		1.0000	52.25	0.00		1.0000	0.00	0.00	0	15.15	0.95	0.00	14.20	0.52	13.68		1.0000	0.00			
1992	4.50	1.0450	0.00	0.00	1.0450	0.00	21.95	0.00	1.0450	22.93	2.19	1	15.83	0.95	0.00	14.88	0.54	14.34	0.00	1.0450	65.52			
1993	4.50	1.0920	0.00	0.00	1.0920	0.00	0.00	0.00	1.0920	0.00	2.19	2	16.55	0.95	0.00	15.60	0.57	15.03	0.00	1.0920	68.47			
1994	4.50	1.1412	0.00	0.00	1.1412	0.00	0.00	0.00	1.1412	0.00	2.19	3	17.29	0.95	0.00	16.34	0.59	15.75	0.00	1.1412	71.55			
1995	4.50	1.1925	5.23	0.00	1.1925	6.23	25.08	0.00	1.1925	29.91	4.38	4	18.07	0.95	0.00	17.12	0.62	16.50	0.00	1.1925	74.77			
1996	4.50	1.2462	0.00	0.00	1.2462	0.00	0.00	0.00	1.2462	0.00	4.38	5	18.88	0.95	0.00	17.93	0.65	17.28	0.00	1.2462	78.14			
1997	4.50	1.3023	0.00	0.00	1.3023	0.00	0.00	0.00	1.3023	0.00	4.38	6	19.73	0.95	0.00	18.78	0.68	18.11	0.00	1.3023	81.65			
1998	4.50	1.3609	5.23	0.00	1.3609	7.11	47.03	0.00	1.3609	63.99	9.13	7	20.62	0.95	0.00	19.67	0.71	18.96	0.00	1.3609	85.33			
1999	4.50	1.4221	52.25	0.00	1.4221	74.30	0.00	0.00	1.4221	0.00	9.13	8	21.55	0.95	0.00	20.60	0.74	19.86	0.00	1.4221	89.17			
2000	4.50	1.4861	10.45	0.00	1.4861	15.53	88.83	0.00	1.4861	132.00	18.25	9	22.52	0.95	0.00	21.57	0.77	20.80	0.00	1.4861	93.18			
2001	4.50	1.5530	0.00	0.00	1.5530	0.00	0.00	0.00	1.5530	0.00	18.25	10	23.53	0.95	0.00	22.58	0.81	21.77	0.00	1.5530	97.37			
2002	4.50	1.6229	10.45	0.00	1.6229	16.96	78.38	0.00	1.6229	127.19	27.38	11	24.59	0.95	0.00	23.64	0.84	22.80	0.00	1.6229	101.75			
2003	4.50	1.6959	0.00	0.00	1.6959	0.00	0.00	0.00	1.6959	0.00	27.38	12	25.70	0.95	0.00	24.75	0.88	23.86	0.00	1.6959	106.33			
2004	4.50	1.7722	10.45	0.00	1.7722	18.52	104.56	0.00	1.7722	185.19	36.50	13	26.85	0.95	0.00	25.90	0.92	24.98	0.00	1.7722	111.12			
2005	4.50	1.8519	0.00	0.00	1.8519	0.00	0.00	0.00	1.8519	0.00	36.50	14	28.06	0.95	0.00	27.11	0.96	26.15	0.00	1.8519	116.12			
2006	4.50	1.9353	20.90	0.00	1.9353	40.45	182.88	0.00	1.9353	353.91	54.75	15	29.32	0.95	0.00	28.37	1.01	27.37	0.00	1.9353	121.34			
2007	4.50	2.0224	0.00	0.00	2.0224	0.00	26.13	0.00	2.0224	52.83	54.75	16	30.64	0.95	0.00	29.69	1.05	28.64	0.00	2.0224	126.80			
2008	4.50	2.1134	10.45	0.00	2.1134	22.08	78.38	0.00	2.1134	165.64	54.75	17	32.02	0.95	0.00	31.07	1.10	29.97	0.00	2.1134	132.51			
2009	4.50	2.2085	0.00	0.00	2.2085	0.00	0.00	0.00	2.2085	0.00	54.75	18	33.46	0.95	0.00	32.51	1.15	31.37	0.00	2.2085	138.47			
2010	4.50	2.3079	0.00	0.00	2.3079	0.00	0.00	0.00	2.3079	0.00	51.10	19	34.97	0.95	0.00	34.02	1.20	32.82	0.00	2.3079	144.70			
2011	4.50	2.4117	0.00	0.00	2.4117	0.00	0.00	0.00	2.4117	0.00	43.80	20	36.54	0.95	0.00	35.59	1.25	34.34	-4.50	2.3079	144.70			
2012	4.50	2.5202	0.00	0.00	2.5202	0.00	0.00	0.00	2.5202	0.00	34.68	21	38.19	0.95	0.00	37.24	1.31	35.93	-4.50	2.3079	144.70			
2013	4.50	2.6337	0.00	0.00	2.6337	0.00	0.00	0.00	2.6337	0.00	27.38	22	39.91	0.95	0.00	38.96	1.37	37.59	-10.00	2.1809	136.74			
2014	4.50	2.7522	0.00	0.00	2.7522	0.00	0.00	0.00	2.7522	0.00	21.90	23	41.70	0.95	0.00	40.75	1.43	39.32	-10.00	2.0610	129.22			
2015	4.50	2.8760	0.00	0.00	2.8760	0.00	0.00	0.00	2.8760	0.00	18.25	24	43.58	0.95	0.00	42.63	1.50	41.13	-10.00	1.9476	122.12			
2016	4.50	3.0054	0.00	0.00	3.0054	0.00	0.00	0.00	3.0054	0.00	14.60	25	45.54	0.95	0.00	44.59	1.56	43.03	-10.00	1.8405	115.40			
2017	4.50	3.1407	0.00	0.00	3.1407	0.00	0.00	0.00	3.1407	0.00	0.00	25	47.59	0.95	0.00	46.64	1.63	45.01	-10.00	1.7393	0.00			
2018	4.50	3.2820	0.00	0.00	3.2820	0.00	0.00	0.00	3.2820	0.00	0.00	25	49.73	0.95	0.00	48.78	1.71	47.07	-10.00	1.6436	0.00			
2019	4.50	3.4297	0.00	0.00	3.4297	0.00	0.00	0.00	3.4297	0.00	0.00	25	51.97	0.95	0.00	51.02	1.78	49.24	-10.00	1.5532	0.00			
2020	4.50	3.5840	0.00	0.00	3.5840	0.00	0.00	0.00	3.5840	0.00	0.00	25	54.31	0.95	0.00	53.36	1.86	51.49	-10.00	1.4678	0.00			
											253.44		1133.61		632.94									

WEST CANY

VAR OPER COST CONS \$ FSCAL RATE PCT/Y	VAR OPER COST CURR \$ ESCAL FACTOR	VAR OPER COST MM\$'S CURRENT	WORK OVER COST CONS \$ FSCAL RATE PCT/Y	WORK OVER COST CURR \$ ESCAL FACTOR	PROD WELLS FOR ELF CALCS	TOT WELLS FOR WORK OVER CALCS	WORK OVER ROTATION FACTOR	WORK OVER COST MM\$'S CURRENT	FIELD PIPE FACET \$'S/BDL CURRENT	TAPS PROFIT \$'S/BDL CURRENT
1.0000	0.00		1.0000	0	0	0.3333	0.00	0.00	0.00	0.00
0.00	1.0450	5.98	0.00	1.0450	17	21	0.3333	0.00	0.00	0.00
0.00	1.0920	6.25	0.00	1.0920	17	21	0.3333	0.00	0.00	0.00
0.00	1.1412	6.53	0.00	1.1412	17	21	0.3333	4.15	0.00	0.00
0.00	1.1925	13.65	0.00	1.1925	34	45	0.3333	9.30	0.00	0.00
0.00	1.2462	14.26	0.00	1.2462	34	45	0.3333	9.72	0.00	0.00
0.00	1.3023	14.90	0.00	1.3023	34	45	0.3333	10.16	0.00	0.00
0.00	1.3609	32.46	0.00	1.3609	71	90	0.3333	21.23	0.00	0.00
0.00	1.4221	33.92	0.00	1.4221	71	90	0.3333	22.18	0.00	0.00
0.00	1.4861	70.85	0.00	1.4861	143	175	0.3333	45.07	0.00	0.00
0.00	1.5530	74.04	0.00	1.5530	143	175	0.3333	47.10	0.00	0.00
0.00	1.6229	116.08	0.00	1.6229	214	250	0.3333	70.32	0.00	0.00
0.00	1.6959	121.31	0.00	1.6959	214	250	0.3333	73.48	0.00	0.00
0.00	1.7722	168.99	0.00	1.7722	286	350	0.3333	107.50	0.00	0.00
0.00	1.8519	176.59	0.00	1.8519	286	350	0.3333	112.34	0.00	0.00
6.00	2.0464	292.71	0.00	1.9353	430	525	0.3333	176.09	0.00	0.00
6.00	2.2613	323.44	0.00	2.0224	450	550	0.3333	192.78	0.00	0.00
6.00	2.4987	357.40	0.00	2.1134	500	625	0.3333	228.93	0.00	0.00
6.00	2.7611	394.93	0.00	2.2085	500	625	0.3333	239.23	0.00	0.00
6.00	3.0510	407.30	0.00	2.3079	475	600	0.3333	239.99	0.00	0.00
6.00	3.3713	385.77	0.00	2.4117	450	550	0.2000	137.95	0.00	0.00
6.00	3.7253	337.52	0.00	2.5202	425	525	0.2000	137.61	0.00	0.00
6.00	4.1165	294.45	0.00	2.6337	400	500	0.2000	136.95	0.00	0.00
6.00	4.5487	260.25	0.00	2.7522	375	450	0.1000	64.40	0.00	0.00
6.00	5.0263	239.65	0.00	2.8760	350	425	0.1000	63.56	0.00	0.00
6.00	5.5541	211.85	0.00	3.0054	300	375	0.0000	0.00	0.00	0.00
6.00	6.1373	0.00	0.00	3.1407	0	0	0.0000	0.00	0.00	0.00
6.00	6.7817	0.00	0.00	3.2820	0	0	0.0000	0.00	0.00	0.00
6.00	7.4938	0.00	0.00	3.4297	0	0	0.0000	0.00	0.00	0.00
6.00	8.2806	0.00	0.00	3.5840	0	0	0.0000	0.00	0.00	0.00

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR

STAND ALONE ANALYSIS

WEST SAK	FIELD												
	PS 81												
	GROSS												
RELATIVE YEAR	WELLHEAD												
	PRICE												
	PROD'n VOLUME MMB/Y	PIPE PR \$/S/DBL CURRENT	GROSS INCOME MM\$'S CURRENT	CAPITAL COSTS MM\$'S CURRENT	OPER COSTS MM\$'S CURRENT	NET PNTS TO AK STATE W/ FIN MM\$'S CURRENT	NET PNTS TO US FED GOVT MM\$'S CURRENT	NET PNTS TO COMMON W/ FIN MM\$'S CURRENT	CO NET CASHFLOW MM\$'S CURRENT	NET PNTS TO AK STATE W/O FIN MM\$'S CURRENT	NET PNTS TO US FED GOVT W/O FIN MM\$'S CURRENT	CO NET CASHFLOW MM\$'S CURRENT	
1991	0.00	14.20	0.00	52.25	0.00	0.73	0.00	0.00	-52.98	0.73	0.00	-52.98	
1992	2.19	14.88	32.60	22.93	71.50	4.80	0.00	0.00	-66.64	4.80	0.00	-66.64	
1993	2.19	15.60	34.16	0.00	74.72	5.00	0.00	0.00	-45.56	5.00	0.00	-45.56	
1994	2.19	16.34	35.79	0.00	82.23	5.20	0.00	0.00	-51.65	5.20	0.00	-51.65	
1995	4.38	17.12	74.98	36.14	97.72	10.19	0.00	0.00	-69.07	10.19	0.00	-69.07	
1996	4.38	17.93	78.55	0.00	102.11	10.63	0.00	0.00	-34.19	10.63	0.00	-34.19	
1997	4.38	18.78	82.27	0.00	106.71	11.07	0.00	0.00	-35.52	11.07	0.00	-35.52	
1998	9.13	19.67	179.59	71.11	139.01	2.28	0.00	0.00	-53.81	23.28	0.00	-53.81	
1999	9.13	20.60	188.06	74.30	145.27	25.34	0.00	0.00	-56.85	25.34	0.00	-56.85	
2000	18.25	21.57	393.62	147.53	209.11	51.10	0.00	0.00	-14.12	51.10	0.00	-14.12	
2001	18.25	22.58	412.11	0.00	218.52	53.43	0.00	0.00	140.16	53.43	0.00	140.16	
2002	27.38	23.64	647.27	144.15	288.15	86.34	0.00	0.00	128.63	86.34	0.00	128.63	
2003	27.38	24.75	677.57	0.00	301.12	90.06	41.56	0.00	244.83	90.06	41.56	244.83	
2004	36.50	25.90	945.47	203.71	387.61	128.33	94.20	0.00	131.61	128.33	94.20	131.61	
2005	36.50	27.11	989.57	0.00	405.05	133.82	132.61	0.00	318.10	133.82	132.61	318.10	
2006	54.75	28.37	1553.50	394.36	590.14	232.60	158.05	0.00	178.34	232.60	158.05	178.34	
2007	54.75	29.69	1625.74	52.83	643.02	233.86	213.78	0.00	482.24	233.86	213.78	482.24	
2008	54.75	31.07	1701.24	187.72	718.84	222.37	196.97	0.00	375.35	222.37	196.97	375.35	
2009	54.75	32.51	1780.14	0.00	772.63	231.26	233.63	0.00	542.62	231.26	233.63	542.62	
2010	51.10	34.02	1738.41	0.00	792.00	224.97	220.92	0.00	500.53	224.97	220.92	500.53	
2011	43.80	35.59	1559.00	0.00	668.43	202.46	215.23	0.00	472.87	202.46	215.23	472.87	
2012	34.68	37.24	1221.41	0.00	619.83	167.19	158.48	0.00	345.91	167.19	158.48	345.91	
2013	27.38	38.96	1066.63	0.00	568.15	137.45	114.13	0.00	246.90	137.45	114.13	246.90	
2014	21.90	40.75	892.47	0.00	453.87	115.12	105.41	0.00	218.07	115.12	105.41	218.07	
2015	18.25	42.63	777.98	0.00	425.32	99.31	83.19	0.00	170.16	99.31	83.19	170.16	
2016	14.60	44.59	651.01	0.00	327.25	82.69	70.40	0.00	160.68	82.69	70.40	160.68	
2017	0.00	46.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2018	0.00	48.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2019	0.00	51.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2020	0.00	53.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	632.94	PV AMORT	19409.13	1387.04	9208.30	2588.58	2048.57	0.00	4176.64	2588.58	2048.57	4176.64	
NPV'S REG YR 1	PRICE	\$/S/DBL											
# PCT													
0.00	632.94	30.67	19409.13	1387.04	9208.30	2588.58	2048.57	0.00	4176.64	2588.58	2048.57	4176.64	
5.00	200.61	29.18	8188.42	750.35	4029.26	1097.30	805.10	0.00	1506.42	1097.30	805.10	1506.42	
10.00	136.47	27.69	3778.92	440.07	1977.92	508.58	338.17	0.00	514.18	508.58	338.17	514.18	
15.00	72.36	26.22	1897.33	279.53	1083.79	256.41	150.63	0.00	126.96	256.41	150.63	126.96	
20.00	41.55	24.81	1030.82	191.55	656.51	139.94	70.66	0.00	-27.84	139.94	70.66	-27.84	
25.00	25.66	23.48	602.59	140.60	433.70	82.24	34.70	0.00	-88.65	82.24	34.70	-88.65	

ROR % W/ FIN 18.70

ROR % W/O FIN 18.70

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	CAPC	CAPC
	W/ FIN	W/O FIN
# PCT		
0.00	4.01	4.01
5.00	3.01	3.01
10.00	2.17	2.17
15.00	1.45	1.45
20.00	0.85	0.85
25.00	0.37	0.37

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR STAND ALONE ANALYSIS

WEST SAK	FILED PS #1 GROSS WELLHEAD				AK STATE GOVT		US FED GOVT	CO NET	
	PRICE	GROSS	CAPITAL	OPER	ECONOMIC	REVS	REVS	CASHFLOW	
	PIPE PR	INCOME	COSTS	COSTS	RENT	W/O FIN	W/O FIN	W/O FIN	
RELATIVE	VOLUME	\$'S/DBL	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	
YEAR	MMB/1	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	
1991	0.00	14.20	0.00	52.25	0.00	-52.25	0.73	0.00	-52.98
1992	2.19	14.88	32.60	22.93	71.50	-61.84	4.80	0.00	-66.64
1993	2.19	15.60	34.16	0.00	74.72	-40.56	5.00	0.00	-45.56
1994	2.19	16.34	35.79	0.00	82.23	-46.45	5.20	0.00	-51.65
1995	4.38	17.12	74.98	36.14	97.72	-58.87	10.19	0.00	-69.07
1996	4.38	17.93	78.55	0.00	102.11	-23.57	10.63	0.00	-34.19
1997	4.38	18.78	82.27	0.00	106.71	-24.44	11.07	0.00	-35.52
1998	9.13	19.67	179.59	71.11	139.01	-30.53	23.28	0.00	-53.81
1999	9.13	20.60	188.06	74.30	145.27	-31.51	25.34	0.00	-56.85
2000	18.25	21.57	393.62	147.53	209.11	36.98	51.10	0.00	-14.12
2001	18.25	22.58	412.11	0.00	218.52	193.59	53.43	0.00	140.16
2002	27.38	23.64	647.27	144.15	288.15	214.97	86.34	0.00	128.63
2003	27.38	24.75	677.57	0.00	301.12	376.45	90.06	41.56	244.83
2004	36.50	25.90	945.47	203.71	387.61	354.14	128.33	94.20	131.61
2005	36.50	27.11	989.57	0.00	405.05	584.52	133.82	132.61	318.10
2006	54.75	28.37	1553.50	394.36	590.14	568.99	232.60	158.05	178.34
2007	54.75	29.69	1625.74	52.83	643.02	929.89	233.86	213.78	482.24
2008	54.75	31.07	1701.24	187.72	718.84	794.69	222.37	196.97	375.35
2009	54.75	32.51	1780.14	0.00	772.63	1007.51	231.26	233.63	542.62
2010	51.10	34.02	1738.41	0.00	792.00	946.42	224.97	220.92	500.53
2011	43.80	35.59	1559.00	0.00	668.43	890.57	202.46	215.23	472.87
2012	34.68	37.24	1291.41	0.00	619.83	671.58	167.19	158.48	345.91
2013	27.38	38.96	1066.63	0.00	568.15	498.48	137.45	114.13	246.90
2014	21.90	40.75	892.47	0.00	453.87	438.60	115.12	105.41	218.07
2015	18.25	42.63	777.98	0.00	425.32	352.65	99.31	83.19	170.16
2016	14.60	44.59	651.01	0.00	327.25	323.77	82.69	80.40	160.68
2017	0.00	46.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	48.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	51.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	53.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	632.94	PV AMORT PRICE	19409.13	1387.04	9208.30	8813.79	2588.58	2048.57	4176.64
NPV'S REF YR 1		\$'S/DBL							
# PCT									
0.00	632.94	30.67	19409.13	1387.04	9208.30	8813.79	2588.58	2048.57	4176.64
5.00	280.61	29.18	8188.42	750.35	4029.26	3408.81	1097.30	805.10	1506.42
10.00	136.47	27.69	3778.92	440.07	1977.92	1360.94	508.58	338.17	514.18
15.00	72.36	26.22	1897.33	279.53	1083.79	534.01	256.41	150.63	126.96
20.00	41.55	24.81	1030.82	191.55	656.51	182.76	139.94	70.66	-27.84
25.00	25.66	23.48	602.59	140.60	433.70	28.29	82.24	34.70	-88.65

PER BBL PV'S	FIFLD PS #1 GROSS WELLHEAD PRICE \$/S/DBL CURRENT	CAPITAL COSTS MM\$/S CURRENT	OPER COSTS MM\$/S CURRENT	ECONOMIC RENT MM\$/S CURRENT	STATE GOVT REVS MM\$/S CURRENT	FED GOVT REVS MM\$/S CURRENT	CO NET CASHFLOW MM\$/S CURRENT
# PCT							
0.00	30.67	2.19	14.55	13.93	4.09	3.24	6.60
5.00	29.18	2.67	14.36	12.15	3.91	2.87	5.37
10.00	27.69	3.22	14.49	9.97	3.73	2.48	3.77
15.00	26.22	3.86	14.98	7.38	3.54	2.08	1.75
20.00	24.81	4.61	15.80	4.40	3.37	1.70	-0.67
25.00	23.48	5.48	16.90	1.10	3.21	1.35	-3.45
PERCENTAGE DIVISION OF PV ECON RENT	# PCT						
	0.00	100.00	29.37	23.24	47.39		
	5.00	100.00	32.19	23.62	44.19		
	10.00	100.00	37.37	24.85	37.78		
	15.00	100.00	48.02	28.21	23.78		
	20.00	100.00	76.57	38.66	-15.23		
	25.00	100.00	290.68	122.65	-313.33		
PAY OUT TIME IN YEARS		12.86					
ROR % W/O FIN		18.70					
PROFITABILITY RATIOS W/O FIN	# PCT						
(PVNCF+PVCAFC)	0.00	4.01					
	5.00	3.01					
PVCAFC	10.00	2.17					
	15.00	1.45					
	20.00	0.85					
	25.00	0.37					
MAX CASH EXPOSURE MM\$/S CURRENT		-480.38					
W/O FIN							

PRODUCING CO CASHFLOW CALCULATION TABLE BY YEAR

STAND ALONE ANALYSIS

WEST SAK	FIELD PS #1 GROSS WELLHEAD PRICE	PROD PIPE PR VOLUME HMB/Y	GROSS INCOME HMB'S	CAPITAL COSTS HMB'S	OPER COSTS HMB'S	NET PNTS TO AR STATE GOVT HMB'S	NET PNTS TO US FED GOVT HMB'S	NET PNTS TO FINAN COMMUN HMB'S	CO NET CASHFLOW HMB'S	NET PNTS TO AR STATE GOVT HMB'S	NET PNTS TO US FED GOVT HMB'S	CO NET CASHFLOW HMB'S
RELATIVE YEAR	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
1991	0.00	14.20	0.00	52.25	0.00	0.73	0.00	0.00	-52.98	0.73	0.00	-52.98
1992	2.19	14.24	31.19	21.95	68.42	4.60	0.00	0.00	-63.77	4.60	0.00	-63.77
1993	2.19	14.28	31.28	0.00	68.42	4.58	0.00	0.00	-41.72	4.58	0.00	-41.72
1994	2.19	14.32	31.36	0.00	72.06	4.56	0.00	0.00	-45.26	4.56	0.00	-45.26
1995	4.38	14.36	62.68	30.31	81.94	8.55	0.00	0.00	-57.92	8.55	0.00	-57.92
1996	4.38	14.39	63.03	0.00	81.94	8.53	0.00	0.00	-27.44	8.53	0.00	-27.44
1997	4.38	14.42	63.17	0.00	81.94	8.50	0.00	0.00	-27.27	8.50	0.00	-27.27
1998	9.13	14.45	131.97	52.25	102.15	17.11	0.00	0.00	-39.54	17.11	0.00	-39.54
1999	9.13	14.48	132.24	52.25	102.15	17.82	0.00	0.00	-39.97	17.82	0.00	-39.97
2000	18.25	14.51	264.87	99.28	140.71	34.39	0.00	0.00	-9.50	34.39	0.00	-9.50
2001	18.25	14.54	265.37	0.00	140.71	34.41	0.00	0.00	90.25	34.41	0.00	90.25
2002	27.38	14.57	398.85	88.83	177.56	53.20	0.00	0.00	79.26	53.20	0.00	79.26
2003	27.38	14.59	399.54	0.00	177.56	53.10	24.51	0.00	144.37	53.10	24.51	144.37
2004	36.50	14.62	533.50	114.95	218.72	72.41	53.16	0.00	74.26	72.41	53.16	74.26
2005	36.50	14.64	534.34	0.00	218.72	72.26	71.60	0.00	171.76	72.26	71.60	171.76
2006	54.75	14.66	802.72	203.78	304.94	120.19	81.67	0.00	92.15	120.19	81.67	92.15
2007	54.75	14.68	803.88	26.13	317.95	115.64	105.71	0.00	238.45	115.64	105.71	238.45
2008	54.75	14.70	804.99	88.83	340.14	105.22	93.20	0.00	177.61	105.22	93.20	177.61
2009	54.75	14.72	806.05	0.00	349.85	104.71	105.79	0.00	245.70	104.71	105.79	245.70
2010	51.10	14.74	753.26	0.00	343.17	97.48	95.72	0.00	216.88	97.48	95.72	216.88
2011	43.80	14.76	646.13	0.00	277.16	83.95	89.24	0.00	196.07	83.95	89.24	196.07
2012	34.68	14.78	512.42	0.00	245.94	66.34	62.88	0.00	137.25	66.34	62.88	137.25
2013	27.38	14.79	405.00	0.00	215.73	52.19	43.33	0.00	93.75	52.19	43.33	93.75
2014	21.90	14.81	324.28	0.00	164.91	41.83	38.30	0.00	79.24	41.83	38.30	79.24
2015	18.25	14.82	270.50	0.00	147.89	34.53	28.93	0.00	59.16	34.53	28.93	59.16
2016	14.60	14.84	216.61	0.00	108.88	27.51	26.75	0.00	53.46	27.51	26.75	53.46
2017	0.00	14.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	14.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	14.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	14.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	632.94	PV AMORT PRICE	9289.73	830.78	4549.56	1244.31	920.80	0.00	1744.28	1244.31	920.80	1744.28
NPV'S BEG YR 1	\$'S/BBL											
9 PCT												
0.00	632.94	14.68	9289.73	830.78	4549.56	1244.31	920.80	0.00	1744.28	1244.31	920.80	1744.28
5.00	280.61	14.65	4111.33	472.58	2143.14	553.19	370.07	0.00	572.35	553.19	370.07	572.35
10.00	136.47	14.62	1995.62	293.33	1138.80	269.69	158.64	0.00	135.16	269.69	158.64	135.16
15.00	72.36	14.59	1055.89	197.80	675.24	143.36	71.97	0.00	-32.49	143.36	71.97	-32.49
20.00	41.55	14.56	605.04	143.72	439.88	82.61	34.32	0.00	-95.50	82.61	34.32	-95.50
25.00	25.46	14.53	372.80	111.30	309.35	51.27	17.10	0.00	-116.22	51.27	17.10	-116.22

ROR % W/ FIN 13.58

ROR % W/O FIN 13.58

PROFITABILITY RATIOS

	(NCF+CAPC)	(NCF+CAPC)
	---	---
	CAPC	CAPC
	W/ FIN	W/O FIN
9 PCT		
0.00	3.10	3.10
5.00	2.21	2.21
10.00	1.46	1.46
15.00	0.84	0.84
20.00	0.34	0.34
25.00	-0.04	-0.04

EQUIVALENT AMORTIZED ECONOMIC RENT CALCULATION TABLE BY YEAR STAND ALONE ANALYSIS

WEST SAK	FIELD PS #1 GROSS WELLHEAD				AK STATE GOVT REVS		US FED GOVT REVS		CO NET
	PRICE	GROSS	CAPITAL	OPER	ECONOMIC				
	PRODN	PIPE PR	INCOME	COSTS	COSTS	RENT	W/O FIN	W/O FIN	CASHFLOW
RELATIVE	VOLUME	\$'S/DBL	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S	MM\$'S
YEAR	MMB/Y	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT
1991	0.00	14.20	0.00	52.25	0.00	-52.25	0.73	0.00	-52.98
1992	2.19	14.24	31.19	21.95	68.42	-59.17	4.60	0.00	-63.77
1993	2.19	14.28	31.28	0.00	68.42	-37.14	4.58	0.00	-41.72
1994	2.19	14.32	31.36	0.00	72.06	-40.70	4.56	0.00	-45.26
1995	4.38	14.36	62.88	30.31	81.94	-49.37	8.55	0.00	-57.92
1996	4.38	14.39	63.03	0.00	81.94	-18.91	8.53	0.00	-27.44
1997	4.38	14.42	63.17	0.00	81.94	-18.77	8.50	0.00	-27.27
1998	9.13	14.45	131.97	52.25	102.15	-22.43	17.11	0.00	-39.54
1999	9.13	14.48	132.24	52.25	102.15	-22.16	17.82	0.00	-39.97
2000	18.25	14.51	264.87	99.28	140.71	24.88	34.39	0.00	-9.50
2001	18.25	14.54	265.37	0.00	140.71	124.66	34.41	0.00	90.25
2002	27.38	14.57	398.85	88.83	177.56	132.46	53.20	0.00	79.26
2003	27.38	14.59	399.54	0.00	177.56	221.98	53.10	24.51	144.37
2004	36.50	14.62	533.50	114.95	218.72	199.83	72.41	53.16	74.26
2005	36.50	14.64	534.34	0.00	218.72	315.63	72.26	71.60	171.76
2006	54.75	14.66	802.72	203.78	304.94	294.01	120.19	81.67	92.15
2007	54.75	14.68	803.88	26.13	317.95	459.80	115.64	105.71	238.45
2008	54.75	14.70	804.99	88.83	340.14	376.03	105.22	93.20	177.61
2009	54.75	14.72	806.05	0.00	349.85	456.20	104.71	105.79	245.70
2010	51.10	14.74	753.26	0.00	343.17	410.08	97.48	95.72	216.88
2011	43.80	14.76	646.43	0.00	277.16	369.27	83.95	89.24	196.07
2012	34.68	14.78	512.42	0.00	245.94	266.48	66.34	62.88	137.25
2013	27.38	14.79	405.00	0.00	215.73	189.27	52.19	43.33	93.75
2014	21.90	14.81	324.28	0.00	164.91	159.37	41.83	38.30	79.24
2015	18.25	14.82	270.50	0.00	147.89	122.62	34.53	28.93	59.16
2016	14.60	14.84	216.61	0.00	108.88	107.73	27.51	26.75	53.46
2017	0.00	14.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	14.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	14.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	14.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	632.94	PV AMORT PRICE	9289.73	830.78	4549.56	3909.39	1244.31	920.80	1744.28
NPV'S REG YR 1		\$'S/DBL							
0 PCT									
0.00	632.94	14.68	9289.73	830.78	4549.56	3909.39	1244.31	920.80	1744.28
5.00	280.61	14.65	4111.33	472.58	2143.14	1495.61	553.19	370.07	572.35
10.00	136.47	14.62	1995.62	293.33	1138.80	563.49	269.69	158.64	135.16
15.00	72.36	14.59	1055.89	197.80	675.24	182.85	143.36	71.97	-32.49
20.00	41.55	14.56	605.04	143.72	439.88	21.44	82.61	34.32	-95.50
25.00	25.66	14.53	372.80	111.30	309.35	-47.85	51.27	17.10	-116.22

	FIELD PS #1 GROSS WELLHEAD PRICE PIPE PR \$/S/DBL CONSTANT	CAPITAL COSTS MM\$/S CONSTANT	OPER COSTS MM\$/S CONSTANT	ECONOMIC RENT MM\$/S CONSTANT	STATE GOVT REVS W/O FIN MM\$/S CONSTANT	FED GOVT REVS W/O FIN MM\$/S CONSTANT	CO NET CASHFLOW W/O FIN MM\$/S CONSTANT
PER BBL PV'S							
0 PCT							
0.00	14.68	1.31	7.19	6.18	1.97	1.45	2.76
5.00	14.65	1.68	7.64	5.33	1.97	1.32	2.04
10.00	14.62	2.15	8.34	4.13	1.98	1.16	0.99
15.00	14.59	2.73	9.33	2.53	1.98	0.99	-0.45
20.00	14.56	3.46	10.59	0.52	1.99	0.83	-2.30
25.00	14.53	4.34	12.06	-1.86	2.00	0.67	-4.53

PERCENTAGE DIVISION OF PV ECON RENT	-----	0 PCT					
					0.00	100.00	11.83
					5.00	100.00	36.99
					10.00	100.00	47.86
					15.00	100.00	78.41
					20.00	100.00	385.34
					25.00	100.00	-107.14
							-35.75
							242.88

PAY OUT TIME IN YEARS	-----	14.10					
ROR % W/O FIN	-----	13.58					
PROFITABILITY RATIOS W/O FIN	-----	0 PCT					
(PVNCF/PVCAFC)		0.00	3.10				
-----		5.00	2.21				
PVCAFC		10.00	1.46				
		15.00	0.84				
		20.00	0.34				
		25.00	-0.04				

MAX CASH EXPOSURE MM\$/S CONSTANT	---	-405.37					
W/O FIN							

2
Bettye,

Consultants to the International Tax Comparison Group. They are here for a work session with the Group on their preliminary draft report.

Peter Gaffney --He is a Senior partner with the firm of Gaffney, Cline and Associates. He is currently based in London.

Dr. Homa Motamen, economic consultant. She is also based in London.

Professor Kemp --He is with Aberdeen University, Department of Economics and is from Aberdeen Scotland.

Jerry Schulz

INTERNATIONAL TAX COMPARISON GROUP

SUNDAY, MARCH 18--Commissioner Malone, Jim Rhode dinner (Jim)

MONDAY, MARCH 19

9:00-11:00---Part One...Presentation by consultants to ITC
Group...Speaker's Chambers (Billy)

11:00-12:00 House and Senate floor sessions (Jerry)

LUNCH---OPEN

1:30-3:30---Part Two...Presentation by consultants to ITC
Group...Speaker's Chambers (Nancy)

~~3:30-5:30---Presentation to 'Other' Administration officials...Governor's
Conference Room (Jim)~~

7:00---DINNER...Hosted by Sen. Fahrenkamp--Summit (Nancy)
Guests: Nine committee members; Consultants; B. Wade and John
Roots of Arco; Bob Van Hook and Jim Palmer of BP; Dave Parrish and Ken
Rather of Exxon (Billy)

TUESDAY, MARCH 20

 8:30-10:00---Presentation to House and Senate Resources and House
Finance Committees...location to be announced (Tally)

10:30-12

11:00-12:00---OPEN

12:00-1:30---LUNCH...Brown Bag lunch for staffers and legislators in
Speaker's Chambers...general Q and A (Billy)

1:30-5:00---Meeting with Oil Industry staff in Gastineau Suite, Baranof
Hotel (Jim)

4:30-7 PM
6:30---DINNER...OPEN

WEDNESDAY, MARCH 21

 8:30-9:30...Presentation to Senate Finance Committee (Tally)

9:30-12:00---OPEN

10 session
~~11:00-12:00---OFFICE MEETING~~
12:00-1:30---LUNCH...(tentative) Governor's Mansion...Governor, Mary
Halloran and Consultants only (Jim)

1:30-5:00---OPEN

1:30-3:30 - Sen Res.

Alaska State Legislature

Senate Resources Committee

Senator Bettye Fahrenkamp, Chairman
Senator Jay Kerttula, Vice Chairman
Senator Dick Eliason
Senator Steve Frank
Senator Rick Halford
Senator Arliss Sturgulewski
Senator Fred Zharoff



P.O. Box V
Juneau, Alaska 99811
(907) 465-4907

To: All Senate and House Members

From: Senator Bettye Fahrenkamp
Chair, International Tax Comparison Group *Bettye F*

Re: Report by International Tax Consultants

Date: March 9, 1990

The International Tax Comparison Group, comprised of three senate members, three house members, and three administration members, has met throughout the interim in order to develop economic models to compare Alaska's tax policy to that of other countries. Three international tax consultants have been under contract to provide advice and technical analysis to the group. The consultants were in Juneau in January to meet with the group and will be here again March 19 - 21.

On Tuesday, March 20, from 8:30 a.m. to 10:00 a.m., the consultants will present a progress report to the Joint House and Senate Resources Committees and House Finance Committee. The meeting will be held in the House Finance Committee Room.

On Wednesday, March 21, from 8:30 a.m. to 9:30 a.m., the consultants will present a progress report to the Senate Finance Committee, to be held in the Senate Finance Committee Room.

I welcome your participation.

Nancy

This is the SIXTH - and hopefully last -
draft of the agenda. Can you get
it OK'd by Sen. Johnson by close
of biz today so I can get the
letters out tonight.

My,
Billy

Alaska State Legislature

Senate Resources Committee

Senator Bettye Fahrenkamp, Chairman
Senator Jay Kerttula, Vice Chairman
Senator Dick Eliason
Senator Steve Frank
Senator Rick Halford
Senator Arliss Sturgulewski
Senator Fred Zharoff



P.O. Box V
Juneau, Alaska 99811
(907) 465-4907

To: Senator Tim Kelly
Senate President

From: Senator Bettye Fahrenkamp, Chairman
International Tax Comparison Group

Date: February 27, 1990

Re: Request for authorization to cover dinner expenses

OK Kelly 3/12/90

Three international oil consultants retained by the International Tax Comparison Group to provide analysis and a report to the group will be in Juneau on March 19 - 21. They will be presenting their final report to the legislature before a joint House and Senate Finance and Resources Committee meeting on Tuesday, March 20.

I would like to host a dinner for the consultants for group members and oil industry representatives at the Summit Inn restaurant. The estimated cost of the dinner is \$700 for 20 attendees. Please accept this as a request for authorization for dinner expenses on March 19.

I have made an effort to be certain that oil industry representatives have an opportunity to meet with the consultants and believe this would afford members, consultants and oil industry representatives an informal setting to foster improved dialogue between these groups.

miles...2/26...THIRD draft agenda for consultants

for
2389

INTERNATIONAL TAX COMPARISON GROUP

SUNDAY, MARCH 18 (Comm. Malone. Jim Rhode informal dinner)

MONDAY, MARCH 19

9:00-11:00---Part One...Presentation by consultants to ITC Group...Speaker's Chambers (Billy)

11:00-12:00 House and Senate floor sessions (Jerry, Nancy.)

LUNCH---(tentative) With Governor, at Mansion (Jim Rhode.)

1:30-3:30---Part Two...Presentation by consultants to ITC Group...Speaker's Chambers (Nancy)

3:30-5:30---Presentaion to 'Other' Administration officials...Governor's Conference Room (Jim Rhode.)

6:30---DINNER Hosted by Sen. Fahrenkamp--^{Summit}Baranof (Nancy)
Guests: Nine committee members, Consultants, B. Wade and John Roots of Arco; Julian Darley and Jim Palmer of BP; Dave Parrish and Ken Rather of Exxon (Tally contact.)(Billy draft invitation to Tally.)

-16- summit

TUESDAY, MARCH 20

8:30-10:00---Presentation to House and Senate Finance and Resources Committees in House Finance (Senate Finance?)(Tally and Nancy.)

11:00-12:00---OPEN

12:00-1:30---LUNCH...Brown Bag lunch for staffers and legislators in Speaker's Chambers...general Q and A (Billy)

1:30-3:00---~~(Press Conference)~~ Speaker's Chambers ~~(Billy)~~

Industry oil

3:00-5:00---OPEN

6:30---DINNER...Commissioner Malone to host Administration dinner at Baranof .(Jim Rhode to handle.)

WEDNESDAY, MARCH 21

9:00-12:00--Meeting with Oil Industry staff

12:00-1:30--LUNCH...Open

1:30--AFTERNOON OPEN

draft letter by Cotten, Fahrenkamp to oil industry dinner guests...Darley,
Palmer of BP; Parrish, Rather of Exxon; Wade and Roots of Arco

Dear _____:

On behalf of the International Tax Comparison Group, we would like you to join
the Group for dinner at the Baranof Hotel on Monday, March 19, 1990, at 6:30
p.m. at the Baranof Hotel.

The purpose of the dinner will be to share opinions with our consultants on
the tax comparison work to date.

We hope you will be able to join us.

Sincerely yours,

Sam Cotten, Representative
Co-Chair, ITC Group

Bettye Fahrenkamp, Senator
Co-Chair, ITC Group

miles...3/5...FOURTH draft agenda for consultants

INTERNATIONAL TAX COMPARISON GROUP

SUNDAY, MARCH 18--Commissioner Malone, Jim Rhode dinner (Jim)

MONDAY, MARCH 19

9:00-11:00---Part One...Presentation by consultants to ITC Group...Speaker's Chambers (Billy)

11:00-12:00 House and Senate floor sessions (Jerry)

LUNCH---OPEN

1:30-3:30---Part Two...Presentation by consultants to ITC Group...Speaker's Chambers (Nancy)

3:30-5:30---Presentaion to 'Other' Administration officials...Governor's Conference Room (~~Jim~~) *Steve Cole*

7:00---DINNER...Hosted by Sen. Fahrenkamp--Summit (Nancy)

Guests: Nine committee members; Consultants; B. Wade and John Roots of Arco; Julian Darley and Jim Palmer of BP; Dave Parrish and Ken Rather of Exxon (Tally gets list to Billy. Billy prepares letters for Rep. Cotten and Sen. Fahrenkamp signatures)

TUESDAY, MARCH 20

H-7 in *H/Sen Res + H/7 in*
8:30-10:00---Presentation to House and Senate Finance and Resources Committees in Senate Finance (Tally)

11:00-12:00---OPEN

12:00-1:30---LUNCH...Brown Bag lunch for staffers and legislators in Speaker's Chambers...general Q and A (Billy)

1:30-5:00---Meeting with Oil Industry staff in Speaker's Chambers (Billy)

6:30---DINNER...OPEN

WEDNESDAY, MARCH 21

9-10
9:00-12:00---OPEN

mon *S/7 in*
12:00-1:30---LUNCH...(tentative) Governor's Mansion, for Mary Halloran and Consultants only (Jim)

1:30-5:00---OPEN



Official Business

Alaska State Legislature

P.O. Box V
State Capitol
Juneau, Alaska 99811

March 7, 1990

Julian Darley, President
BP Exploration (Alaska), Inc.
PO Box 196612
Anchorage, AK 99519-6612

Dear Mr. Darley:

On behalf of the International Tax Comparison Group, we would like you to join the Group for dinner at The Summit on Monday, March 19, 1990, at 7:00 p.m.

The purpose of the dinner will be to share opinions with our consultants on the tax comparison work to date.

On Tuesday, March 20, 1990, members of your staff are invited to attend a work session from 1:30 p.m. to 5:00 p.m. with the consultants. This will be held in the Gastineau Suite of the Baranof Hotel.

We hope you will be able to join us.

Sincerely yours,

Handwritten signature of Sam Cotten.

Representative Sam Cotten
Co-Chair, ITC Group

Handwritten signature of Bettye Fahrenkamp.

Senator Bettye Fahrenkamp
Co-Chair, ITC Group

SC:BF:jss

Attachment: Agenda

cc: Jim Palmer (w/attachment)
BP Exploration (Alaska), Inc.

Bob Van Hook (w/attachment)
BP Exploration (Alaska), Inc.



Official Business

Alaska State Legislature

P.O. Box V
State Capitol
Juneau, Alaska 99811

March 7, 1990

W. E. Wade, President
ARCO Alaska, Inc.
PO Box 100360
Anchorage, AK 99510

Dear Mr. Wade:

On behalf of the International Tax Comparison Group, we would like you to join the Group for dinner at The Summit on Monday, March 19, 1990, at 7:00 p.m.

The purpose of the dinner will be to share opinions with our consultants on the tax comparison work to date.

On Tuesday, March 20, 1990, members of your staff are invited to attend a work session from 1:30 p.m. to 5:00 p.m. with the consultants. This will be held in the Gastineau Suite of the Baranof Hotel.

We hope you will be able to join us.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Sam Cotten".

Representative Sam Cotten
Co-Chair, ITC Group

A handwritten signature in cursive script, appearing to read "Bettye Fahrenkamp".

Senator Bettye Fahrenkamp
Co-Chair, ITC Group

SC:BF:jss

Attachment: Agenda

cc: John Roots, Vice President (w/attachment)
Government Affairs
ARCO Alaska, Inc.
PO Box 100360
Anchorage, AK 99510



Official Business

Alaska State Legislature

P.O. Box V
State Capitol
Juneau, Alaska 99811

March 7, 1990

C. T. Theriot
Alaska Interest Manager
EXXON Company, U.S.A.
PO Box 2180
Houston, TX 77252

Dear Mr. Theriot:

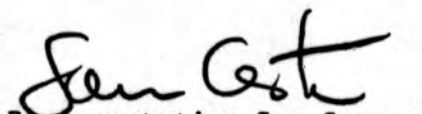
On behalf of the International Tax Comparison Group, we would like you to join the Group for dinner at The Summit on Monday, March 19, 1990, at 7:00 p.m.

The purpose of the dinner will be to share opinions with our consultants on the tax comparison work to date.

On Tuesday, March 20, 1990, members of your staff are invited to attend a work session from 1:30 p.m. to 5:00 p.m. with the consultants. This will be held in the Gastineau Suite of the Baranof Hotel.

We hope you will be able to join us.

Sincerely yours,


Representative Sam Cotten
Co-Chair, ITC Group


Senator Bettye Fahrenkamp
Co-Chair, ITC Group

SC:BF:jss

Attachment: Agenda

cc: Dave Parrish (w/attachment)
Tom Cirigliano (w/attachment)
EXXON Company, U.S.A.
PO Box 196601
Anchorage, AK 99519-6601

INTERNATIONAL TAX COMPARISON GROUP

SUNDAY, MARCH 18--Commissioner Malone, Jim Rhode dinner (Jim)

MONDAY, MARCH 19

9:00-11:00---Part One...Work session between consultants and ITC Group...Speaker's Chambers (Billy)

11:00-12:00 House and Senate floor sessions (Jerry)

12:00-1:30---LUNCH...(tentative) Governor's House...Governor and Administration officials, consultants only (Jim)

1:30-3:30---Part Two...Continuation of work session between consultants and ITC Group...Speaker's Chambers (Billy)

3:30-5:30---Meeting with other Administration officials...Governor's Conference Room (Steve Cole)

7:00---DINNER...Hosted by Sen. Fahrenkamp--Summit (Nancy)

Guests: Nine committee members; Consultants; B. Wade and John Roots of Arco; Bob Van Hook and Jim Palmer of BP; Dave Parrish and Ken Rather of Exxon (Billy)

TUESDAY, MARCH 20

8:30-10:00---Progress report to House and Senate Resources and House Finance Committees...House Finance Committee Room (Tally)

11:00-12:00---OPEN

12:00-1:30---LUNCH...Brown Bag lunch for staffers and legislators in Speaker's Chambers...general Q and A (Billy)

1:30-5:00---Work session with Oil Industry staff and consultants in Gastineau Suite, Baranof Hotel (Tally)

6:30---DINNER...OPEN

WEDNESDAY, MARCH 21

9:00-10:00...Progress report to Senate Finance Committee (Tally)

10:00-12:00---OPEN

12:00-1:30---LUNCH...OPEN

1:30-5:00---OPEN

miles 2/26

INTERNATIONAL TAX COMPARISON GROUP...first draft consultant agenda

SUNDAY, MARCH 18 (arrival time to come)

MONDAY, MARCH 19

9:00-~~10:00~~¹¹---Coffee reception--ITCG Group--Speaker's Chambers(Billy)

10:00-12:00 House and Senate floor sessions (Jerry)

LUNCH---OPEN

1:30-3:30---Meet with ITCG--Butrovich Room(Nancy)(ITCG Committee) *closed. Speakers*
only or open?)

3:30-5:30---OPEN Administration - Gov. ofc

7P ~~6:30~~---DINNER Hosted by Speaker--~~Baranof~~ (Billy)
B. Wade and John Roots of Arco; Julian Darley and Jim Palmer of
BP; Dave Parrish and new person of Exxon(Tally contact) — 3

20-

6+3 = 9
6/15

Reithen
(- Ken Ryther
- Paul Sullivan - tax counsel
- Dave Parrish

TUESDAY, MARCH 20

9:00-11:00---Presentation to Joint Finance Committees (Tally)

11:00-12:00---OPEN H/maj/caucus

12:00-1:30---LUNCH...Brown Bag lunch for staffers and legislators in
Speaker's Chambers...general Q and A (Billy)

1:30-3:00---Press Conference...Speaker's Chambers (Billy)

3:00-5:00---Presentation to Joint Resources...House Resources (Nancy)

6:30---DINNER...Commissioners Malone and Gorsuch to host
Administration dinner at Baranof (Billy/Jim Rhode or Hugh
Malone...Tally/Lennie Gorsuch)(Tally to coordinate)

WEDNESDAY, MARCH 21

9:00-12:00--Meeting with Oil Industry staff

12:00-1:30--LUNCH...Open

1:30--AFTERNOON OPEN

*do memo - other committees
- have presented
time avail.*

h/s

*Sen
Jim.
9-11*

*Comm
Revenue*

Billy

- Bethze says OK on everything.
- I have ~~contacted~~ The authoringtion for the hosted dinner + reservations at the Baranof for 16.

3 consultants

6 Senate/House Members

6 Oil participants

1 Speaker Colter

16

She thought some wanted 11/7 in
to be sure we'd have a full room.

9am

Mon, 19th

- 10A

~~9:00A~~ 9:00A 8am's of coffee

group - 6-

→ all legislators

Comm

Lennie

Denny

Floor session

Jerry Schile

10-12

lunch open

1:30P - 3:30

Leg. only

✓ room x time

* private *

-(Int'l TAX group)

3:30 - 5 open

mon nite:

March 20

Dinner + Made, Julian Daily + Exxon

Talley contact
Bill host

Tue.

3-5
Jt. Resi.
H/res

honey +

sales 9am - 11:30

Jt. Feir

→ Bro. Bag 12 noon
followed bag

4:30pm

Press conf.

- 1:30pm -

dinner - Hugh + Lennie host

Talley - Jennie
Mill - Jim Rhode
or Hugh

Wed.

10:30 - 12: consultants

oil + gas underat. Staff

lunch open aft open

Administration

Jennie + Hugh

leave open.

maybe
dinner
Tue eve.

STATE OF ALASKA

DEPARTMENT OF REVENUE

OIL AND GAS AUDIT DIVISION

STEVE COWPER, GOVERNOR

550 WEST 7TH AVENUE, SUITE 560
ANCHORAGE, ALASKA 99501
PHONE: (907) 277-5627
PHONE: (907) 276-1363

February 9, 1990

A.G. Kemp/David Rose
Aberdeen University Petroleum
and Economic Consultants
Dept. of Economics
Edward Wright Building, Dunbar St.
Aberdeen, AB9 2TY, Scotland, UK

FEB 13 1990

Dear Alex,

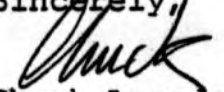
A representative from Exxon has asked some questions concerning the modelling effort. I was unable to answer the following questions.

1. Are agreements to provide crude oil or products to local markets at below market price included in the Indonesia example?
2. Are the production agreements with Indonesia on a cost of work or production sharing basis?
3. Does the Australian example use the excise tax or the resource rent tax?
4. What price of oil is used?

We continue to work with the big three Prudhoe Bay producers (ARCO, EXXON, and BP) on an informal basis examining the cost/production numbers we have provided you with. So far, as might be expected, most questions concern the cost assumptions being too low.

Please let me know what the status of your work is and in particular if there is anything that we have sent to you which needs clarification.

Sincerely,


Chuck Logsdon

cc: Peter Gaffney
Homa Motamen
Hugh Malone
Betty Fahrenkamp
Sam Cotten

FEB 23 1990

February 21, 1990

A.G. Kemp/David Rose
Aberdeen University Petroleum
and Economic Consultants
Dept. of Economics
Edward Wright Building, Dunbar St.
Aberdeen, AB9 2TY, Scotland, UK

Dear Alex,

I have been attempting to put together a better series on exploration and acquisition costs as incurred for the Alaska fields of interest. I am including a copy of the best guess we have. Essentially it is an attempt to illustrate the timing of the lump sum numbers I gave you last week.

What we will do is to inflate these numbers using the GNP deflator series to 1990 \$ for the developable fields and bring the Prudhoe numbers up to 1975 for cash flow purposes.

I have spoken to Peter and he spoke with me about using 12.5% for a discount rate. He also wants to have February 26 as the last date for data changes. John Larson is laboring mightily to complete the basic runs by Friday.

I have also included the new expanded version of the Hurl State analog.

I told Peter that I would like to phone you Monday (Feb 26) so we can discuss progress, methodology, etc. I would try to call sometime shortly after 8:00 am Alaska time (just in case the roads are bad and I can't make it to work at exactly 8:00)

Sincerely,

Chuck
Chuck Logsdon

cc: Peter Gaffney
Homa Motamen
Hugh Malone
Betty Fahrenkamp
Sam Cotten

**EXPLORATION COSTS
FOR
THE INTERNATIONAL TAX COMPARISON STUDY
(MILLIONS OF DOLLARS)**

YEAR	PRUDHOE BAY		WEST SAK		NORTH STAR		NIJARUK	
	ACQUISITION AND SUCCESSFUL EFFORTS EXPLORATION HISTORIC COSTS	UNSUCCESSFUL EFFORTS AND EXPLORATION DELINATION HISTORIC COSTS	ACQUISITION AND SUCCESSFUL EFFORTS EXPLORATION HISTORIC COSTS	UNSUCCESSFUL EFFORTS AND EXPLORATION DELINATION HISTORIC COSTS	ACQUISITION AND SUCCESSFUL EFFORTS EXPLORATION HISTORIC COSTS	UNSUCCESSFUL EFFORTS AND EXPLORATION DELINATION HISTORIC COSTS	ACQUISITION AND SUCCESSFUL EFFORTS EXPLORATION HISTORIC COSTS	UNSUCCESSFUL EFFORTS AND EXPLORATION DELINATION HISTORIC COSTS
1965	5	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	4	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0
1969	86	25	0	0	0	0	0	0
1970	0	25	0	0	0	0	0	0
1971	0	25	0	0	0	0	0	0
1972	0	25	0	0	0	0	0	0
1973	0	25	0	0	0	0	0	0
1974	0	25	0	0	0	0	0	0
1975	0	25	0	0	0	0	0	5
1976	0	25	0	0	0	0	0	20
1977	0	25	0	0	0	0	0	5
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	5	0	27	5
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	50	0	0	0
1984	0	0	33	0	45	0	20	0
1985	0	0	33	0	40	0	5	0
1986	0	0	33	0	40	0	5	0
1987	0	0	33	0	40	0	3	0
1988	0	0	33	0	40	0	3	0
1989	0	0	35	0	40	0	2	0
SUM THRU 89	95	225	200	0	300	0	65	35
SUM SUCCESS & UNSUCCESS		320		200		300		100

1) Acquisition and successful efforts exploration costs have no immediate tax benefits, they must be carried at historic cost basis and amortized on a units of production basis once production starts.

2) Unsuccessful efforts exploration cost are written off at abandonment of the lease, their after tax cost is therefore a function of the marginal income tax rate of corporation which incurs them.

EXPLORATION COSTS
FOR
THE INTERNATIONAL TAX COMPARISON STUDY
(MILLIONS OF DOLLARS)

PRUDHOE BAY			WEST SAR		NORTH STAR		NIARUK				US MARGINAL FEDERAL CORPORATE INCOME TAX RATE		
AFTER TAX ACQUISITION UNSUCCESSFUL AND EFFORTS SUCCESSFUL EXPLORATION AND DELINATION 1975 \$'S COSTS			AFTER TAX ACQUISITION UNSUCCESSFUL AND EFFORTS SUCCESSFUL EXPLORATION AND DELINATION 1990 \$'S COSTS		AFTER TAX ACQUISITION UNSUCCESSFUL AND EFFORTS SUCCESSFUL EXPLORATION AND DELINATION 1990 \$'S COSTS		AFTER TAX ACQUISITION UNSUCCESSFUL AND EFFORTS SUCCESSFUL EXPLORATION AND DELINATION 1990 \$'S COSTS		AFTER TAX ACQUISITION UNSUCCESSFUL AND EFFORTS SUCCESSFUL EXPLORATION AND DELINATION 1990 \$'S COSTS		US GNP IMPLICIT PRICE DEFIATOR 1968 = 1.00		
YEAR	THRU 1974	THRU 1974	THRU 1974	THRU 1974	THRU 1974	THRU 1974	THRU 1974	THRU 1974	THRU 1974	THRU 1974	YEAR	1968 = 1.00	
1965	8.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1965	0.897	0.46
1966	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1966	0.928	0.46
1967	6.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1967	0.952	0.46
1968	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1968	1.000	0.46
1969	128.10	20.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1969	1.056	0.46
1970	0.00	19.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1970	1.114	0.46
1971	0.00	18.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1971	1.178	0.46
1972	0.00	17.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1972	1.233	0.46
1973	0.00	16.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1973	1.313	0.46
1974	0.00	14.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1974	1.432	0.46
1975	0.00	13.50	0.00	0.00	0.00	0.00	0.00	0.00	5.95	0.00	1975	1.573	0.46
1976	0.00	13.50	0.00	0.00	0.00	0.00	0.00	0.00	22.38	0.00	1976	1.674	0.46
1977	0.00	13.50	0.00	0.00	0.00	0.00	0.00	0.00	5.25	0.00	1977	1.785	0.46
1978	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1978	1.915	0.46
1979	0.00	0.00	0.00	0.00	0.00	8.32	0.00	44.92	4.49	0.00	1979	2.085	0.46
1980	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1980	2.273	0.46
1981	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1981	2.493	0.46
1982	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1982	2.653	0.46
1983	0.00	0.00	0.00	0.00	0.00	62.94	0.00	0.00	0.00	0.00	1983	2.756	0.46
1984	0.00	0.00	40.07	0.00	0.00	54.64	0.00	24.28	0.00	0.00	1984	2.857	0.46
1985	0.00	0.00	38.81	0.00	0.00	47.04	0.00	5.88	0.00	0.00	1985	2.950	0.46
1986	0.00	0.00	37.82	0.00	0.00	45.84	0.00	5.73	0.00	0.00	1986	3.027	0.34
1987	0.00	0.00	36.75	0.00	0.00	44.55	0.00	3.34	0.00	0.00	1987	3.115	0.34
1988	0.00	0.00	35.53	0.00	0.00	43.07	0.00	3.23	0.00	0.00	1988	3.222	0.34
1989	0.00	0.00	36.57	0.00	0.00	42.80	0.00	2.09	0.00	0.00	1989	3.320	0.34
1990	0.00	0.00	36.57	0.00	0.00	42.80	0.00	2.09	0.00	0.00	1990	3.469	0.34
SUM THRU 89			225.54	0.00	348.18	0.00	89.48	38.07					
SUM SUCCESS & UNSUCCESS				225.54		348.18		127.55					
SUM THRU 74			143.48	105.42									
SUM SUCCESS & UNSUCCESS													
THRU 74			248.91										
1975			262.41										
1976			13.50										
1977			13.50										
ADJUSTMENTS TO AFTER TAX CURRENT DOLLAR (DOD) NET CASH FLOW FOR EXPLORATION COSTS													

ADJUSTMENTS TO AFTER TAX CURRENT DOLLAR (DOD) NET CASH FLOW
FOR EXPLORATION COSTS

PRUDHOE BAY		WEST SAR		NORTH STAR		NIARUK	
1975	262.41	1990	225.54	1990	348.18	1990	127.55
1976	13.50						
1977	13.50						

20 FEB 90

PRUDHOE BAY INCREMENTAL CASE
EXPANDED HURL STATE ANALOG
(1990 MONEY)

YEAR	(MMBO/YR) INCREMENTAL PRODUCTION	(\$MM) TOTAL INCREMENTAL CAPCOST	(\$MM) INCR FACILITY CAPCOST	(\$MM) INCR WELL CAPCOST	#PROD WELLS	TOTAL WELLS	(\$MM) OPCOST
1990		1092.00	1000.00	92.00	31	46	
1991	58.76	688.00	596.00	92.00	61	92	57.50
1992	75.00				61	92	75.59
1993	66.00				61	92	68.51
1994	58.08				61	92	62.10
1995	51.11				61	92	56.29
1996	44.98				61	92	51.02
1997	39.58				61	92	46.24
1998	34.83				61	92	41.92
1999	30.65				61	92	37.99
2000	26.97				61	92	34.44
2001	4.04				61	92	5.31
2002							
2003							
2004							
2005							
2006							
TOTAL	490.00	1780.00	1596.00	184.00			

ASSUMPTIONS

- 1.) INCREMENTAL RESERVES = 10% OF REMAINING PBU RESERVES, I.E.
 $(10\%) \times (4.9880) = 490 \text{ MMBO}$.
- 2.) INCREMENTAL DEVELOPMENT COSTS = 10% OF ORIGINAL REAL PBU DEV COSTS,
I.E. $(10\%) \times (17.836) = \1.78 BILLION
- 3.) TOTAL OPCOSTS INCREASE 3%/YR OVER LIFE OF INCREMENTAL PROJECT.
ASSUME INITIAL OPCOSTS ARE \$0.95/BBL.
- 4.) WELL COSTS ARE \$2MM/WELL. THE BALANCE OF CAPCOSTS ARE ASSUMED TO
BE FACILITY ORIENTED.
- 5.) RECOVERY PER WELL IS ASSUMED TO BE 8 MMBO/WELL. WELL COUNT IS
DERIVED BY $(490 \text{ MMBO}) / (8 \text{ MMBO/WELL}) = 61 \text{ PRODUCING WELLS}$. TOTAL
WELLS ASSUMED TO BE 1.5 TIMES PRODUCING WELLS (USE 92 WELLS).
- 6.) INITIAL WELL RATE IS 3500 BOPD. DECLINE RATE IS 12%/YR.
- 7.) DRILLING SCHEDULE IS AGGRESSIVE: 20 DAYS PER WELL, 5 RIGS WORKING
FULL TIME TO ACHIEVE PEAK PRODUCTION IN SECOND YEAR (1991).
RIGS STARTUP 7/1/90.

miles2/26...second draft agenda for consultants

INTERNATIONAL TAX COMPARISON GROUP

SUNDAY, MARCH 18 (arrival time to come)

MONDAY, MARCH 19

ok 9:00-11:00---Part One...Presentation by consultants to ITC Group...Speaker's Chambers (Billy)

11:00-12:00 House and Senate floor sessions (Jerry) ok ~~or Nancy~~

LUNCH---OPEN (Tally-working w/ Admin)

ok 1:30-3:30---Part Two...Presentation by consultants to ITC Group...Speaker's Chambers (Nancy)

3:30-5:30---Presentaion to 'Other' Administration officials...Governor's Conference Room (Tally) ~~Chuck~~ Denby + Mary Halloran

→ OK 6:30---DINNER Hosted by Sen. Fahrenkamp--Baranof (Billy) Nancy - setup

Guests: Nine committee members, Consultants, B. Wade and John Roots of Arco; Julian Darley and ~~Jim Palmer~~ of BP; Dave Parrish and Ken Rather of Exxon (Tally contact.) ~~Bob Van Hook~~

bill
delivery order #

12th 3+6 9+6 = 15
+ speaker 1
16

(20)

TUESDAY, MARCH 20

8:30-10:00---Presentation to House and Senate Finance and Resources Committees in ~~House Finance~~ (Senate Finance) (Tally and Nancy) Tally

11:00-12:00---OPEN

12:00-1:30---LUNCH...Brown Bag lunch for staffers and legislators in Speaker's Chambers...general Q and A (Billy)

1:30-3:00---Press Conference...Speaker's Chambers (Billy)

3:00-5:00---OPEN

6:30---DINNER...Commissioner ~~Gorsuch~~ Malone to host Administration dinner at Baranof (Tally/Lennie Gorsuch) (Tally to coordinate) (Jim Rhade) (Billy)

WEDNESDAY, MARCH 21

9:00-12:00--Meeting with Oil Industry staff Cartineau suite?

12:00-1:30--LUNCH...Open (Gov-sec checking) John Ringstad

→ 1:30--AFTERNOON OPEN

596-2600

Senate Finance

dinner at Baranof

catering - 16-90

533.72

Maurice 7 PM - 10 PM

House of
Cliff
Curt
Lyman
Carson
(Nancy)
Prefer

file int'l tax

Alaska State Legislature

Senate Resources Committee

Senator Bettye Fahrenkamp, Chairman
Senator Jay Kerttula, Vice Chairman
Senator Dick Eliason
Senator Steve Frank
Senator Rick Halford
Senator Arliss Sturgulewski
Senator Fred Zharoff



P.O. Box V
Juneau, Alaska 99811
(907) 465-4907

To: All Legislators

From: Senator Bettye Fahrenkamp *BF*
Chairman, International Tax Comparison Group

Re: International Tax Comparison Group meeting

Date: January 10, 1990

The International Tax Comparison Group will meet in the Senate Finance Room:

Friday, January 12, 1990, 1:30 p.m. to 4:30 p.m.

Saturday, January 13, 1990, 10:00 a.m. to 3:00 p.m.

Sunday, January 14, 1990, if additional time is needed.
(Announcement will be made on Saturday)

The purpose of this meeting is to allow three oil tax consultants to brief the group on their further progress of their analyses of the investment climate for the oil industry here compared to that in competing oil producing areas. The consultants' presentations will focus on advice, interpretation and discussions of alternate revenue sharing approaches taken in other petroleum provinces.

As you may know, the International Tax Comparison Group was established last summer by the Legislative Council and is a cooperative effort by the Legislature and the Cowper administration to review the State of Alaska's oil tax policy.

I urge you to attend.

Revenue
6 Mar 90

Nancy:

My files say that I sent you a copy of this letter earlier, but I want to be sure you've seen the marked part. As things stand, the idea would be to bring the consultants back the first week in April to explain the final report. We are not thinking of later because the forecast is due out the 9th, which changes the focus of the session, followed by the Easter Weekend, their last break prior to adjournment.

I assume Legislative Affairs can meet your requirements but, if not, let me know and I'll help in any way possible.

Sincerely,

Jim

March 19
75 feet, no
2350
not avail.

GAFFNEY, CLINE & ASSOCIATES LTD

Energy Advisers

principals: William B. Cline
Peter D. Gaffney

Registered London No. 1122740

Sent by fax 22/1/90

Bentley Hall
Blacknest, Alton
Hampshire GU34 4PU
Telephone: Bentley (0420) 23366
Cable: Techserv Alton Hants
Telex: 858185
Telecopier: (0420) 22357

PDG/bat/A458/1247

22 January, 1990

Mr James B Rhode
Special Assistant to the Commissioner
State of Alaska
Department of Revenue
P O Box S
Juneau
ALASKA 99811-0400

Dear Jim,

Attached please find the promised, very preliminary, draft Table of Contents. It would be the intention to make the Executive Summary a stand-alone document with a much reduced graphics and description section. There may be some additions to this list and certainly some deletions or modifications as we get a little bit further into the project. The intention however, insofar as is possible, would be to minimise the amount of description and optimise the graphic presentation material so as to make the document readable and hopefully understandable by the non technical/economics reader.

The intent would be to use exactly the same visual aids and tables for the presentation as used in the report so that one could be used to follow the other and also so that a shortened version could be given where necessary.

One practical aspect which comes to mind is that it will almost certainly be easier and more effective to present the material in 35 mm slides. Even if we use overheads it would still be very desirable to have a much larger screen than the one previously available, as it has been demonstrated in the past that it is far easier to get a message across to people unfamiliar with technical presentations if they can see it on a large screen where the descriptions are clear. I would therefore be grateful if you could check on the availability of a 10 to 12 feet wide screen. The width is more critical than the height, which should be 8 feet maximum; the screen would need to stand off the floor at a height of 2 to 3 feet ideally. The projector we use will also need to be able to fill that large screen. It should be possible to find a boxed version in Juneau or Anchorage, but if this is not possible then we should arrange to get one brought in. I consider this a critical aspect for the success of our presentation - to the extent possible where I am sure we can move screens and projectors from room to room, it would be extremely

Mr James B Rhode
State of Alaska

- 2 -

22 January, 1990

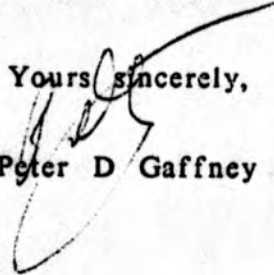
useful if we could set up a room where the majority of the committee and public participants have a reasonable chance to see what was going on. I wished to raise these points early so that there is plenty of time to arrange for the necessary equipment.

As far as the agenda is concerned, at this stage I would be especially interested in any comments you have regarding other key topic headings which might need to be included in favour of ones less important which might be deleted.

As indicated above I do not think we will be setting much of this in concrete in the very near future, but your early comments would naturally be much appreciated.

Regards,

Yours sincerely,


Peter D Gaffney

Encl

cc: Professor Alex Kemp
Dr H Motamen Scobie

STATE OF ALASKA
ROUTE SLIP

TO: Mail Station	Department <i>LEG.</i>	Division												
Attention <i>SEN. FAHRENKAMP</i> <i>- NANCY PETERSEN, AA.</i>														
<table><tr><td>☐ Approval</td><td>☐ Note & Return</td></tr><tr><td>☐ Signature</td><td>☐ Initial & Return</td></tr><tr><td>☐ Comment</td><td>☐ Return as Requested</td></tr><tr><td>☐ Contact Me</td><td>☐ Return for Approval</td></tr><tr><td>☐ Prepare Reply</td><td>☒ Necessary Action</td></tr><tr><td>☐ For Your File</td><td>☐ For Your Information</td></tr></table>			☐ Approval	☐ Note & Return	☐ Signature	☐ Initial & Return	☐ Comment	☐ Return as Requested	☐ Contact Me	☐ Return for Approval	☐ Prepare Reply	☒ Necessary Action	☐ For Your File	☐ For Your Information
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☐ Prepare Reply	☒ Necessary Action													
☐ For Your File	☐ For Your Information													
Remarks: <i>CAP. RM. 125</i>														
FROM: Mail Station <i>0400</i>	Department <i>REV.</i>	Division <i>TEL. 2350</i>												
By <i>Jim. Rhoads</i>		Date <i>6 Apr 90</i>												

Alaska State Legislature



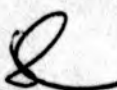
Speaker of the House of Representatives

Official Business

Pouch V
State Capitol
Juneau, Alaska 99811
(907) 465-3720

January 31, 1989

TO: Pam Stoops, Director
Administrative Services, LAA

FROM: Sam Cotten, Speaker 
House of Representatives

SUBJECT: Contract Amendment

Please amend the contracts for the consultants to the International Oil Tax Comparison Groups, Peter Gaffney, Professor Kemp and Homa Motamen in line with the attached letter from the Commissioner of Revenue, Hugh Malone. The contracts are being amended from an amount not to exceed \$20,000 each, to an amount not to exceed \$60,000 each. Since this makes a total of \$180,000 for the three contracts, it is important to note that, under no circumstances, is the total legislative share of the tax comparison consultant contracts to exceed \$120,000. The balance of the funds for these contracts will come from an RSA of \$60,000 from the Department of Revenue. Please initiate whatever action is required for the RSA.

If you have any questions concerning this matter, please contact Jerry Schilz in House Rules at 465-3824.

cc: Hugh Malone, Commissioner
Department of Revenue

Jim Rhode, Special Assistant
Department of Revenue

STATE OF ALASKA

DEPARTMENT OF REVENUE

OFFICE OF THE COMMISSIONER

STEVE COWPER, GOVERNOR

P.O. BOX 5
JUNEAU, ALASKA 99811-0400
PHONE: (907) 465-2300
TELEFAX: (907) 465-2389

January 25, 1990

rec'd 1/26/90

The Honorable Sam Cotten
Speaker of the House
P.O. Box V
Juneau, AK 99811

Dear Mr. Speaker:

You asked that I send you a letter about our discussions on completing the international oil tax comparison on time.

Essentially, two things have changed since we began the study. First, the economic section of the Oil and Gas Division of the department of revenue is not going to be able to carry out as much of this effort as originally expected. (This is the combined result of less time for the work due to the start-up time for selection of the consultants, etc., personnel changes and a maternity leave.) Therefore, we must rely on the consultants for the bulk of the work for the report. Secondly, we are not going to have to spend extra money on economic models and data inputs; our consultants have agreed to provide them for the countries in our comparisons. This frees up \$65,000 or a little more than half of the \$125,000 set aside for this report by the Legislative Council.

We now know that completing the report (statistical comparisons between Alaska and four other oil areas, a narrative, and a section contrasting a number of industry/government relationships in recent years) will cost a total of \$185,000. This will include the final review and revision of the report by the working group with the consultants on March 19 and 20. ^{60,000} \$60,000 of the cost has been committed from legislative funds, ~~\$65,000~~ will come from the balance of those funds, and the remaining \$60,000 will come from an RSA with the Department of Revenue.

The contracts with the consultants need to be amended so that fees and expenses in each case will "not exceed \$60,000." Dr. Kemp & Associates agree "to collaborate on a report comparing the government fiscal regimes in four oil areas with that in Alaska"; they will have prime responsibility for the DCF analysis and other statistics required. Gaffney, Cline agree "to collaborate on a report", etc.; they will have prime responsibility for the narrative on the comparisons. Dr. Homa Motamen agrees "to collaborate", etc.; she will have the prime responsibility for discussing the financial aspects of the comparisons and for preparing a section on industry and government interaction.

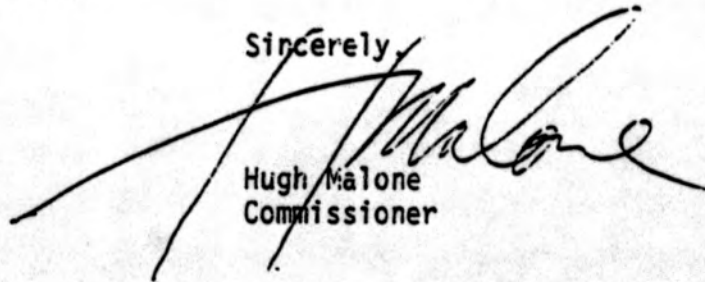
I believe that the day-to-day coordination of the project is best carried out by a single project coordinator in the Department of

The Honorable Sam Cotten
January 25, 1990
Page 2

Revenue. Chuck Logsdon can best accomplish this. Jim Rhode will monitor this work and I will see to it that all the members of the working group are kept informed.

The various deadlines for the report should be mutually agreed in writing, but not set in the contract.

Sincerely,

A handwritten signature in dark ink, appearing to read "Malone", with a long, sweeping horizontal stroke extending to the left.

Hugh Malone
Commissioner

HM:JBR:m11
9C-09

Alaska State Legislature

Senate Resources Committee

Senator Bettye Fahrenkamp, Chairman

Senator Jay Kerttula, Vice Chairman

Senator Dick Eliason

Senator Steve Frank

Senator Rick Halford

Senator Arliss Sturgulewski

Senator Fred Zharoff



P.O. Box V
Juneau, Alaska 99811
(907) 465-4907

To: All Senate and House Members

From: Senator Bettye Fahrenkamp *Bettye*
Chair, International Tax Comparison Group

Re: Report by International Tax Consultants

Date: March 15, 1990

The International Tax Comparison Group, comprised of three senate members, three house members, and three administration members, has met throughout the interim in order to develop economic models to compare Alaska's tax policy to that of other countries. Three international tax consultants have been under contract to provide advice and technical analysis to the group. The consultants were in Juneau in January to meet with the group and will be here again March 19 - 21.

On Tuesday, March 20, from 8:30 a.m. to 10:00 a.m., the consultants will present a progress report to the Joint House and Senate Resources Committees and House Finance Committee. The meeting will be held in the House Finance Committee Room.

On Wednesday, March 21, from 8:30 a.m. to 9:30 a.m., the consultants will present a progress report to the Senate Finance Committee, to be held in the Senate Finance Committee Room.

I welcome your participation.



Official Business

Alaska State Legislature

SENATE

P.O. Box V
State Capitol
Juneau, Alaska 99811

MEMORANDUM

TO: Senator John Binkley, Co-Chair
Senate Finance Committee

Senator Rick Uehling, Co-Chair
Senate Finance Committee

FROM: Senator Bettye Fahrenkamp, Chair *B. Fahrenkamp*
International Tax Comparison Group

Representative Sam Cotten
International Tax Comparison Group

DATE: March 6, 1990

RE: Scheduling Joint Finance and Resources Meeting

On Tuesday, March 20th from 8:30 a.m. to 10:00 a.m. the International Tax Comparison Group (ITCG) would like to have a joint Senate and House Finance and Resources Committees meeting. This time would allow the ITCG consultants an opportunity to present their draft preliminary report.

We would like this joint meeting held in Senate Finance. If there is a problem with scheduling this meeting and the room, please call Nancy Peterson of Senator Fahrenkamp's Office as soon as possible.

Thank you.

DP:tej

6-4797



NATIONAL CHECKING CO., ST. PAUL.

Inn @ Waterfront
 455 S. Franklin
 Juneau 99801

DATE	SERVER	TABLE NO.	PERSONS	CHECK NO.
3/19	M&F		17	468920
1	21.95 x 17			373.15
2	persons			
3	City tx			14.92
4	Bar			89.50
5	15% Grat			70.
6				
7				
8				
9				
10	FOOD TOTAL:			
11	TAX:			
	SUB TOTAL:			

BAR CHARGES FROM OTHER SIDE:

TOTAL: 547.57

GUEST RECEIPT

DATE	SERVER	TABLE NO.	PERSONS	CHECK NO.

Chuck Gogsdon -
re conclusions from inter
fax study - he doesn't
have those; talk to
Hugh Malone or Jim
Rhode

STATE OF ALASKA THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

P.O. BOX Y, STATE CAPITOL
JUNEAU, ALASKA 99811
907 465-3800

March 19, 1990

Senator Bettye Fahrenkamp
Project Director
Chair, International Oil Tax Comparison Group
P.O. Box V
Juneau, AK 99811

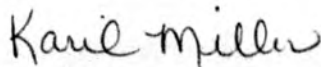
Dear Senator Fahrenkamp:

Enclosed for your records is a fully signed copy of the contract between Aberdeen University Research and Industrial Services, Ltd. and the Alaska Legislative Council.

Section 190 of the Legislative Procurement Procedures states that, "If a services or professional services contract is awarded by a Legislative Committee, the committee or the Procurement Officer shall provide a written evaluation of the services provided under the contract before final payment on the contract may be made.

We have included a Contract Evaluation Form for your convenience in complying with this requirement. This evaluation form should accompany the final approved billing for the contract services. Please sign as project director and forward the completed evaluation form for signature to Representative Mike Davis, procurement officer, prior to submitting the final billing to the Accounting Office for payment. If you prefer, a memo may be substituted for the evaluation form. The memo need only address the evaluation factors you consider pertinent to the contract.

Sincerely,



Karil Miller
Administrative Assistant

Enclosure

CONTRACTOR EVALUATION FORM

NAME OF CONTRACTOR: Aberdeen University Research & Industrial Services, Ltd(Amendment)

PURPOSE OF CONTRACT: To complete a report comparing the fiscal regimes in four
(Brief Description) oil areas with that of Alaska. The Consultant will also
provide economic models and data inputs for the countries
in the comparisons.

SERVICES PERFORMED FOR Alaska Legislative Council
(Committee Name)

CONTRACT PERFORMANCE

Yes

No

The Contractor:

Performed all the requested services.

Produced a satisfactory product.

Performed the services in a timely manner.

Met all the terms and conditions of the contract.

OTHER COMMENTS:

Senator Fahrenkamp
Project Director

Representative Mike Davis
Procurement Officer

International Oil Tax Comparison Group
Committee

Alaska Legislative Council
Committee

CONTRACT AMENDMENT

ALASKA LEGISLATIVE COUNCIL

AND

ABERDEEN UNIVERSITY RESEARCH AND INDUSTRIAL SERVICES, LTD.

DEPARTMENT OF ECONOMICS

UNIVERSITY OF ABERDEEN

EDWARD WRIGHT BUILDING

DUNBAR STREET

ABERDEEN, AB9 2TY, SCOTLAND, UK

AMENDED CONTRACT AMOUNT: \$60,000

The parties to this contract amendment, made and entered into this 19th day of March, 1990, are the Alaska Legislative Council ("Agency"), on behalf of the International Oil Tax Comparison Group (hereinafter referred to as the "Group"), and Aberdeen University Research and Industrial Services, Ltd. (hereinafter referred to as the "Consultant"). This document amends the December 29, 1989 professional services contract between the Consultant and the Alaska Legislative Council to advise and assist the Group in obtaining an economic model that will allow State policy makers to compare, each year, on a risk adjusted basis, the investment climate for the oil industry in Alaska with other competing oil areas.

1. IT IS AGREED THAT:

a. CLAUSE I, STATEMENT OF WORK, IS AMENDED BY ADDING THE FOLLOWING PARAGRAPHS:

- (9) To complete a report comparing the fiscal regimes in four oil areas with that of Alaska, in collaboration with Dr. Homa Motamen and Gaffney, Cline and Associates, Inc.;
- (10) The Consultant agrees to provide economic models and data inputs for the countries in the comparisons.

b. Paragraph (E) of CLAUSE IV, COMPENSATION AND METHOD OF PAYMENT, IS AMENDED TO READ AS FOLLOWS:

- (E) Total payments under this contract, including reimbursement for expenses, may not exceed Sixty Thousand and No/100 Dollars (\$60,000).

2. Execution of this amendment was authorized by a majority of the members of the Legislative Council on February 23, 1990. Execution of this amendment by the chair

of the Council constitutes the signed authorization required by Procurement Procedures sec. 150 (b); the committee members who authorized the amendment delegated their sec. 150 signature responsibilities to the chair of the Council on January 13, 1989.

3. Execution of this amendment by the Legislative Affairs Agency Executive Director or his designee hereby constitutes a certification that funds have been appropriated and encumbered for the amount of this amended contract.

IN WITNESS WHEREOF, the parties have executed this amendment to this contract on the dates indicated below.

CONSULTANT
ABERDEEN UNIVERSITY RESEARCH AND
INDUSTRIAL SERVICES, LTD. (AURIS)
Soc. Sec. No.:
Tax ID No.:
Alaska Business License: _____

Alex G. Kemp
Prof. Alexander G. Kemp Date
Director
Aberdeen University Petroleum and
Economic Consultants, a division of
AURIS

AGENCY
ALASKA LEGISLATIVE COUNCIL

Mike Davis
Rep. Mike Davis, Chair Date
Procurement Officer

Sam Cotten
Rep. Sam Cotten Date
Speaker, House of Representatives

Bettye Fahrenkamp
Senator Bettye Fahrenkamp Date
Project Director
Chair, International Oil Tax
Comparison Group

Hugh Malone 3/19/90
Hugh Malone, Commissioner Date
Department of Revenue

Certifying Authority

Warren W. Endicott 3/19/90
Warren W. Endicott Date
Executive Director
Legislative Affairs Agency

Approved as to Form

Theresa L. Bannister 3-15-90
Legal Counsel Date

DRAFT

I N T E R N A T I O N A L

TAX COMPARISON STUDY

FOR

S T A T E O F A L A S K A

DRAFT

C O N C L U S I O N S

- * **BROAD COMPARISONS ARE POSSIBLE
AND USEFUL**
- * **THE COMPANIES DID WELL IN PRUDHOE BAY**
- * **THE STATE DID WELL IN PRUDHOE BAY**
- * **IF WE LOOK BACK THE STATE MIGHT HAVE
DONE BETTER IN '81-'83 BUT**

DRAFT

C O N C L U S I O N S

- * **THERE IS NO PANACEA LEGISLATION**

- * **NO-ONE ELSE FOUND AND DEVELOPED A
10 BILLION BARREL FIELD IN THE PERIOD**

- * **IF THEY HAD, THEIR LEGISLATION MIGHT HAVE
BEEN TOUGHER**

- * **ENCOURAGING INCREMENTAL PROJECTS ARE A BIG
PROBLEM ELSEWHERE - YOU AREN'T ALONE
IN THE DIFFICULT CHOICE OF :**

BALANCING JAM NOW versus CAVIAR TOMORROW!

...

DRAFT

C O N C L U S I O N S

- * THE COMPANIES WILL DO WELL IN THE FUTURE
IF REINVESTMENT CAN BE CONTROLLED
- * NEW PROJECTS ON THE SLOPE ARE MARGINAL
ESPECIALLY IF EXPLORATION COSTS ARE
ALLOCATED
- * ALASKAN LEGISLATION LOOKS HARSHER FOR
THOSE NEW PROJECTS THAN ELSEWHERE
- * INCREMENTAL PROJECTS A LA HURL STATE
ANALOG LOOK BETTER IN ALASKA

LOOKS WORSE

...

DRAFT

C O N C L U S I O N S

- * THERE IS A NEED FOR MORE DIALOGUE BETWEEN
GOVERNMENT AND INDUSTRY NOT ONLY HERE**

- * ALASKA IS DISADVANTAGED BY COMPARISON
WITH OTHER OIL PRODUCING LEGISLATIONS
AS IT ONLY CONTROLS A PART OF TOTAL
TAXATION AND GAINS ONLY VERY INDIRECTLY
FROM EMPLOYMENT, SERVICES AND
MANUFACTURE OCCURRING IN THE LOWER 48**

DRAFT

C O N C L U S I O N S

- * BEING A CURRENT INVESTOR HELPS
SUBSTANTIALLY AND MITIGATES AGAINST
NEWCOMERS**

THIS IS TRUE JUST AS MUCH IN THE NORTH SEA

- * WHILE THE NEW FIELDS CAN LOOK ATTRACTIVE
WITHOUT EXPLORATION COSTS - THIS
DETRACTS FROM NEW EXPLORATION/OUTSTEP
OPPORTUNITIES**

- * THERE IS NO PANACEA**