ALASKA LEGISLATURE COMMITTEE FILES 1987-1988 8672
4948 HRES HB 164 (FILE 2) - HB 164 (FILE 3) (see ELF) 520

ARCO Alaska, Inc.
P. O. Box 100360
Anchorage, AK 99510

Sohio Alaska Petroleum Company
Pouch 6-612
Anchorge, AK 99502

June 29, 1983

Director
State Of Alaska
Division of Minerals & Energy Management
Department of Natural Resources
Pouch 7-005
Anchorage, AK 99510

EXH E-1

Subject: EXHIBIT E-1
PLAN OF DEVELOPMENT AND OPERATION FOR
LANDS OUTSIDE THE INITIAL PARTICIPATING
AREAS - PRUDHOE BAY UNIT AGREEMENT
STATE OF ALASKA

Sohio Alaska Petroleum Company and ARCO Alaska, Inc., as Operators of the Prudhoe Bay Unit, respectfully submit herewith a progress report for the twelve (12) months ending June 1983, as required by the final paragraph of Exhibit E-1 to the Prudhoe Bay Unit Agreement.

Sincerely,

Leland E. Tate

L. E. Tate
Vice President
Engineering and Extension
Exploration
ARCO Alaska, Inc.

P. J. Martin

P. J. Martin
Vice President
Operations and Engineering
Sohio Alaska Petroleum Company

csr
Attachment

PLAN OF DEVELOPMENT AND OPERATION FOR LANDS

OUTSIDE THE INITIAL PARTICIPATING AREAS

PROGRESS REPORT: JULY 1, 1982 TO JULY 1, 1983

LISBURNE RESERVOIR

During the report period, the extended production test on West Bay State No. 1 well was completed. The West Bay test, located on lease no. ADL 28302, has increased our knowledge of the productivity of the Lisburne Reservoir. The results of the test are confidential and are on file with the Alaska Oil and Gas Conservation Commission.

Two new delineation wells as described below have been spudded in the Lisburne region during 1983.

Owner	Well Name	Bottom-Hole Location
ARCO/Exxon	South Point St. 1	18-11-15
ARCO/Exxon	Pingut St. 1	24-11-15

These wells will be extensively cored, logged, and tested to further appraise the Lisburne Reservoir continuity and productivity.

A conceptual facility design is in progress and plans are underway to coordinate a preliminary facility design during 1983. In addition, detailed geological, geophysical and reservoir engineering studies are underway by the affected Working Interest Owners to evaluate the structure, areal extent, continuity and productivity of the hydrocarbon-bearing reservoirs within the Lisburne.

KUPARUK RESERVOIR

During the report period, the Kuparuk interval was penetrated by the following Prudhoe Bay Unit Sadlerochit development wells drilled from S-Pad located in Section 35, T12N, R12E. These wells summarized below are drilled on State leases and the results are on file with the State.

WELL	BHL	SPUD DATE	COMPLETION DATE	TOTAL DEPTH (MD)	LEASE ADL #
S-10	35-12-12	6/17/82	7/4/82	9,715'	28257
S-9	34-12-12	7/5/82	7/25/82	10,480'	28258
S-8	35-12-12	7/26/82	8/21/82	9,740'	28257
S-14	36-12-12	8/22/82	9/16/82	11,216'	28257
S-13	2-11-12	9/18/82	10/12/82	11,503'	28260
S-7	2-11-12	10/13/82	11/10/82	10,810'	28260
S-6	2-11-12	11/11/82	12/3/82	10,810'	28260

Over the last year, incremental Kuparuk logging and/or side wall cores have been obtained in two of the S-Pad wells. Consideration is being given to acquiring additional data in upcoming S-Pad area wells. This type of information will be used in studies to determine the economic potential of development of these Kuparuk reservoir accumulations in the Unit area.

Approximately 651 line miles of seismic data have been acquired within the Unit during the report period, primarily for Sadlerochit development. Approximately 10 percent of this data is located in the S-Pad area and may be useful in defining the structure and areal extent of the Kuparuk interval in that area. This data is being processed and will be interpreted before the end of 1983.

Detailed geological and geophysical studies of the Kuparuk River Formation in the Prudhoe Bay Unit are continuing, incorporating the Kuparuk information and results from the drilling mentioned above. Development alternatives for the Kuparuk reservoir are currently being evaluated for future consideration.

NORTH PRUDHOE BAY (PERMO-TRIASSIC)

During the report period, there were no wells drilled and there was no seismic data acquired in the North Prudhoe Bay (Permo-Triassic) area. Results of ARCO's N. Prudhoe State #2, drilled in April 1982, located on lease no. ADL 28301, have been interpreted and are being incorporated in an updated geophysical interpretation of the area.

ENDICOTT RESERVOIR

As reported in the Endicott section of the Prudhoe Bay Unit Plan submitted on March 30, 1982, it is apparent that the Endicott Reservoir underlies leases in the northeast corner of the Prudhoe Bay Unit, the adjacent Duck Island Unit, as well as State leases that are not currently included in any Unit. As a consequence, many Endicott activities are being undertaken cooperatively by the Endicott group of leaseholders (Sohio Alaska Petroleum Co., ARCO Alaska, Inc., Exxon Corporation, Union Oil Company of California, Amoco Production Company, Sealaska Inc., Cook Inlet Region Inc., Nana Regional Corporation Inc., and Doyon Ltd.), and the 1982 plan addressed these joint activities. As a further consequence, additional Endicott Plans of Development, substantially consistent with the Prudhoe Bay Unit Plan were submitted to the Director on behalf of the Duck Island Unit and ADL 312828 leaseholders on May 6, 1982, and October 12, 1982, respectively.

The Endicott group is currently working towards unitization of the Endicott Reservoir. In this regard, consideration is being given to contraction of leases ADL 34633, ADL 34634 and ADL 34636 from the Prudhoe Bay Unit, and

simultaneous expansion of the Duck Island Unit to include leases ADL 34633, ADL 34634 and ADL 34636, as well as ADL 312828 and ADL 312834.

Summary of Work

In general, work has progressed in accordance with the 1982 plans, as detailed below. The work program is geared towards continued evaluation of the prospect such that Endicott owners will be in a position to appraise development feasibility after receipt of major permits and other approvals.

Work Conducted Since Previous Plan

(i) Drilling Activity

Sag Delta 10 was successfully drilled to a bottom-hole location in 31-12-17 and proved to be a valuable delineation well for the Endicott Reservoir. The entire reservoir section in the well was logged and cored, and the well was production tested, prior to curtailment of drilling activities at breakup, when the well was suspended and the drilling rig removed. Following drilling, core analysis, petrological analysis, and fluid analyses have been carried out.

Since, contrary to expectations, Sag Delta 10 was tested immediately following drilling, it was not necessary to move a rig to Endeavour Island in the winter of 1982/83 for this purpose. Accordingly, the testing of Sag Delta 9 (also on Endeavour Island), which would have been carried out had a rig been on the island, was not conducted.

(ii) Geophysical

The data acquisition phase of a 3-D seismic survey covering approximately 26 square miles over the entire Endicott Reservoir area was successfully conducted in the first and second quarters of 1983.

Since March 1982, approximately 20 miles of earlier 2-D data has been reprocessed, a lower mileage than predicted. This is because the need for the reprocessing is largely alleviated by the availability of the higher quality 3-D data.

(iii) Engineering Studies

The Endicott group has completed two major engineering studies for the conceptual design of facilities and pipelines necessary to support development of the Endicott Reservoir. Additionally, several geotechnical studies were conducted in conjunction with the conceptual design effort. The purpose of the conceptual work was to evaluate the feasibility and cost of various development alternatives. Following completion of the conceptual design contracts in September 1982, the Owners agreed on the major development concepts to be carried forward for further design and project permitting. These concepts include:

- One main production island (west).
- One satellite drilling island (east).
- Gravel causeway from west island to shore and east island.
- Waterflood intake integral to west island.
- Base Operation Camp offshore on west island.
- Main Construction Camp onshore in the Sag Delta area.
- Sales pipelines routed onshore through the Sag Delta.

(iv) Environmental/Permits

The Endicott group conducted various environmental field studies both onshore and offshore during 1982 for the purpose of obtaining a better understanding of the environment in the project area and establishing a data base of information from which to prepare an Environmental Impact Statement (EIS). An initial project permit application was filed in September 1982 with the Corps of Engineers. At the same time, an Engineering Overview and companion Environmental Overview were issued to the Corps and the various permitting agencies. The Engineering

Overview describes tne base case development plan carried through conceptual engineering; the Environmental Overview describes the environmental setting and the changes that may occur as a result of the project development. The filing of the Corps permit appli ation effected the start of the EIS process in which the Corps was established as the lead agency. A third party contract was established for preparing the EIS.

A National Pollutant Discharge Elimination System (NPDES) permit application was filed with the EPA in January 1983. This application covers the proposed discharge of drilling muds and cuttings offshore in the project area. A Prevention of Significant Deterioration (PSD) permit application was filed with he EPA in March 1983. This application provides an estimation of the air emissions resulting from the project development as well as an assessment of the impact of these emissions on air quality in the project area.

Public scoping meetings for the EIS were held in January and February 1983 at various locations in the State. The scoping process for the EIS concluded in April 1983.

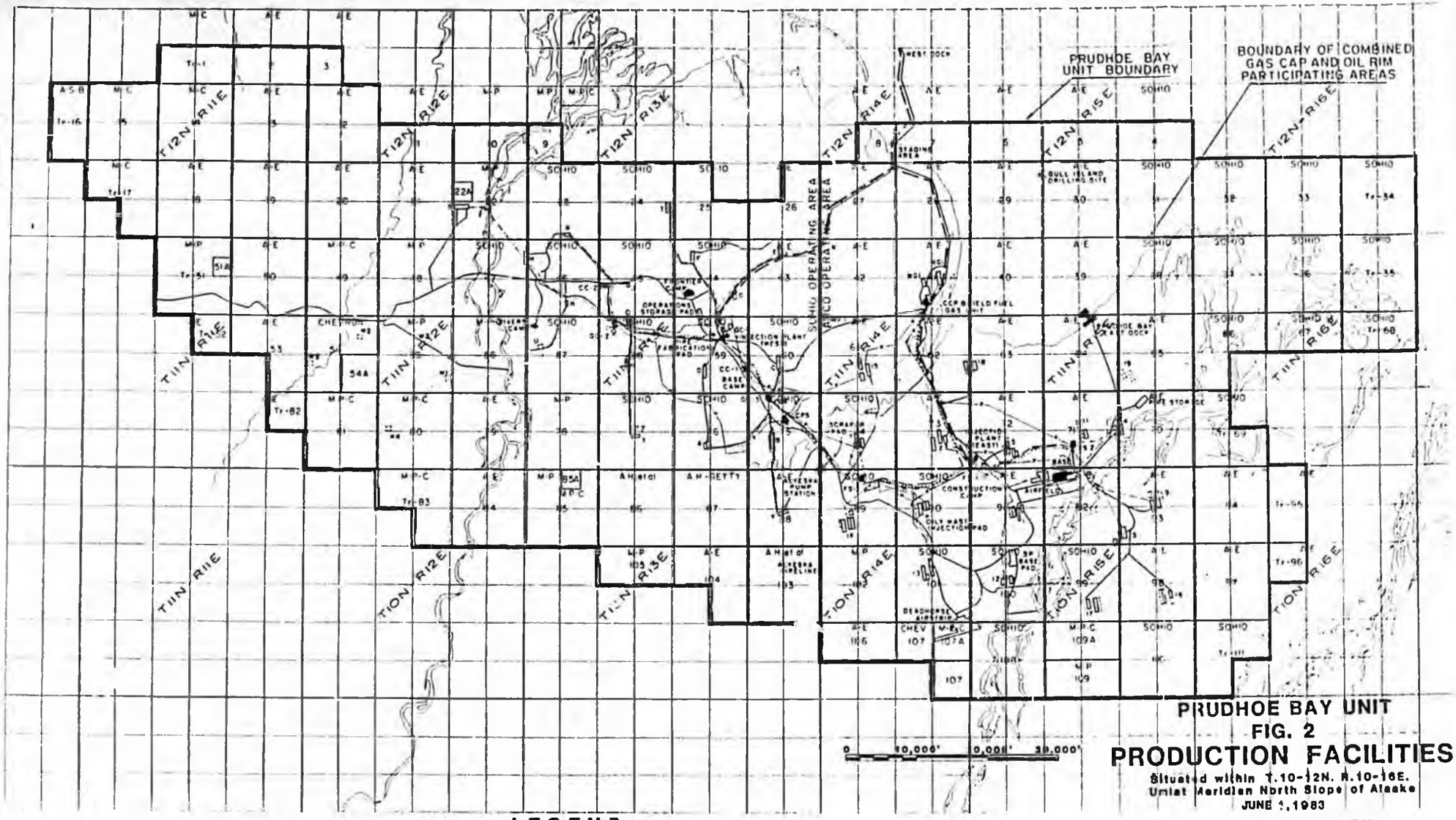
Work In Progress

(i) Engineering Studies

The Endicott Owners began an engineering contract on June 1, 1983, for further design of facilities and pipelines necessary to develop the project. The major thrust of work during 1983 will be performing design optimizations on the selected development concepts. At the same time, additional geotechnical studies and field tests will be conducted to support the preliminary design effort.

(ii) Environmental/Permitting

The Corps of Engineers is currently preparing the Draft EIS . The Endicott Owners are preparing additional permit applications for submittal to the various permitting agencies.



PRUDHOE BAY UNIT
FIG. 2
PRODUCTION FACILITIES

Situated within T.10-12N. R.10-16E.
Umiat Meridian North Slope of Alaska
JUNE 1, 1983

LEGEND

DRILL PADS AND DRILL SITES
- EXISTING
- POSSIBLE FUTURE

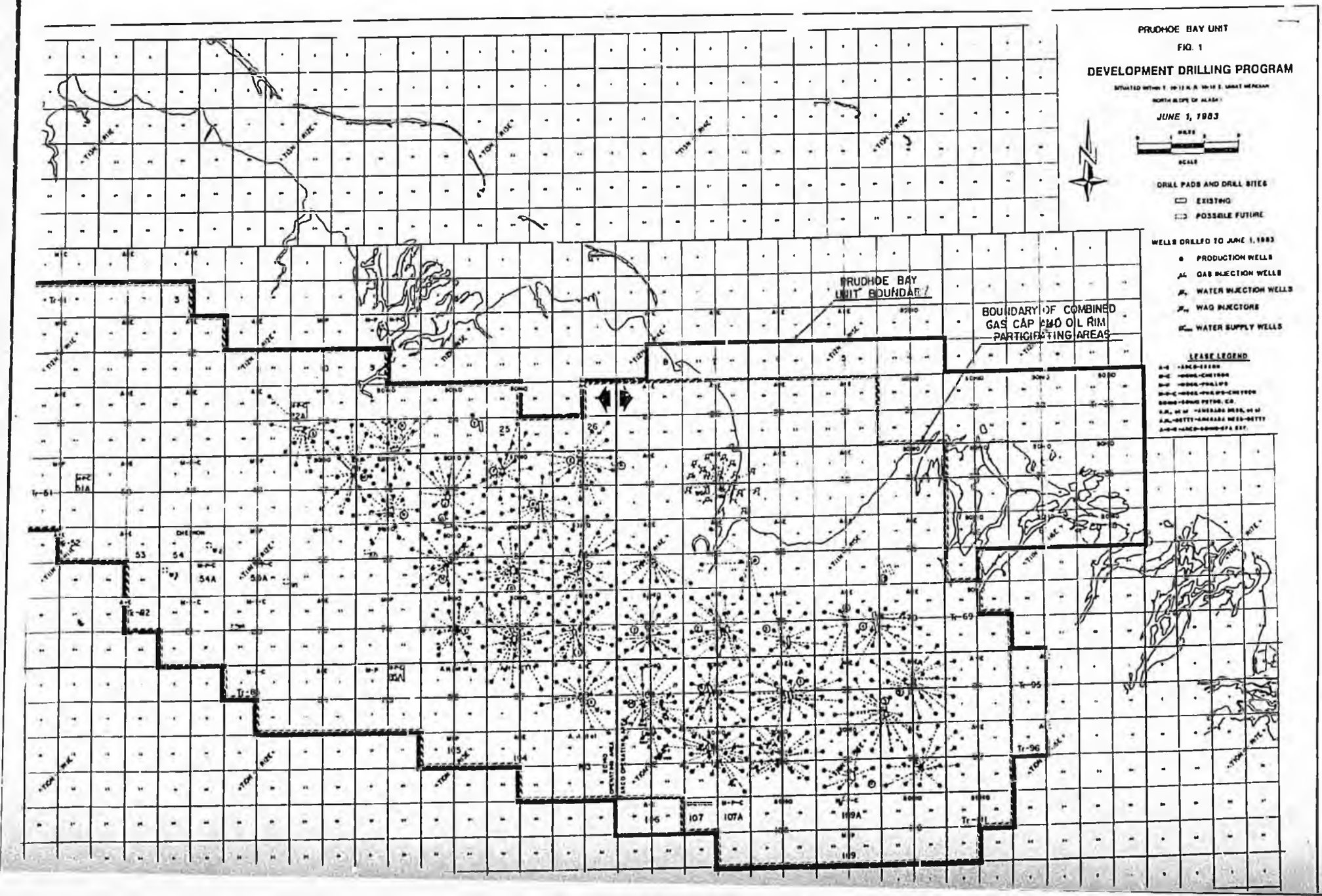
PRODUCTION FACILITIES
- EXISTING
- POSSIBLE FUTURE

PIPELINES
- EXISTING FLOWLINES
- POSSIBLE FUTURE FLOWLINES (with access roads)
- OIL GATHERING AND OIL TRANSIT LINES
- GAS INJECTION LINE
- GAS GATHERING AND GAS TRANSIT LINES
- POSSIBLE FUTURE OIL AND GAS GATHERING LINES
- FUEL GAS LINE
- NGL DISTRIBUTION LINE

OTHER FEATURES
- ROADS (with bridges where required)
- TRANSMISSION LINE (69 KV)
- WATER INJECTION PLANT
- LOW PRESSURE SEAWATER LINES

LEASE LEGEND

A-E	Arco-Exxon
M-C	Mobil-Chevron
M-P	Mobil-Phillips
M-P-C	Mobil-Phillips-Chevron
SOHIO	Sohio Petro. Co.
A.H., et al	Amerada Hess, et al
A.H.-GETTY	Amerada Hess-Getty
A-S-B	Arco-Sohio-BPAE


PRUDHOE BAY UNIT
FIG. 1
DEVELOPMENT DRILLING PROGRAM
JUNE 1, 1983
DRILL PADS AND DRILL SITES
EXISTING
POSSIBLE FUTURE
WELLS DRILLED TO JUNE 1, 1983
PRODUCTION WELLS
GAS INJECTION WELLS
WATER INJECTION WELLS
WAG INJECTORS
WATER SUPPLY WELLS
LEASE LEGEND
PRUDHOE BAY UNIT BOUNDARY
BOUNDARY OF COMBINED GAS CAP AND OIL RIM PARTICIPATING AREAS

Prudhoe Bay Unit Files

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June 29, 1982

Director
State of Alaska
Division of Minerals & Energy Management
Department of Natural Resources
703 E. Northern Lights Boulevard
Anchorage, Alaska 99503

Subject: PRUDHOE BAY UNIT
ANNUAL PROGRESS REPORT

Dear Sir:

In accordance with the requirements of the Prudhoe Bay Unit Agreement, we are submitting an annual progress report of the activities performed under the Plan of Development included as Exhibit 'E'.

If you should have questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

G. L. Downey
Vice President
Engineering and Extension
Exploration
ARCO Alaska, Inc.

Paul J. Martin
P. J. Martin
Vice President
Operations and Engineering
Sohio Alaska Petroleum Company

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Attachment

PRUDHOE BAY UNIT

ANNUAL PROGRESS REPORT

In accordance with provisions of the Prudhoe Bay Unit Agreement, this Annual Progress Report has been prepared for submission to the Director, Division of Minerals and Energy Management, Department of Natural Resources. The purpose of this report is to summarize the previous years' activities under the plan of development and operation, which is incorporated in the Unit Agreement as Exhibit 'E'.

Oil Production

Since June 1, 1981, production to the TAPS line has been essentially continuous, at approximately 1.5 MMSTB/D, with only a few brief shortfalls occurring during the past year. These shortfalls have normally been associated with planned maintenance activities of the Prudhoe Bay field or TAPS facilities. During the period of June 1, 1981 through May 31, 1982, a total of 557 MMB of oil and condensate was delivered to the pipeline at an average rate of 1527 MSTB/D. Total net oil and condensate production from the field from April 1, 1977 (the effective date of the Prudhoe Bay Unit) through May 31, 1982 is 2323 MMB, including approximately 5.08 MMB to the crude oil topping plant.

Gas Production And Injection

From June 1, 1981 through May 31, 1982, a total of 677 BSCF of gas was produced from the field and 622 BSCF was reinjected into the gas cap of the Prudhoe Oil Pool. The majority of the remaining 55 BSCF was used as fuel, purge and pilot gas, with only a minor amount flared. All flaring is being held to practical minimums and has been in accordance with the rules established by the State of Alaska, Division of Oil and Gas Conservation in Conservation Order No. 145-A of January 12, 1978.

Water Production

Water production between June 1, 1981, and May 31, 1982, totalled 14 MMB, of which 1.4 MMB was produced intentionally from two Drill Site 1 wells in the Eastern Operating Area for produced water injectivity tests in well DS 5-17. Excluding water production from the two source water wells, total water production rose slightly from 9.4 MMB the previous year to 12.6 MMB the past year. The injectivity tests were completed by December 1981, and since that time, the DS 5-17 well has been utilized for routine produced water injection into the Sadlerochit at Flow Station 1. The other Flow Stations/Gathering Centers continue to use disposal wells with injection into the Cretaceous/Tertiary Sands.

Additional Wells And Facilities

As of May 31, 1982, a total of 356 wells were drilled, completed, and connected for production to their respective Flow Stations/Gathering Centers, of which 190 and 166 wells were located in the Eastern and Western Operating Areas, respectively. Also, another 135 wells, 52 in the East and 83 in the West, had been drilled and completed but were awaiting perforation. The bottomhole locations of the oil producing wells drilled as of May 31, 1982 are shown in Figure , together with possible future 160-acre locations.

As of May 31, 1982, drilling was in progress at Drill Sites 2, 13, 14, and 15 in the Eastern Operating Area. In the Western Operating Area drilling was in progress on Well Pads A, B, C, E, and S.

Figure 2 shows the location of existing production facilities, pipelines, roads, bridges, airstrips and base camps, together with facilities under construction and possible future facilities.

CONTINUED DEVELOPMENT

Well and facility additions are continuing in order to ensure that adequate field capacity is available to meet oil pipeline demand up to a maximum annual average oil rate of 1.5 MMSTB/D, plus condensate production, in accordance with Conservation Order No. 145. Field facilities will also be available to accommodate gas pipeline deliveries of 2.0 BSCFD when a gas conditioning plant and pipeline are completed.

Current plans envision approximately 940 development wells for the main area of the field, or 460 wells in the Western Operating Area and 480 wells in the Eastern Operating Area. These well count estimates include current and future 160-acre development wells, infill wells, and water injection wells. Current projections of drilling activity levels indicate most of the wells will be drilled by 1987. Continued development drilling will require the expansion of some drill sites/well pads as well as the construction of new ones. Facilities to tie-in these wells are either being designed or fabricated and will be installed coincidental with drilling operations. For example, following the 1982 sealift, facilities will exist to accommodate 654 wells; following the 1985 sealift, current planning envisions 906 wells can be accommodated.

Effective July 1, 1981, Rule 2 of Conservation Order No. 145 was amended to allow drilling on reduced spacing, and subsequently in late-1981 the Unit began infill drilling at select drill sites. Reservoir model results continue to support significant infill development; however, ultimate well requirements will depend on reservoir performance.

Low pressure systems will be installed in annual increments covering several years. The first increment, currently being installed at Flow Station 2, is scheduled to be operational in mid-1982. Current plans indicate that all three Flow Stations in the Eastern Operating Area will have low pressure capability by 1984. In the Western Operating Area, all Gathering Centers will have low pressure capability by 1984, with the first increment being installed at Gathering Center 2 in 1983. Low pressure systems will be provided to drill sites/well pads on a priority basis beginning in 1982. Based on the current plan approximately 28 well pads will have low pressure capability by 1984, with the remainder by 1986.

Current plans provide for the initiation of gas lift at X Pad in the Western Operating Area beginning in late-1982 with the commissioning of a 35 MMSCFD capacity compressor. In 1984 the gas lift system will be expanded fieldwide with the installation of a nominal 375 MMSCFD capacity compressor at Flow Station 3, gas lift transmission lines between Gathering Centers and Flow Stations, and a tie line connecting the two sides of the field. Currently, it is expected that other large increments of artificial lift will be commissioned in 1986 and 1987. Current predictions envision gas lift usage to be 1.3 to 1.5 BSCFD by 1987; however, further study and field performance is required to better define the timing of future increments and the ultimate gas lift system requirements. Artificial lift will be provided to drill sites/well pads on a priority basis beginning in 1982. Based on the current plan, approximately 13 drill sites/well pads will have gas lift capability by 1984, with the remaining completed by 1987.

Gas injection capacity has been increased with the addition of a ninth low-stage compressor at the Central Gas Injection Plant. This unit, which was delivered on the 1981 sealift, is currently undergoing final check-out.

Including this unit, there are now nine low stage and four high stage units at the Central Gas Injection Plant. Eighteen gas injection wells are currently available, including fourteen at the North Pad and four at the West Pad. Adequate gas injection well capacity is available for the added compression capacity along with normal injection well maintenance or stimulation downtime.

The initial increments of produced water injection facilities for Gathering Centers 2 and 3 arrived on the 1981 sealift and are expected to become operational during the second half of 1982. Produced water injection facilities have previously been installed at the three Eastern Operating Area Flow Stations, with routine injection operations starting at Flow Station 1 in January 1982. Injection service at Flow Stations 2 and 3 is expected to commence later during 1982 and early 1983, respectively, when sufficient sustainable produced water volumes become available. By the end of 1986, total installed injection capacity, including spares, is expected to be approximately 1.65 MMBWPD, with about 900 MBWPD capacity in the Western Operating Area and 760 MBWPD capacity in the Eastern Operating Area. Ultimate injection of produced water is currently projected to be about 1.0 MMBWPD.

The Prudhoe Bay Unit source waterflood project remains on schedule for the planned mid-1984 start-up of source water injection. Initial rates are anticipated to be 1.5-2.0 MMBWPD in 1984. The basic waterflood plans and implementation schedule presented in the May 1980 Prudhoe Oil Pool Rules Hearing and the December 1980 Secondary Recovery Permit Application are unchanged at this time. The design and fabrication of the seawater treating plant and East and West side injection facilities are on schedule, and designs have retained flexibility to accommodate any of the water injection patterns under consideration. The 1981 environmental monitoring program results have

been provided to the Corps of Engineers, and planning for the 1982 monitoring program is in the final stages of development. Additionally, development of a comprehensive reservoir surveillance program has begun in conjunction with detailed waterflood implementation planning.

Reservoir analysis continues to focus on optimization for the three major waterflood areas of the Northwest Fault Block, the Peripheral Wedge Zone, and the Flow Station 2 area. Reservoir model studies have continued to explore variables such as well spacing, injection volumes, and patterns, in order to maximize recoveries in project areas. Also, recent field performance and drilling data continue to be incorporated into studies to improve the reservoir description. The DS 5-17 high rate water injection test has now been concluded with offset well performance approximating predictions. Additionally, analysis of the 60-day injection test in well DS 5-14, which was conducted to investigate the effects of cold water injection (40°F) into the Sadlerochit, suggests no adverse effects due to either hydrate formation or thermal fractures. More injectivity data will be gathered throughout the field as additional wells are converted to produced water injection.

During the past year, reservoir and facilities conceptual design studies for development of the Eileen - West End area of the field have continued. Also, the Kuparuk well, Sec. 22, T11N, R12E was converted for use as a pressure observation well. Associated with the conversion, production tests were performed on the well and the fluid, pressure, and production data obtained are being integrated with the areal geologic data to improve the ongoing reservoir and facilities studies. These studies are being directed towards well spacing, waterflooding and optimum facilities development.

ARCO Alaska, Inc.
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Anchorage, Alaska 99510

Sohio Alaska Petroleum Company
Pouch 6-612
Anchorage, Alaska 99502

June 29, 1982

Director
State of Alaska
Division of Minerals & Energy Management
Department of Natural Resources
Pouch 7-005
Anchorage, Alaska 99510

Subject: EXHIBIT E-1
PLAN OF DEVELOPMENT AND OPERATION FOR
LANDS OUTSIDE THE INITIAL PARTICIPATING
AREAS - PRUDHOE BAY UNIT AGREEMENT
STATE OF ALASKA

Dear Sir:

Sohio Alaska Petroleum Company and ARCO Alaska, Inc., as Operators of the Prudhoe Bay Unit, respectfully submit herewith a progress report for the twelve (12) months ending June 1982, as required by the final paragraph of Exhibit E-1 to the Prudhoe Bay Unit Agreement.

Sincerely,

G. L. Downey
Vice President
Engineering and Extension
Exploration
ARCO Alaska, Inc.

P. J. Martin
Vice President
Operations and Engineering
Sohio Alaska Petroleum Company

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Attachment

PLAN OF DEVELOPMENT AND OPERATION FOR LANDS

OUTSIDE THE INITIAL PARTICIPATING AREAS

PROGRESS REPORT: JULY 1, 1981 to JULY 1, 1982

Lisburne Reservoir Area

During the report period, the Lisburne formation was penetrated by two wells, ARCO's North Prudhoe Bay State No. 2 and Sohio's Sag Delta No. 9. The North Prudhoe Bay State No. 2 is on Lease No. ADL 28301, located 2377' FNL and 2401' FWL, Section 26, T12N, R14E, UPM. The well was spudded April 30, 1982 and drilled to a total depth of 10,780' MD and suspended on June 3, 1982. The Sag Delta No. 9 is on Lease No. ADL 312828 located 2230' WEL and 336' SNL, Section 36, T12N, R16E, UPM. The well was spudded October 15, 1981 and drilled to a total depth of 14,100' MD and suspended on January 25, 1982. The results of these two wells are confidential and are on file with the Alaska Oil and Gas Conservation Commission.

ARCO is currently conducting an extended production test on the West Bay State No. 1 well located on Lease No. ADL 28302. Facilities were constructed to separate and meter the produced fluids and mechanical problems in the well were corrected allowing production to begin in March 1982. Facility modifications were required and now the production test has been in continuous operation for almost three months. Several more months of production are planned before concluding the test.

The results of the two recently drilled wells are currently being interpreted and their incorporation with existing data on the Lisburne will aid our understanding of the structure and continuity of hydrocarbon-bearing reservoirs within the carbonate section. The results of the production test will improve our understanding of the reservoir characteristics and production nature of the Lisburne, and provide information for conceptual development studies. Continuing geological analyses of the Lisburne during the past year have emphasized the very complex characteristics of the reservoir. Therefore, continued reservoir, geophysical, and geological studies are planned and further delineation drilling may be required to define the development potential of the Lisburne formation.

Kuparuk Reservoir

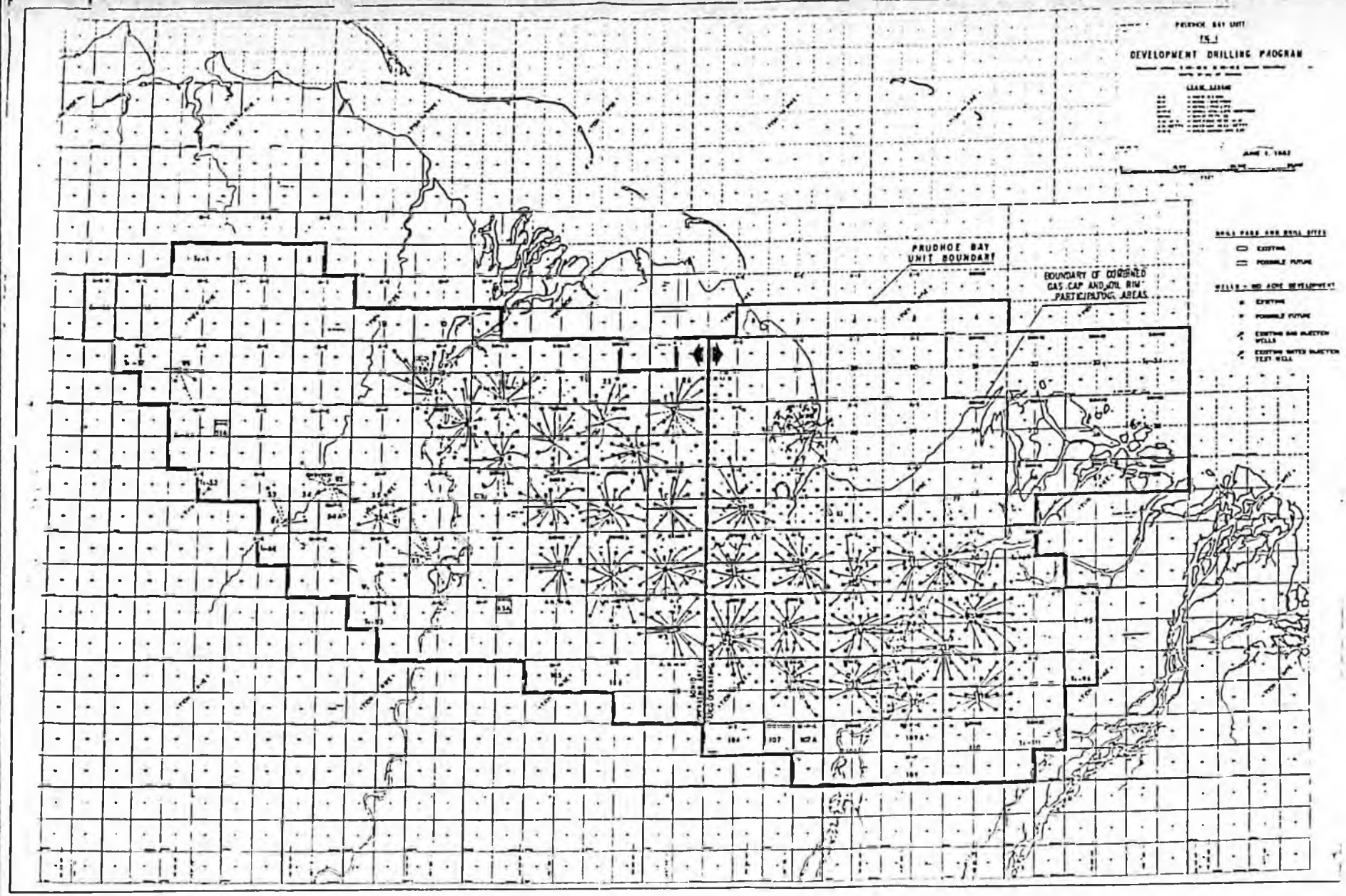
During the report period, the Kuparuk interval was penetrated by one well, ARCO's Eileen State No. 1 on Lease No. ADL 28254. The well is located 1700' FNL and 600' FWL, Section 18, T12N, R12E, UPM. The well was spudded February 21, 1982 and drilled to a total depth of 9,900' MD and suspended on March 18, 1982. The results are confidential and are on file with the Alaska Oil and Gas Conservation Commission.

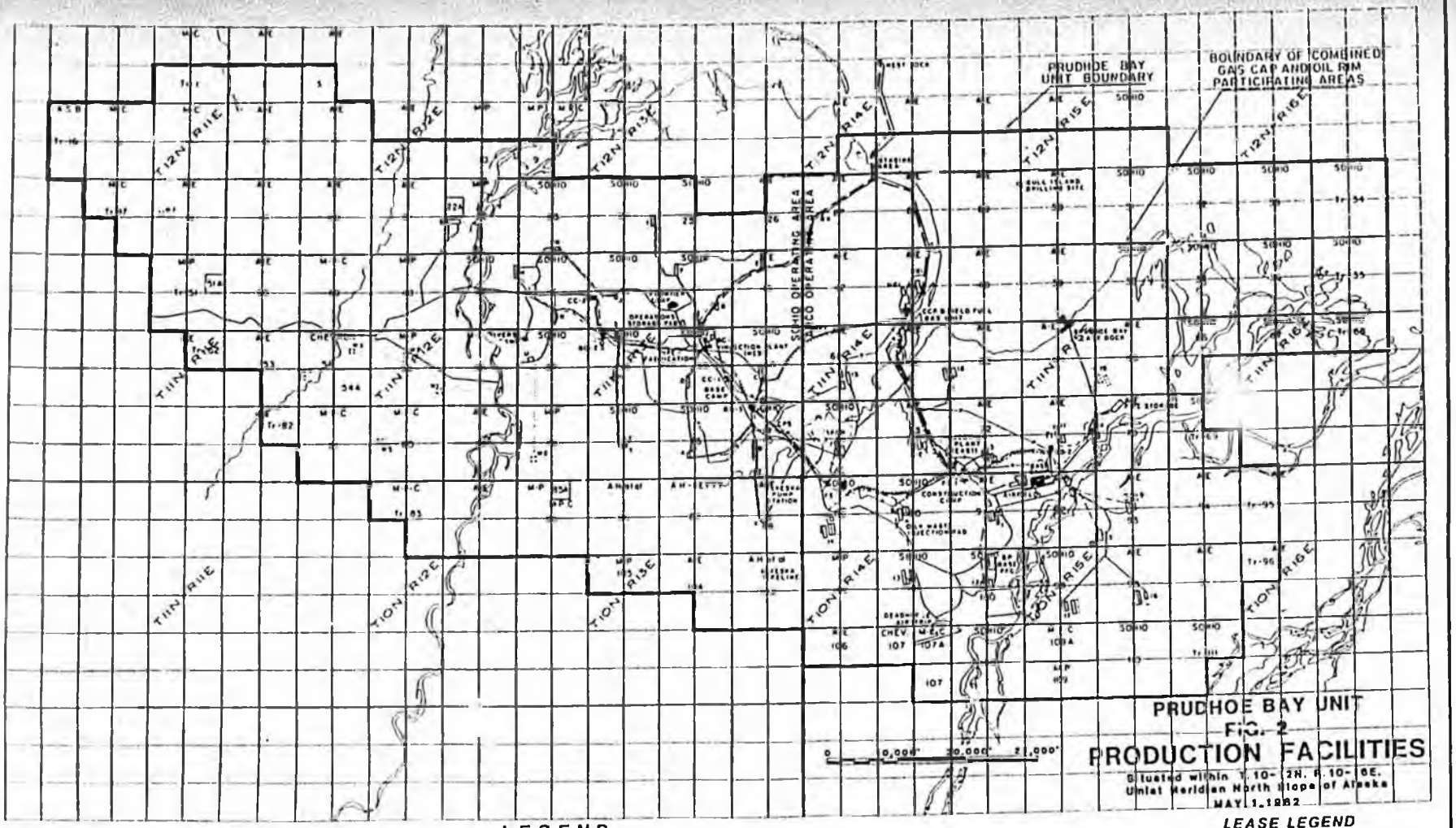
Detailed geologic and geophysical studies of the Kuparuk River formation are continuing, including incorporating the results of the drilling discussed above. Conceptual facility design studies for the West End Sadlerochit are scheduled for completion in the near future. Different conceptual development alternatives for the Kuparuk reservoir area are being considered both in conjunction with and separate from West End Sadlerochit development.

North Prudhoe Bay (Permo-Triassic) Reservoir

During the report period, the North Prudhoe Bay (Permo-Triassic) Reservoir was penetrated by one well, ARCO's North Prudhoe Bay State No. 2 on Lease No. ADL 28301. The well is located 2377' FNL and 2401' FWL, Section 26, T12N, R14E, UPM. The well was spudded April 30, 1982 and drilled to a total depth of 10,780' MD and suspended on June 3, 1982. The results are confidential and are on file with the Alaska Oil and Gas Conservation Commission. The information from the North Prudhoe Bay State No. 2 will need to be interpreted and studied in order to understand the structure and stratigraphy of the area prior to formulating additional plans for the area.

During the report period, a 270-mile seismic program was completed. The data is being processed and will be used to help define the limits of accumulation.


PRUDHOE BAY UNIT
DEVELOPMENT DRILLING PROGRAM
PRUDHOE BAY UNIT BOUNDARY
BOUNDARY OF COMBINED GAS CAP AND OIL RIM PARTICIPATING AREAS



PRUDHOE BAY UNIT
FIG. 2
PRODUCTION FACILITIES

Situated within T. 10- 12N. R. 10- 15E.
Umiat Meridian North Slope of Alaska
MAY 1, 1982

LEGEND

DRILL PADS AND DRILL SITES
- EXISTING
- POSSIBLE FUTURE

PRODUCTION FACILITIES
- EXISTING
- POSSIBLE FUTURE

PIPELINES
- EXISTING FLOWLINES
- POSSIBLE FUTURE FLOWLINES (with access roads)
- OIL GATHERING AND OIL TRANSIT LINES
- GAS INJECTION LINE
- GAS GATHERING AND GAS TRANSIT LINES
- POSSIBLE FUTURE OIL AND GAS GATHERING LINES
- FUEL GAS LINE

OTHER FEATURES
- ROADS (with bridges where required)
- TRANSMISSION LINE (69 KV)
- WATER INJECTION PLANT
- LOW PRESSURE SEAWATER LINES

LEASE LEGEND

A-E	Arco-Exxon
M-C	Mobil-Chevron
M-P	Mobil-Phillips
M-P-C	Mobil-Phillips-Chevron
SOHIO	Sohio Petro. Co.
A.H., et al	Amerada Hess, et al
A.H.-GETTY	Amerada Hess-Getty
A-S-B	Arco-Sohio-BPAE

ARCO Alaska, Inc.
P. O. Box 360
Anchorage, AK 99510

Sohio Alaska Petroleum Company
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Anchorage, AK 99502

March 30, 1982

Commissioner
State of Alaska
Department of Natural Resources
Pouch M
Juneau, AK 99811

EXHIBIT E-1
PLAN OF DEVELOPMENT AND OPERATION FOR
LANDS OUTSIDE THE INITIAL
PARTICIPATING AREAS - PRUDHOE BAY UNIT
AGREEMENT, STATE OF ALASKA,
JULY 1, 1982 - MARCH 31, 1987.

Dear Mr. Katz:

Pursuant to the requirements of Article 4.2 of the Prudhoe Bay Unit Agreement, the Unit Operators hereby submit a five (5) year Plan of Development and Operation for lands outside the initial Participating Areas. This Plan covers the period July 1, 1982 through March 31, 1987.

In summary, efforts on behalf of the tract owners have satisfied the terms and conditions of the current Exhibit E-1. The results obtained to date have been valuable, but inconclusive, due to the complexity of the areas under study. In that regard, the plans defined herein are designed to adequately delineate the development potential of these areas in a timely and logical manner.

We hope the report will be satisfactory and we will be pleased to discuss it with you and your staff.

Sincerely,

G. L. Downey
Vice President
Engineering and Extension
Exploration
ARCO Alaska, Inc.

Paul J. Martin
P. J. Martin
Vice President
Operations and Engineering
Sohio Alaska Petroleum Company

csr
Attachments

xc: Division of Minerals and Energy Management

PLAN OF DEVELOPMENT AND OPERATION

FOR LANDS OUTSIDE THE INITIAL PARTICIPATING AREAS

PRUDHOE BAY UNIT AGREEMENT, STATE OF ALASKA

Lands within the Unit Area that are not in the initial Participating Areas shall be developed and operated pursuant to the Plan of Development and Operation ("the Plan"), which is described below:

GENERAL

The hydrocarbon-bearing reservoirs that have been discovered within the Lisburne, North Prudhoe Bay (Permo-Triassic), Kuparuk River and Endicott formations which extend over lands in the Unit Area beyond the initial Participating Areas continue to be investigated to determine their potential. At the effective date of this document these reservoirs have not been proven to be capable of producing oil or gas in sufficient quantities to justify Working Interest Owners in developing and producing them. Additional wells, tests and studies are planned from July 1982 through March 1987 to further evaluate the suitability of these reservoirs for the formation of additional Participating Areas.

The Plan for these other reservoirs may include the drilling of additional wells both inside and outside the initial Participating Areas. As provided in the Unit Agreement, a well drilled on any part of a lease, any portion of which lease is included in the Unit Area, is deemed a well drilled in satisfaction of Exhibit E-1, regardless of whether or not such well is located in the Unit Area; provided that it is shown to the satisfaction of the Director that the bottom hole target of the well will provide a reasonable geologic test or geologic information significant to Unit Operations. Further, any information gained as a result of a well drilled outside the Unit

boundary may be used to contribute to the overall assessment of any reservoir wholly or partly within the Unit Area.

The terms of this Plan shall cover the time period from July 1, 1982 through March 31, 1987. As in previous years, on July 1, 1983 and each year thereafter, Unit Operators will file progress reports describing operations under this Plan for the preceding twelve (12) month period.

I. LISBURNE RESERVOIR

a) Introduction

The Lisburne Group lies stratigraphically beneath the Sadlerochit and is composed of sediments of Upper Carboniferous (Pennsylvanian-Mississippian) age. From the current geologic interpretation it appears the reservoir consists of hydrocarbon bearing dolomitic zones within a carbonate sequence.

Due to the overall structural configuration in the Prudhoe Bay Region, the hydrocarbon bearing zones of the Lisburne are generally found in tracts in the northeast sector of the Prudhoe Bay Unit; however, to date the reservoir has not yet been delineated.

Prior to April 1977, 6 wells were drilled that penetrated the Lisburne. Over the last 5 years an additional 12 wells have been drilled in the region in an attempt to define the stratigraphic and structural nature of the reservoir as well as establish various reservoir characteristics.

b) Operations To Date

i) Drilling Activity (April 1977 to April 1982)

The following wells were drilled in the Lisburne region during the last 5 years (The results of all wells are filed with the State of Alaska):

OWNER	WELL NAME	TTOM HOLE LOCATION
ARCO/Exxon	Gull Is. St. 2	33-12-15
Sohio	Sag Delta 2	10-11-16
Sohio	Sag Delta 2A	10-11-16
Sohio	Sag Delta 3	35-12-16
Sohio	Sag Delta 4	35-12-16
ARCO/Exxon	West Bay St. 1	1-11-14
Sohio	Niakuk 3	13-12-16
ARCO/Exxon	Term Well A	33-12-14
Marathon/Amerada Hess	Sag Delta 8	22-12-16
Sohio	Sag Delta 5	36-12-15
Sohio	Sag Delta 7	31-12-17
Sohio	Sag Delta 9	19-12-17

ii) Geophysical Studies

Over the period April 1977 to April 1982 more than 250 miles of new seismic was shot in the region and more than 100 miles of pre-1977 data reprocessed.

c) Work in Progress

An extended production flow test being performed in well ARCO/Exxon West Bay St. No. 1 will continue for a period of up to 6 months to evaluate the reservoir characteristics and productive nature of the Lisburne Reservoir. Also, Sohio's Sag Delta No. 10 is being drilled to location 31-12-17.

d) Future Plans

i) Drilling Activity

During the next year Working Interest Owners plan to drill at least one well within the Unit Area for further appraisal and delineation of the Lisburne Reservoir. The drilling of further wells will be dependent on studies outlined below as well as the results obtained from well tests.

ii) Studies

Detailed geological, geophysical and engineering studies will be continued by affected Working Interest Owners to evaluate the structure, areal distribution and continuity of hydrocarbon-bearing reservoirs within the Lisburne carbonates. This will include seismic studies such as reprocessing and interpretation of current data as well as additional shooting in conjunction with drilling operations. Based on these studies, further plans for Lisburne Reservoir development will be determined.

II. KUPARUK RESERVOIR

a) Introduction

Geophysical mapping and well data have suggested a trend, although highly faulted, of potential hydrocarbon-bearing accumulation(s) which may extend to and beyond the Prudhoe Bay Unit boundary in the northwest of the Unit area. To date 11 wells have been drilled in this area which evaluate the Kuparuk Reservoir.

b) Operations To Date

i) Drilling Activity

The following wells have been drilled in the Kuparuk region (The results of all wells are filed with the State of Alaska):

OWNER	WELL NAME	BOTTOM HOLE LOCATION
Mobil/Phillips	West Kuparuk St. 1	3-11-11
ARCO/Exxon	Beechy Pt. St. 1	20-12-12
Mobil/Phillips	N. Kuparuk St.	26-12-12
Mobil/Phillips	Kuparuk 9-11-12	9-11-12
Mobil/Phillips/Chevron	Kuparuk 7-11-12	7-11-12
Mobil/Phillips/Chevron	Term Well C	3-11-12
Chevron	Chevron Tract 18-11-12	18-11-12
Mobil/Phillips	Mobil/Phillips Tract 15-11-12	15-11-12
Mobil/Chevron	33-29E	29-12-11
ARCO/Exxon	Beechy Pt. St. 2	20-12-12
ARCO/Exxon	Drillpad S-3	27-12-12

ii) Geophysical Studies

In addition to the aforementioned drilling, 225 miles of seismic was shot to evaluate the Kuparuk Reservoir both inside and outside the Prudhoe Bay Unit.

c) Work In Progress

At the time of preparation of this report, ARCO/Exxon have just completed the drilling of Eileen State No. 1 well to a bottom hole location in 7-12-12 in an attempt to confirm the presence of hydrocarbons on the Eileen-Milne structural trend. The results of this well are presently being evaluated.

Detailed geologic and geophysical studies of the Kuparuk River formation are continuing. Different development alternatives are being considered in conjunction with the conceptual facility design studies for the West End Sadlerochit development.

d) Future Plans

Consideration is being given to the drilling of further wells along the Eileen-Milne structural trend to evaluate the areal limits of the separate hydrocarbon accumulations found at Beechy Point No. 1 well and in the Milne Unit. Further studies of the structure and stratigraphy of the trend will continue and will incorporate the evaluation of Eileen State No. 1. Based on the results of these studies, the drilling of additional delineation wells and seismic exploration may be undertaken.

III. NORTH PRUDHOE BAY (PERMO-TRIASSIC) RESERVOIR

a) Introduction

The North Prudhoe Bay (Permo-Triassic) Reservoir lies in that part of the Prudhoe Bay Unit which is north of and adjacent to the

Prudhoe Bay ult. Geophysical mapping in is area has, in part, defined several highly faulted features. Five wells have been drilled in the area to help evaluate these structural complexities.

North Prudhoe Bay St. No. 1 well encountered hydrocarbons in sufficient quantities to justify further investigation.

b) Operations To Date

i) Drilling Activity

The following wells have been drilled in the North Prudhoe Bay region (The results of all wells are filed with the State of Alaska):

OWNER	WELL NAME	BOTTOM HOLE LOCATION
ARCO/Exxon	North Prudhoe Bay St. 1	23-12-14
ARCO/Exxon	Gull Is. 1	21-12-15
ARCO/Exxon	West Beach St. 3	19-12-15
Sohio	Niakuk 1	26-12-15
Sohio	Niakuk 1A	26-12-15

ii) Geophysical Studies

Approximately 200 miles of seismic data has been shot in this area, 90 miles of which is 3-D seismic. Additionally, 65 miles of this data has been reprocessed.

c) Work In Progress

Another well, North Prudhoe Bay St. No. 2, has been permitted by ARCO/Exxon and will be drilled in Section 26-12-14 in the second quarter of 1982. This well will aid in the confirmation of the limits of this accumulation and supply data for studies concerning development planning. A 265 mile seismic program is in progress to help define the limits of the accumulation. Additionally, geological and geophysical studies are in progress and different development alternatives are being studied.

d) Future Plans

Studies of the structure and stratigraphy will continue following completion of both the drilling and geophysical programs. Based on these results, additional wells and geophysical studies may be proposed.

IV. ENDICOTT RESERVOIR

a) Introduction

Exploration activity in the northeast Prudhoe Bay Unit Area and adjacent leases has established the existence of a significant hydrocarbon accumulation in the Sag River Delta area of the Beaufort Sea. The accumulation was encountered in a Mississippian (pre-Permo-Triassic) system, hereafter described as the Endicott Reservoir. Subsequent delineation work has indicated that the Endicott Reservoir underlies leases in the northeast corner of the Prudhoe Bay Unit Area, and in the adjacent Duck Island Unit, as well as State leases that are not currently included in any unit. Current indications are that the Endicott does not extend into the initial Participating Areas within the Prudhoe Bay (Permo-Triassic) Reservoir.

The parties holding interests in leases in the area believed to be underlain by the reservoir are Sohio Alaska Petroleum Company, ARCO Alaska Inc., Exxon Corporation, Union Oil Company of California, Amoco Production Company, Koniag Inc., Sealaska Inc., Cook Inlet Region Inc., Nana Regional Corporation Inc. and Doyon Limited ("Sag Delta/Duck Island Group"). Of the Sag Delta/Duck Island Group, Sohio is the only party which holds leases in the Prudhoe Bay Unit Area that are underlain by the Endicott Reservoir.

Althoug. the current plan is submitted pursuant to the Prudhoe Bay Unit Agreement, the joint approach to development being taken requires that the plan address some operations which occur outside the Prudhoe Bay Unit Area. To the extent that such operations pertain to the ultimate potential development of the Endicott Reservoir, such operations should be considered as leading to the ultimate potential development of Prudhoe Bay leases. The Sag Delta/Duck Island Group has agreed to proceed jointly in planning the potential development of the Endicott prospect.

b) Operations To Date

i) Drilling Activity

The following wells have been drilled on State leases to the objective formation (The results of all wells are filed with the State of Alaska):

OWNER	WELL NAME	BOTTOM HOLE LOCATION
Sohio	Sag Delta 2	10-11-16
Sohio	Sag Delta 3	35-12-16
Sohio	Sag Delta 4	35-12-16
Exxon/ ARCO	Duck Island 1	05-11-17
Exxon, et al	Duck Island 2	04-11-17
Sohio/ Cook Inlet/ Doyon/ Koniag/ Nana/ Sealaska	Sag Delta 7	31-12-17
Exxon, et al	Duck Island 3	10-11-17
Sohio, et al	Sag Delta 9	19-12-17

ii) Geophysical Studies

A substantial quantity of seismic data has been acquired since 1977 on leases within and adjacent to the Prudhoe Bay Unit Area to aid in the interpretation of the Endicott structure. Ninety-five miles of new data has been acquired by Sohio, sole account, approximately 50 miles of new data was acquired through trade, and Sag Delta/Duck Island leaseholders

participated in a joi industry group gathering som. 84 additional miles of survey. In addition to this new data, some 110 miles of pre-1977 surveys have been processed by Sohio. Duck Island Unit Owners will, by Spring 1982, have acquired approximately 160 miles of new data and have reprocessed about 50 miles of pre-1977 data.

c) Work In Progress

i) Drilling Activities

Currently, Sohio is drilling Sag Delta No. 10 to a bottom hole location in 31-12-17. This well is expected to be completed in early 1982.

ii) Studies

Under the auspices of the Sag Delta/Duck Island Group, two major engineering studies are being undertaken with engineering contractors for conceptual design of the facilities and pipelines that would be necessary to support development of the Endicott Reservoir. Additionally, several geotechnical and environmental contracts are in progress to study the project area in conjunction with the conceptual design effort. The purpose of this work is to evaluate the feasibility and cost of various development alternatives. Also, joint company task forces have been formed to deal with permitting issues.

d) Future Plans

i) Drilling Activity

During the 1982-83 winter season, Sohio plans to conduct extensive production tests on both Sag Delta Nos. 9 and 10. This work will provide further definition of the productive capability of the Endicott Reservoir and will provide fluid samples from the reservoir which will be utilized in facility design.

ii) Geophys al Studies

A 3-D seismic survey covering 15-30 square miles is now being considered. Also, reprocessing of up to 100 miles of earlier 2-D data is planned.

iii) Studies

Conceptual engineering design work is expected to be completed in late 1982. Following a review of this work, if development appears feasible, detailed design would begin in 1983. Preliminary conceptual work will be used to initiate the permitting process. A Sag Delta/Duck Island Group task force has been assigned to coordinate the permitting effort, which is viewed by the group as the critical path item in a project execution schedule.

Individual companies are continuing to evaluate the structure, areal distribution and properties of the Endicott Reservoir. Based on the results of these studies, additional delineation wells or seismic activity may be proposed.

Prospect development is contingent upon assessment of commerciality and the timeliness with which permits can be granted. Engineering aspects of the schedule, namely the time required for design, procurement, fabrication, construction and drilling are under study as part of the conceptual engineering effort.

The current assessment is that the earliest date for startup of oil production would be in the late 1980s.

KSDAY .M.

The Anchorage Times

48 pages★★★ THURDAY EVENING, APRIL 7, 1988 25¢

Distributed by Editorial Board

ELF impact overstated by at least $222 million

By Robert Laurie
Times Juneau Bureau

JUNEAU — A department of Revenue analysis of an oil company tax formula overstated its impact on state revenues by at least $222 million over the next five years.

Revenue officials say they made a mistake when calculating the effect of the Economic Limit Factor on the state's income.

A measure to repeal the ELF is awaiting action in the Senate State Affairs committee, and has been the subject of a great deal of debate in the legislature.

Supporters of the measure have extensively quoted a fiscal note prepared last month by the department to accompany the bill. The note said the state is missing out on over $187 million this year because of the ELF. It shows the state losing over $227 million next year. By fiscal year 1993, it shows the state would lose over $1.4 billion.

But a revised fiscal note prepared this week shows shortfalls of $150 million in fiscal year 1988, a $30 million difference; and $152 million in 1989, a $75 million variation.

The new note showed that by 1993, the state will miss out on $1.2 billion, depending on the price of oil.

"Quite frankly, it was a mistake," said Chuck Logsdon, chief petroleum economist with the Department of Revenue. "We discovered the mistake and corrected it."

Logsdon said the department based its initial calculations on a wrong version of the bill.

"We had a version of the bill

See ELF bill, page A-9

ELF bill

Continued from page A-1

that dinged Kuparuk too hard," said Logsdon.

The bill went through three revisions as it made its way through the House last year. The version that finally passed the House eliminated a provision that would have increased the severance tax on Kuparuk.

The error, coupled with revised oil price assumptions based on the March revenue forecast, account for the differences, according to Logsdon. He said the changed oil price expectations play more of a role in the later years of the analysis.

Revenue Commissioner Hugh Malone said the mistake was just that.

"It wasn't an attempt on the part of the department or anyone to provide misinformation," assured Malone. He says the initial analysis was released outside of normal channels, before it could be checked for errors.

"We try to provide accurate information to legislators," he continued. That's why, he said, the department attached a chart showing how the impact differs depending on the price of oil.

Senate President Jan Faiks, who opposes the ELF measure, said she was aware of the mistake.

"No, I'm not surprised by it at all," she said. "The Department of Revenue has not been issuing accurate information."

Faiks said the department's revenue forecasts have also been flawed.

House Speaker Ben Grussendorf, who has led a House majority caucus campaign favoring the bill, said his argument remains essentially unchanged.

He said the $150 million will go a long way toward balancing the budget next year.

For Your Information,

ELF IS WORKING,
AND WORKING WELL

Robert B. Atwood
President and Publisher

Elaine Atwood
Assistant Publisher

William J. Tobin
Vice-President, Editor-in-Chief

The numbers game

YOU HAVE to understand the numbers game if you want to follow what's going on in Juneau in the battle over the budget — and the fight over all the various funds that make up the budget.

Gov. Steve Cowper and the House Democrats say the state is facing a horrible deficit because oil prices aren't high enough.

They say to fund the budget we must (1) spend the money now set aside in the Railbelt Energy Fund, (2) collect more taxes from the oil companies by altering the formula on which severance taxes are levied under the so-called Economic Limit Factor or (3) raid the earnings of the Permanent Fund.
defending ELF and the Railbelt Energy Fund and in the process staving off use of Permanent Fund earnings for a one-time budget pop, say none of these moves is necessary.

There is plenty of money in the till, the Republicans say, to fund a hold-the-line budget.

EVEN AT that, says the Senate majority, we can have a budget that is 3 percent higher than the current fiscal year — a boost that takes care of built-in, mandatory items that must be financed, such as the more than 200 new employees that will be required to staff the new Spring Creek Correctional Facility at Seward.

By holding the line at a 3 percent increase, and with the price of oil at $15 a barrel, the Senate says there is no need to raise taxes, spend the Railbelt Energy money or dip into the Permanent Fund earnings.

You only have to do that, they contend, if the governor has his way and gets a raft of new spending programs into the new budget.

What Gov. Cowper really is asking for, they say, is the money to hike this year's budget between 13 percent and 16 percent over the state's existing spending level.

If you go along with that, there indeed will be a deficit.

How big, however, is pretty hard to follow.

The reason is that the Department of Revenue runs different sets of figures at different times of the day.

THE NUMBERS are anything but clear, and some legislators are complaining there appears to be an almost deliberate attempt by the administration to befuddle the issue with figures that are apples and oranges.

It's a complex business, to be sure.

But for the general public, it can be reduced to a more simple and understandable level.

Given these economic times, can Alaska justify spending up to 16 percent more to finance governmental operations that it already is doing?

Or should Alaska look at this year as one to hold the line and spend no more than what is now available?

That presents an easy choice.

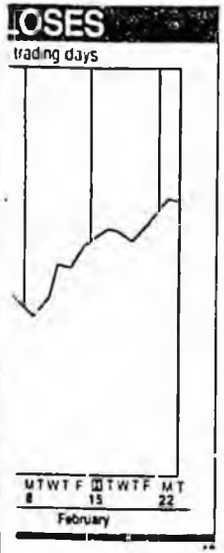
There's another option, of course, but it isn't being discussed in Juneau.

And that's reducing expenses by cutting the budget.

But don't hold your breath for that to happen.

place

LOSES
trading days



after rally

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State loss from ELF may double

By PATTI EPLER
Daily News reporter

A controversial oil tax program will cost the state about $100 million more than first estimated, according to state petroleum economist Chuck Logsdon.

The Economic Limit Factor (ELF), designed as an incentive to encourage oil production as fields begin to decline, will cost the state about $305 million in reduced severance taxes in fiscal years 1988 and 1989, about $108 million more than state officials had figured on when they were factoring the tax reduction into the state revenue picture.

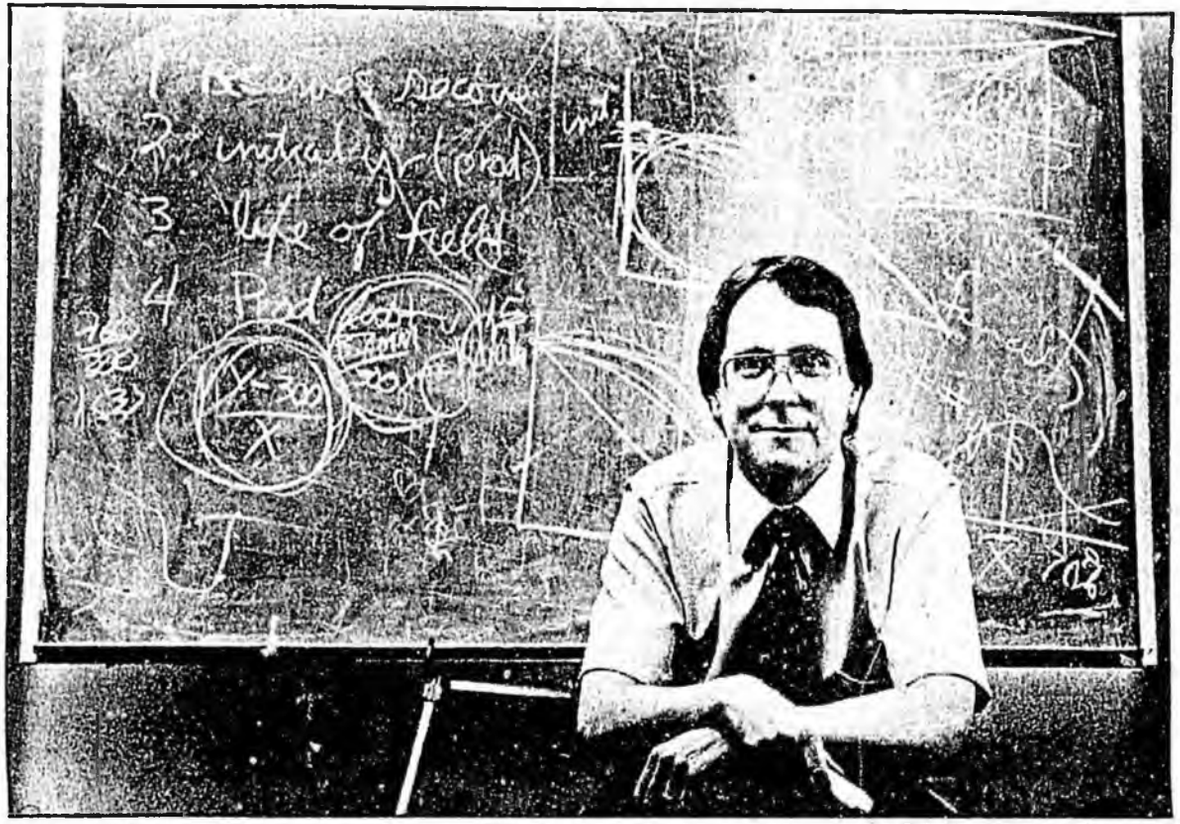
Logsdon said officials had underestimated the number of wells that North Slope producers planned to drill in those years.

Also, oil prices are higher than projected and production rates will be higher than expected, he said in a Feb. 19 memo to state Revenue Commissioner Hugh Malone.

However, state officials also have said that increased royalties to the state because of greater production in large part will offset bigger losses in severance tax revenue from a reduced ELF.

Since July, the ELF has been factored into tax computations on production from Prudhoe Bay, the largest oil field in North America and the source of most of the state's income.

The ELF is based on how much oil is produced from each well. Taxes drop as the number of barrels per well drop, which usually happens when a field declines.



Daily News file photo/Michael Penn

State oil price expert Chuch Logsdon

Logsdon said in the memo that "an aggressive drilling program such as that announced by the Prudhoe producers will keep production at the 1.54 million-barrel-per-day level but will do it with more wells than are currently required. For this reason, the severance tax rate will fall even though Prudhoe production will not."

Based on current assumptions about oil prices, production rates and number of wells for Prudhoe Bay, Logsdon said, his office now is projecting that the cost to the state of the ELF will be $147 million in FY 1988 and $158 million in 1989.

"These estimates are considerably higher than those made last spring when the legislature was considering ELF legislation," he wrote. "The reason is a combination of higher assumed prices, production in FY 1989, and a greater number of wells."

In June, petroleum economists had estimated the cost to the state to be $101 million in FY 1988 and $96 million in FY 1989.

Logsdon said in an interview his staff had underestimated the number of wells to be drilled by about 100. They also used lower oil

See Page B-5, ELF

ELF: State losses from tax program double

Continued from Page B-4

prices in their calculations, he said.

The memo to Malone updates the revenue projections, he said.

It was written partly because of recent announcements by North Slope producers of increased spending and drilling plans and partly because there has been renewed interest by legislators in a House bill that would change the ELF tax program, he said.

"It became apparent we were going to have to explain to somebody a drop in our severance tax estimates for reasons other than our usual price drop," Logsdon said.

reservations by 4 p.m. today

AHFC director to speak

Dr. Ron Lehr, executive director of the Alaska Housing Finance Corp., will be the guest speaker at a Thursday meeting

The Senate Special Committee
Invites you to an ove

Alaska International

Marketing, Tourism & Trade Strate

Senate Special Committee

Senator Rick U

Senator Mitch Abood

Senator Fre

Presentations Schedule

9:00 - 11:30 AM

Bob Coe, President,
Duty Free Shoppers, Alaska Division

Bob Poe, Deputy Commissioner,
Department of Transportation, State of Alaska

Hugh Gellert, Director,
Division of Tourism, State of Alaska

Keith Fernandez, Marketing Director,
Anchorage Convention and Visitors Bureau

For Your Information,

ELF IS WORKING, AND WORKING WELL!!!!

Distributed By
Don Mitchell Addn

Business

Survey reveals extent of ELF impact

Businesses report dramatic rise in jobs, sales since implementation

By Ray Tyson
Times Business Editor

A telephone survey of companies that do business with Alaska's oil industry shows that employment and sales among the companies have risen sharply since June, when the controversial Economic Limit Factor took effect.

Results of the survey conducted by the Alaska Support Industry Alliance clearly indicate the ELF, a state tax incentive designed to encourage more drilling, has contributed to an increase in business among companies that supply goods and services to Alaska's major oil companies.

The governor and Democratic-controlled House want to eliminate the ELF, claiming the so-called tax break is unfair and that the state needs the revenue to balance its budget.

More than 70 percent of the companies responding to the survey conducted March 29 and 30 said they want the ELF to continue, while 96.1 percent support a stable tax climate, Alliance spokesman Bill Webb said.

"We can't say ELF solved all (the problems), but we certainly can say it was a big part of the equation," Webb said.

The Alliance is a non-profit organization representing more than 200 oil, gas and mining companies in Alaska.

Companies included in the survey have employees who work on the North Slope, Webb said. Of the 100 contacted by telephone, 79 responded to the questionnaire.

During the 10 months that ELF has been in effect, the companies reported a total gain of 636 employees, for a 12.8 percent increase. They expect an additional 366 employees by June, for a total of 1,002 jobs, a 20.2 percent increase since the ELF took effect, Webb said.

Of the companies surveyed, 54.4 percent reported an increase in sales; 25.3 percent a decrease; 19 percent no change; and 1.2 percent did not respond. The average increase per company was 22.2 percent.

"Sales were encouragingly up," Webb said.

The average company surveyed has been doing business in Alaska 17.2 years.

"There were few companies under 10 years with a lot in the 25 to 40-year range," Webb said.

Of the 79 respondents, 65.3 percent were incorporated in Alaska, he said.

Had it not been for the tax incentive, Webb said it is unlikely North Slope oil production would have been increased to the current 2.2 million barrels a day.

"If the state didn't have that flow, it would have loss the (additional) royalties and taxes," he said.

"They are winning with the ELF. But it's amazing that they can't see it. I'm surprised with the legislature. Maybe we're guilty. Perhaps we should have done this survey earlier and educated the people."

Office Correspondence

STANDARD
ALASKA PRODUCTION

TO: G. N. Nelson

DATE: February 23, 1988

FROM: T. K. Williams T.K.W.

CC NO:

SUBJECT: Daily News Article on the ELF

YOUR REF:

The following points are offered regarding the article in this morning's Anchorage Daily News (copy attached) saying that effects of the Economic Limit Factor (ELF) on production tax revenue from Prudhoe Bay are nearly $100 million more in FY 88 and 89 than the state had previously estimated. The difference is said to be due to the state's underestimation of the number of producing wells. All other things being equal, the ELF does reduce the effective tax rate as the number of producing wells increases because production from Prudhoe Bay may not increase above the field's maximum efficient rate (MER). A copy of the state memo on which the article is based is also attached.

- Prudhoe Bay is actually in decline -- only the additional production from the new wells that have been drilled and the work on existing wells have prevented current production rates from falling below the MER of 1.5 MMB/D of oil.

- Besides sustaining current levels of production, each new well at Prudhoe Bay adds approximately one million barrels to the field's total recoverable reserves.

- The ELF was intended to prevent fields from being less than fully developed; it provides a positive incentive to drill, and it has succeeded: over $300 million (most of which will flow directly into the Alaskan economy) will be spent in drilling new wells fieldwide during this year and next.

- As the article acknowledges, the tax effects are largely offset by increased royalty revenues to the state as the result of higher current production.

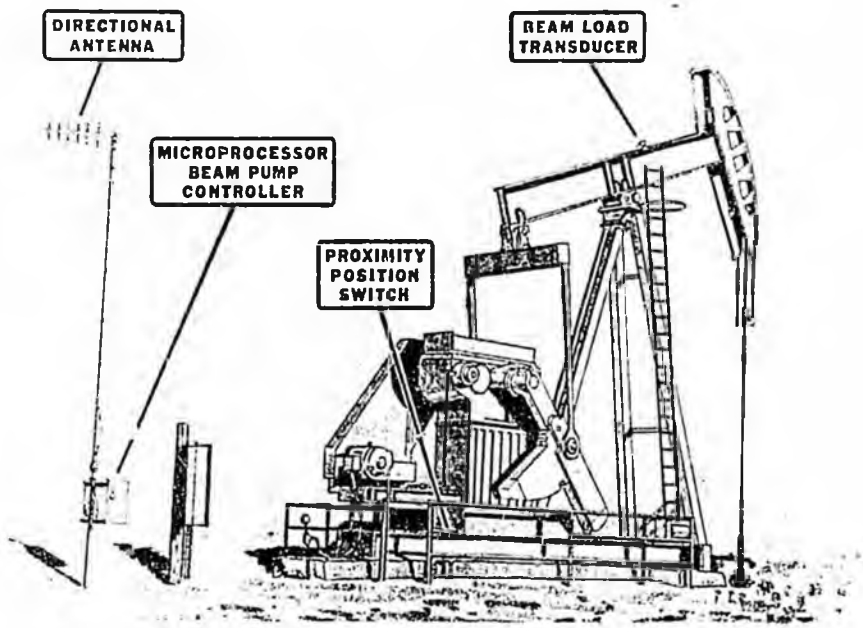
- No unnecessary wells are being drilled simply for the sake of the ELF benefit -- under the ELF the tax saving from one additional well is approximately $0.2 million a year for Prudhoe Bay (based on the state's current assumptions as to well count and prices during FY 89), while the drilling cost is over 10 times greater.

- Even with the ELF, the effective production tax rate for Prudhoe Bay is the second highest in the United States (approximately 12.26% versus Louisiana's 12.5% -- Texas is 4.6%).

Attachments

O+G Jnl
1987 Data Book

Production/Enhanced Recovery Report



Artist sketch of remote pumping well. Transducer on walking beam is connected by cable to microprocessor/UART modem for transmission of data via radio to host computer.

Increased rate of EOR brightens outlook

Jim Leonard
Production Editor

Continuing its growing presence, enhanced oil recovery (EOR) now contributes about 604,800 bbl to total U.S. daily crude oil production (Table 1) from 512 reported projects (Table 2). The 1986 OGJ survey reveals another 108 domestic EOR projects are targeted to commence over the next 1-2 years (Table A).

Total reported EOR projects have increased 37.3% over the 1984 survey, and total reported daily production has increased 31.2%. EOR now represents over 6.8% of tota domestic crude production. Following is a closer look at activity in the various EOR categories and some technology highlights.

Thermal

The OGJ survey reveals 201 active U.S. thermal projects produce nearly 480,000 b/d. In terms of market share, the steam process alone contributes 77.5% to total domestic EOR of 604,000 b/d.

Of course the magnitude of heavy oil reserves, improving technology, and maturity of the larger projects assure production dominance of the steam injection process for years to come.

Its increasing success over the past decade in terms of productivity and number of projects indicates its status as our most mature EOR technology.

Kern County. The focal point of domestic thermal operations is still Kern County, California, where "huff and puff" gave birth to today's steam drive technology.

As a project matures, production capacity increases in most cases. Texaco's (formerly Getty's) Kern River field reports nearly 98,500 b/d of EOR as this steam project approaches maturity. The 1984 survey reported 95,000 b/d.

Shell Oil Co.'s South Belridge field steam project produced 70,000 b/d of EOR when OGJ published the results of its 1984 survey. Our 1986 survey reports this project's EOR production of 13 gravity oil at 89,000 b/d. And since Shell has no plans to reduce its commitment to research, improved technology will be followed by improved oil recovery.

Steam generation/cogeneration. Perhaps one of the biggest incentives California oil operators could have for expansion of thermal EOR is to have access to reliable, long term supplies of out-of-state natural gas for steam generation and cogeneration facilities.

Conversion of oil-fired steam generators to gas-fired would significantly increase EOR production as well as minimize environmental and pollution concerns.

There is a struggle under way for the California thermal EOR/cogeneration gas market. New intrastate contract carriage rates and terms give utilities an edge to meet the market with existing systems.

But producers still back interstate lines to avoid the risk of supply interruptibility.

Gas projects

Total gas projects have increased a healthy 23.8% and production has increased 30.4% to over 108,000 b/d. These figures are all the more impressive considering that an unexpected number of operators declined to participate in the survey.

Permian basin. Although mobility/confinement and reservoir heterogeneity present giant challenges, operators have bet over $2 billion that the CO_2 miscible process will succeed in various fields throughout the Permian Basin.

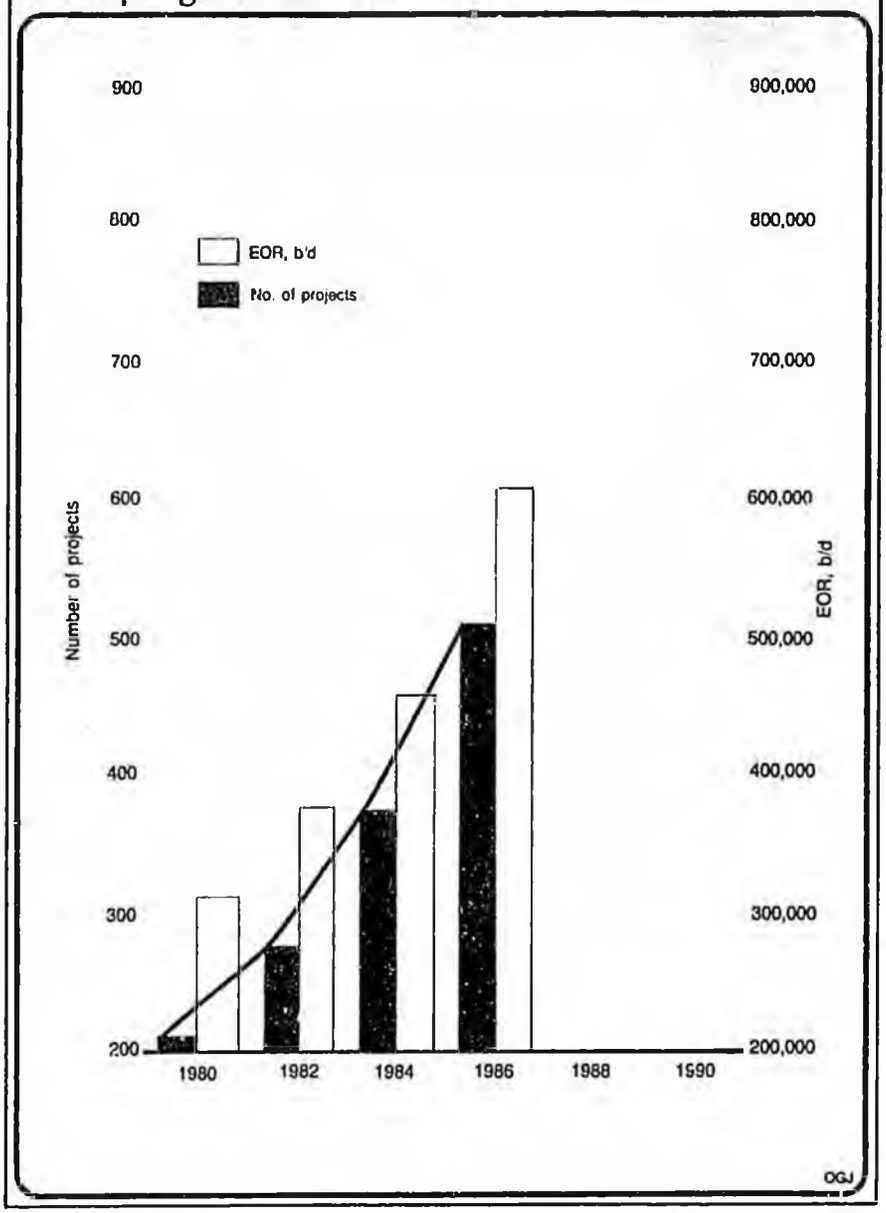
The high mobility of injected CO_2 has been a major contributing cause for past project failure, but research has identified foams and gels which have proved economically successful for mobility control and sweep efficiency.

Meanwhile their use has also pointed to the need for a more detailed description of reservoir neterogeneity when evaluating for EOR via the CO_2 process.

The lag time between implementation and reservoir response indicates that the Permian Basin will not make its most significant contribution to EOR until the 1990s.

Fig. 1

EOR progress in U.S.



Prudhoe Bay. Arco's enriched hydrocarbon miscible project on the east side of Prudhoe Bay field has been in operation for a little over 2 years.

Although none of the current 65,000 b/d is classified as EOR (lag time), this project holds special significance.

As the project matures, the degree of success measured here in terms of EOR barrels to total production will suggest the magnitude of U.S. reserve potential in the Arctic region from proved reservoirs.

CO_2 immiscible. The number of CO_2 immiscible projects jumped 55.6% since out 1984 survey; however, their total EOR output is still small because most of the projects are relatively new.

Note that Texaco plans 27 new immiscible projects in South Louisiana for 1986-87.

Chemical processes

Gains in the polymer process are impressive in terms of production and number of projects. Production is up 49.7% to over 15,300 b/d, and number of projects increased to 178—up 67.9%. Alkaline and micellar-polymer projects declined both in number of projects and EOR production.

Micellar-polymer decline. The micellar-polymer (surfactant-polymer) flood process is complex, not thoroughly understood, prohibitively expensive, and requires a massive infusion of technological research.

Ordinarily the surfactant slug consists of petroleum sulfonates mixed with other chemicals and water. The purpose of the slug is to lower interfacial tension and displace residual oil that cannot be displaced by water alone.

The surfactant slug is displaced

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oil policy

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when our state revenues are in

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ine by 1987. Today it is clear that
ate, quite profitably, if the ELF is
refused to act on an oil tax bill.
use of Representatives have both participated in public hearings to examine the ELF – the economic limit factor which lowers the tax rate for marginally producing oil fields. Last year the House passed a bill, introduced at the Governor's request, that did two important things:

* prevented large tax breaks for giant oil fields like Prudhoe and Kuparuk, where tax incentives aren't needed, and

* provided a new tax incentive for production from every other known field in Alaska, including marginal fields such as Endicott, Lisburne, and Milne Point. The latter was shut down in 1987 because it was uneconomic.

This approach makes sense. *Forbes* magazine recently reported that Atlantic Richfield is one of the most profitable oil companies in the world – and guess where the company gets 67 percent of its oil? From Kuparuk and Prudhoe Bay. Tax breaks are simply unnecessary for these oil fields.

The chief executive of Atlantic Richfield recently boasted that the company's profits are the "best in the industry." The company has also publicly reported that it increased its Alaska production while reducing production from other sources. These aren't the actions of a company producing from a marginal property and suffering economically.

Meanwhile, British Petroleum last year completed its acquisition of Standard Oil. Now it owns 100% of that company, which gets 98% of its oil production from Alaska.

And, Kuwait's national oil company has purchased more than 20% of BP. These aren't the actions of corporations worried about the profitability and potential of Alaska oil and gas production.

Some industry representatives claim that the tax break has encouraged more drilling on the North Slope. No proof has been offered that the new drilling is providing Alaskans extra jobs or that the long-term production of Prudhoe and Kuparuk is being increased. Instead, we might just be seeing a more rapid depletion of oil and gas reserves.

Industry representatives also talk about "tax stability." They imply that there was a compact between the 1981 Legislature and the oil and gas industry to install a tax break in 1987. But, they neglect to mention that there were other issues – legislative instability, legal battles, and inaccurate production projections – that influenced the 1981 Legislature. At that time, then Governor Hammond said "as for the possible revenue effects in 1988 and beyond, I have full confidence in the ability of the Legislature to deal at that time with whatever is required to retain the state's 'fair share' of our oil wealth."

Clearly, the time has arrived for the legislature to take such action. Today's legislators have to deal with today's problems. With our sagging economy, people losing jobs and homes, and every district in the state needing road repairs, money for schools, hospitals and a host of other public necessities – we need revenues to fund these worthy projects. Where do we get this money?

Naturally, the oil industry supports tax changes when those changes benefit the industry. In 1981 the industry came to the Legislature (in a time of oil price inflation and under pressure of a lawsuit that questioned the state's tax structure) and asked for tax breaks. The Legislature responded by instituting a new "unitary" tax system. Since then, Alaskans have foregone billions of dollars worth of revenues that would have been collected under the former system.

Alaskans have a clear choice here: shall we continue to forfeit tax revenues that could be put to many purposes around the state? Or, shall we go ahead and collect taxes that won't harm the industry and will bring us back to where we stood a year ago?

I strongly support Governor Cowper's effort to rescind the oil tax break. I'm glad that the House and Governor are working together on a tax system that will truly serve the fair and equitable interests of all Alaska.

(Cliff Davidson represents Kodiak in the State House and is a member of the House Resources Committee.)

Today's Tidbit

SIGN OF CRIME

SEATTLE – A former preschool worker has been ordered to wear a sign around her neck about her sex offenses after she pleaded guilty to misdemeanor charges of sexually assaulting two girls.

BURGER SLIP

LONDON – A police officer who was given the slip by a discarded hamburger has won a damage claim against the operators of the London subway.

High Court Judge Alan Lipfriend ruled that London Regional Transport was negligent in failing to clear up potentially dangerous litter at Earls Court station. The amount of damages will be assessed later.

Graham Blakely, 26, alleged he was chasing pickpockets in August 1982 when he leaped down some stairs and skidded on the remains of a hamburger and its container, breaking his right leg.

ABOMINABLE SNOWMAN

A British mountain climber set off for the Himalayas to find out whether the Abominable Snowman is myth or monster.

Chris Bonington intends to return to the 23,237-foot Menglungtse, where last year he found footprints from an unidentified creature on a failed attempt to climb the mountain.

"It would be fantastic if we could come back with some proof," he said.

Bonington and a five-man team discovered 7-inch-by-4-inch footprints 16,000 feet up the mountain last year. Periodic sightings of the creature, also known as the yeti, have been reported for decades.

130-POUND TUMOR

FORT WORTH, Texas – A woman who feared to seek medical help as a tumor swelled in her abdomen eventually doubled her weight before having the 130-pound malignant growth removed, her doctor said Wednesday.

In the three years preceding her operation, Barbara Louise Jones, 55, who is 5-foot-1 1/2, said she at first thought she was gaining weight, then realized something was seriously wrong.

But Miss Jones said she delayed seeing a doctor because she feared she would suffer the same type of painful death as her mother.

BLOOM COUNTY **by Berke Breathed**

Needs to know { road ATLAS
BAJA maps
AK Ferry schedule -
truck shippers - $/how }

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4) Gary Fisher re sail?
5) deck storage on trip
6) sewing apparatus.
7)

- lv truck? -

THE FOLLOWING DOCUMENT HAS

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FILE

JUNEAU REPORT

The **Juneau Report** is published by Standard Alaska Production Company (SAPC) Government Affairs Department to provide an overview of issues and legislation as they relate to the petroleum industry. Opinions of authors expressed here do not necessarily reflect the opinions of the company. The **Juneau Report** is edited by Jim Palmer. Inquiries should be directed to him or Bob Straub, SAPC Government Affairs, 564-5403 or 564-5537.

In This Issue:

Education: Who pays . . . Local or state government

Alaska's scattered population poses equity problems

By Mike Bradner

Like many other things in Alaska during these uncertain times, Alaska's schools are also at a "crossroads." We have a number of paths we can take, each leading to different futures, and these futures may not be easy to change should we "not like" them when we get there. Despite our many problems, Alaska today probably has one of the finest school systems in the free world. It has the best paid teachers, and it also probably has the best teachers. But we are now in a time when our assets of education may be under fire — threatened by both the funding turmoil of falling revenues, and by mandated changes in "how" we fund our schools.

Certainly falling revenues require change. The political realities of "available dollars" do not exempt any state policy arena, including education. We all know about slipping oil revenues, but there is also a fundamental change brewing in the structure of funding schools — in what we call our School Foundation Act.

The changes proposed for Alaska's School Foundation Act are prompted both by unhappiness within Alaska over the division of educational funds and the equity of delivery and by the insistence of our federal overseer — the federal government. The two interests, while founded on concern for equity, may be seeking different things.

The Search For "Equity"

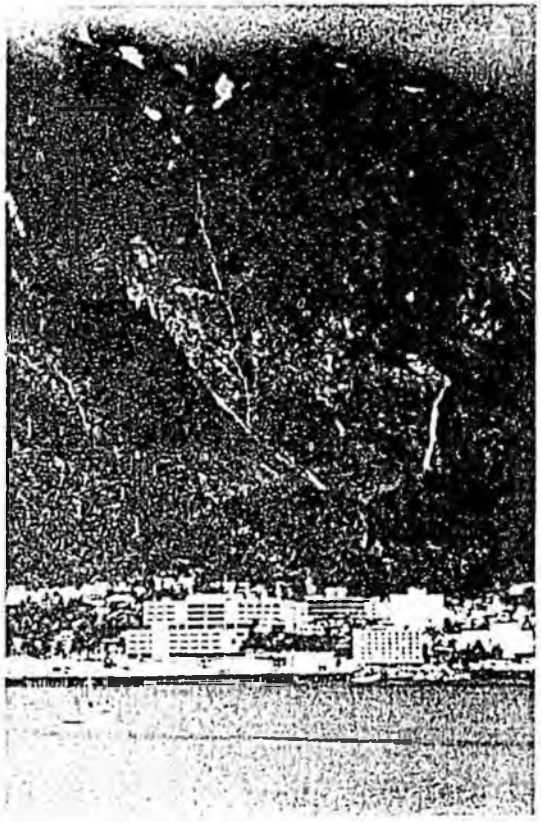
Funding education in Alaska is far from simple. Our complexity is not in masses of people, as might be the case elsewhere, but in our lack of "people mass." Providing a system of schools across the large landmass that is Alaska, with large urban centers contrasted by many small and isolated pockets of population, while preserving local control and education in home communities, presents an equation that really does defy cost-efficient operation. Under Alaska conditions meeting goals of educational "equity," especially goals focusing on statistical criteria, becomes complex, convoluted, and to some might often seem to result in contradictions.

In its convoluted and contradictory twist, the new approach to equity will mean that some of us, who live in healthier tax base jursidictions, will not be allowed to provide a more expensive education for our children, even if we can afford it.

The club behind the federalized side of reforming Alaska school funding is money. The state gets about $70 million annually in federal PL-874 funds, which are keyed to students whose parents either work in federal tax exempt facilities or who live on federal lands. The state could lose these funds.

The "localized" concern revolves around "what ' we

The Juneau Report



The **Juneau Report** is published by Standard Alaska Production Company (SAPC) Government Affairs Department to provide an overview of issues and legislation as they relate to the petroleum industry. Opinions of authors expressed here do not necessarily reflect the opinions of the company. The **Juneau Report** is edited by Jim Palmer and Frank Baker. Inquiries should be directed to SAPC Government and Public Affairs 564-5403.

In this issue:

"ELF" debate intensifies

Governor, House leaders push to end drilling incentive

Hiking oil taxes to increase state budget?

To fill a state revenue "gap" created largely by a hefty increase in proposed state spending, Governor Steve Cowper and the leadership of the State House of Representatives are pushing for a tax increase on the oil industry that would raise taxes on the Prudhoe Bay oilfield.

That change is being resisted by the leadership of the State Senate, who argue that a stable taxation policy is needed now to encourage more oil development and jobs on the North Slope.

Governor Cowper and the House Democratic leadership want to change the Economic Limit Factor, an incentive formula in the State oil and gas severance tax, in a way that essentially eliminates a long-scheduled reduction in severance tax paid on Prudhoe production that took effect last year.

The ELF encourages continued production of declining, marginal wells by lowering the tax on those wells. It is widely credited, for example, for keeping marginal Cook Inlet oil platforms operating, preserving jobs and producing oil that otherwise would have been lost.

But it is also a major incentive for drilling more development wells in large fields like Prudhoe and Kuparuk on the North Slope, which results in significant additions to oil reserves. It is estimated that each new development well

Last year, the ELF incentive applied to Prudhoe for the first time since 1981, a change that had been provided for in state law. The rate of tax on Prudhoe dropped from 15% of wellhead value of the oil to about 12.5%. ELF has always applied to other oilfields in the state since it was

Continued on page 6

"ELF" issue at a glance:

- **1977: Economic Limit Factor enacted as development incentive for oilfields, *including Prudhoe Bay.***
- **1981: Prudhoe severance tax raised from 12.5% to 15%; ELF incentive denied to Prudhoe, to be reinstated in 1987.**
- **1987: Governor proposes and House passes legislation increasing severance taxes on the Prudhoe Bay and Kuparuk fields by changing the ELF formula.**
- **1988: Governor, House urge passage of ELF repeal to help finance 13% increase in State budget**

Prudhoe most productive U.S. oilfield

The Associated Press

HOUSTON — The East Texas oil field, which has been producing oil since 1930, is losing its distinction as the most prolific U.S. oil producer now that the Prudhoe Bay oil field on the North Slope of Alaska has pumped its 5 billionth barrel.

Houston-based Standard Oil Production Co., which owns 50.68 percent of the oil and 13.83 percent of the natural gas at Prudhoe Bay, said Monday the Alaska field production this month surpassed the 4.9 billion barrels of crude oil and liquid hydrocarbons pumped from East Texas.

The field, 1,300 miles from the North Pole and 250 miles north of the Arctic Circle, is the 18th largest in the world in terms of recoverable resources. It was discovered in 1968 and is estimated to be about half depleted. Although it contains an additional 13 billion barrels, technology does not now exist to remove the oil.

East Texas continues to produce oil but is not expected to reach the 5-billion-barrel mark until next year.

The Prudhoe Bay production, over 10 years, has provided Alaska about $23.4 billion in royalties and taxes, which Standard Oil says it the equivalent of about $50,000 for each Alaska citizen.

The 250-square-mile Alaska field, which started producing oil into the trans-Alaskan pipeline June 20, 1977, accounts daily for about 20 percent of all oil production in the United States.

"In the face of mounting foreign imports of all kinds, the value of the oil that's been produced so far accounts for approximately $100 billion on the plus side of this country's balance of payments' ledger," William J. Johnson, Standard Oil Production president, said.

Standard Oil Production is the wholly-owned exploration and production subsidiary of Cleveland-based Standard Oil Co. which owns 50.68 percent of the oil and 13.83 percent of the natural gas at Prudhoe Bay. Other major owners are Exxon Corp. and Arco.

Standard said it expected the Prudhoe Bay operation would begin a natural decline of 10 to 12 percent per year beginning late next year, four years later than engineers originally thought.

"Standard Oil and its partners have successfully pushed back the onset of decline as we became more knowledgeable about the field's producing characteristics and what could be done to sustain high production rates," Johnson said. "But developing new technologies for maximum oil recovery depends to a large extent on stable oil prices and other incentives to spend the large sums of capital necessary for future development."

Oil from Prudhoe Bay averages 1.6 million barrels a day, moves through the 800-mile trans-Alaska pipeline to Valdez on the south coast of Alaska, where tankers move it to the Lower 48 states for refining.

5/13/87 WSJ p. 43

5/11/87 p 30

CREDIT RATINGS

Arco Debt Ratings On $8.7 Billion Raised by S&P

By a WALL STREET JOURNAL Staff Reporter

NEW YORK—Standard & Poor's Corp. said it raised ratings on about $8.7 billion of debt of Atlantic Richfield Co. and certain units.

S&P upgraded senior debt oustanding of the Los Angeles-based oil company, its Arco Pipeline Co. and Atlantic Richfield Overseas Finance N.V. units and of Sinclair Oil Co., a former unit that has been disbanded, to single-A-plus from single-A.

The rating concern also upgraded Arco's preference stock to single-A-plus from single-A and raised ratings on commercial paper of the parent and its Arco Credit Corp. and Kuparuk Transportation Capital Corp. units to A-1-plus from A-1. Senior debt outstanding of Anaconda Co., another former unit that has been disbanded, was upgraded to single-A-plus from single-A.

Despite weakened market conditions, S&P said, Arco's operating strengths in several businesses and an asset-sale program at the company help its financial prospects.

A significant reduction in Arco's debt leverage also is expected, S&P said, because of continued strong cash flow and lower capital spending, and the company could get a boost from firming oil prices. Arco's liquidity is strong, S&P said, citing cash and marketable securities of $2.4 billion, equal to 28% of the company's debt as of the end of 1986.

* * *

S NEWS WSJ

Arco Unit to Appoint Heinze as President; Bond Retiring Early

By a WALL STREET JOURNAL Staff Reporter

LOS ANGELES—Atlantic Richfield Co. said Harold C. Heinze will be appointed president of the Arco Transportation Co. unit, succeeding Hiram E. Bond, who will take early retirement.

Mr. Heinze, 44 years old, currently is president of the Arco Alaska Inc. unit, which accounts for more than two-thirds of the Los Angeles-based parent's domestic crude oil production. He has held the position since 1983 and is credited with improving efficiencies in the Alaska unit.

Among the former heads of Arco's transportation unit is Lodwrick M. Cook, now the company's chairman and chief executive officer.

Mr. Bond, 62, has headed the transportation operations since 1981. The unit operates the company's tankers and domestic pipeline interests.

Succeeding Mr. Heinze as president of the Arco Alaska unit will be William E. Wade Jr. Mr. Wade, 44, currently is Arco's vice president of corporate planning.

Separately, Arco said Mike R. Bowlin will be appointed senior vice president, international oil and gas acquisitions, a new post. The company said the 44-year-old Mr. Bowlin will assess international exploration and acquisition opportunities, suggesting that Arco is joining other U.S. oil companies interested in expanding foreign oil operations.

"Growth in the international arena is a major strategy for Arco," said Robert E. Wycoff, president of the company. Foreign locations are thought to offer better opportunities for new oil finds than U.S. acreage, which is the most thoroughly explored in the world. Mr. Bowlin currently is president of Arco Coal Co.

The appointments are effective July 1, Arco said.

letters from the people

The Daily News welcomes letters on issues of public interest. To accommodate as many writers as possible, letters should be limited to 250 words and accompanied by a daytime telephone number for verification. (Telephone numbers will not be printed.) Unsigned letters will not be published; the News reserves the right to edit letters for clarity, length, taste and libel. Address letters to "Letters from the People," Anchorage Daily News, P.O. Box 14-9001, Anchorage, AK. 99514-9001.

❑ Editor's Note: The letters on this page are additional replies to last week's People's Forum question "Should the state legislature repeal the ELF tax break?"

Issue should come to a vote

The Economic Limit Factor bill passed by the House and currently hidden in Senate committees is an important bill for Alaskans. I can't understand why our senators are afraid to bring this bill onto the Senate floor.

I personally wish to see the Senate act responsibly. Bring the ELF on the floor for debate. I support revising the ELF law which has obviously been a benefit to high oil output fields like Prudhoe Bay and a detriment to our public interests.

I hope others who share this concern will contact their senators. I am sure your senator will want to be held accountable for his or her actions.

— William D. Bobrick

Revision is a must

The public ought to demand repeal of ELF since the enactment of this legislation was designed to spur production in marginal oil fields, and works well to create billions for the industry, add hundreds of millions to state tax coffers, and provided jobs to workers and allied industries.

Having spent several years as an accountant for a major oil company I was amazed at the dealings between big oil lobbyists and our political creatures in Juneau and Washington, D.C. The accounting practices instituted in the 1979 and 1982 by our state, blessed by these legislative creatures and their masters, would require a regiment of Havard-trained tax lawyers to clarify and untangle — the higher courts in the land may never be able to make sound decisions due to lack of wisdom. Those actions, and along with those to follow, only enrich the legal firms at the expense of the public. After all, isn't this the main purpose of most legislation?

Come on, Alaskans, let's climb out of our caves and spend a quarter or two, and throw some "push and shove" behind House Speaker Ben "Hound Dog" Grussendorf and our "lawyer" Gov. Steve Cowper on this ELF matter. Revision of the Economic Limit Factor oil tax break is a must and those who oppose it must be replaced.

Jack McCain

power to tax is the power to destroy. Unless we decide to sacrifice the oil industry on the altar of state spending, our elected officials will have to cut government back sooner or later, and they should start doing it now. Leave the ELF alone.

— Thomas K. Williams

Oil companies need profits

worth hundreds of millions of dollars to the oil companies every year. It may cost Alaska funding for schools, health care, roads and development projects but the oil companies like the ELF just the way it is. Which is why that ethereal chanting is heard throughout the capital — "stable taxation, stable taxation, stable taxation." There's nothing quite like the fervor of the converted.

— Dick Monkmar

I admire the perseverance Sen. Jan Faiks portrays on the ELF issue. The oil companies employ the most educated, experienced people to carry on their operations. Every little detail is exactly by law. They employ the best lawyers. Due to the high cost of drilling and the chance of a dry hole with loss of much money, they must have high profits to carry on further exploration. They are not soaking the people like some think!

— Boyd W. Haynes

Oil companies flip-flopped

The oil companies claim that the ELF tax loophole must not be closed, despite the hundreds of millions of dollars it costs the people of Alaska every year, because the industry needs "stable taxation." The phrase "stable taxation" has become the catchword of the oil lobbyists down here in Juneau. Over and over it is chanted, repeated with true religious fervor again and again and again, until the eyes begin to glaze over.

It's kind of funny to think back a few years, when Alaska had a "stable tax" for the oil industry. It was called separate accounting. We don't have it any more because these devotees of stability, the oil companies, sued the state. The lawsuit eventually was decided in Alaska's favor, but in the meantime the 1981 legislature, with a little prompting from the oil companies, changed the tax. But the oil companies didn't complain then about "unstable taxation." Probably the fact that the changes cut their tax bill substantially had something to do with the silence.

One of the little loopholes passed in 1981 was the ELF, a complicated gem of a tax formula which puts Prudhoe Bay into the "marginal field" category. This legal fiction is

Tax climate should be stable

Definitely no! The legislature made a commitment to the oil industry through ELF legislation and even though we are currently experiencing tough fiscal times this commitment must be met. To create and maintain a positive environment for doing business in Alaska we need an equitable, reasonable and stable tax climate. This represents good public policy by stimulating further oil exploration and production with incentives such as ELF.

In weighing the pros and cons of ELF it is essential that we view our dilemma in its proper perspective. The crux of the issue lies not in a projected revenue shortfall but more in state spending and particularly the size of the operating budget. Those of us in the business arena do not enjoy the luxury of budgeting beyond our income and neither should state government.

In addressing ELF the legislature will have an opportunity to blend credibility with fiscal responsibility. Let's hope good judgment prevails!

— Dale R. Lindsey
Harbor Enterprises Inc.

Don't change rules in mid-stream

The ELF, as applied to Alaska's severance tax on oil, performs as it was designed to do: It encourages continued production of marginal wells and new investment in oil field development. There has been abundant rhetoric recounting the history of Alaska's oil field taxation, and the fact that Alaska now has the highest oil taxes of any state. Additionally, Alaska's per

[illegible] revenue from killing ELF will fund growth in our bloated state government. Revenue forecasts indicate that we can sustain $1.6 billion spending indefinitely, yet Cowper's proposed budget is almost $2.3 billion.

Poll after poll shows that Alaskans want government spending cut as the first means of dealing with shortfalls. I'm sick of seeing the private sector get bled to fund RATNET, power cost equalization, four times the national average of number state workers, overtime for 40-hour workweeks, multimillion-dollar Bush schools for a handful of students, 115 state employees out-earning Cowper ($74,000), scholarships for Outside (and foreign) colleges for athletes when, on some teams, more than 70 percent fail to graduate.

— Jerry Foster

Tax stability important

Every local family or business has income and expenses which need to be budgeted. Although all of us have a multitude of expenses, most of us have several that are both long-term and significant in our total budget planning: i.e., house mortgage, auto loan, business loan, etc. On accepting any of these financial commitments we did so with an assumed fixed set of conditions. What if midway through a mortgage or auto loan, the rules were changed and significant unplanned fee(s) or payment structure was mandated? This action would cause hardships to the party involved.

This is no different from changing the ELF on the oil industry. They have a budget much like any other business or family budget, except much larger, high risk and long-term in nature. Support a stable tax position.

— Karl Privoznik

WSJ 5/11/87 p53

An Appraisal: Oil Shares Regain Their Allure, at Least Temporarily

ABREAST OF THE MARKET

By Beatrice E. Garcia

While mergers, acquisitions and speculation fueled periodic wild demand for some oil-industry stocks in the past six years, many money managers were steadily decreasing their portfolio holdings of energy issues.

That has abruptly changed, at least temporarily, thrusting the group into the market leadership. Not only are some analysts and money managers warming up to the group again, but a few market strategists are even recommending greater weight for energy stocks in diversified investment portfolios.

"We're going to see some leadership from this group," says John Connolly, a portfolio strategist at Dean Witter Reynolds Inc. in New York.

Indeed, that has already happened. According to Indata, a portfolio-monitoring service in Southport, Conn., energy stocks were the best-performing group in the stock market in the 52 weeks ended April 30, gaining nearly 49%.

And during the first four months of this year, the group rose almost 28%, an advance second only to technology stocks, which rose a little more than 36%. The figures are measures of total return, including capital appreciation and dividend reinvestment.

Gains of some individual energy issues this year are even more impressive. For instance, Atlantic Richfield has gained 54%, closing Friday at 92¾.

In deciding how much money to invest in which sectors of the stock market, portfolio managers usually use the Standard & Poor's 500-stock index as a benchmark. The index rose a little more than 19% in the four months ended April 30.

About 12% of the S&P index is made up of energy stocks, including domestic and international oil producers, oil-related supply and construction company stocks as well as coal, gas and pipeline issues.

But, says William T. Kennedy, a pension-fund consultant in Atlanta, the survey of 1,500 portfolios monitored by Indata shows just 8.8% of institutional portfolios are invested in the energy sector, just slightly more than the 8.3% they had in energy at the end of last year.

"Money managers have been underweighted in the best-performing sector of the market for the past 52 weeks," says Mr. Kennedy.

After watching the price of crude oil drop below $10 a barrel last year, few money managers were eager to make big bets on the stocks. And the Organization of Petroleum Exporting Countries agreement last fall to restrict production was greeted with a lot of skepticism by the market.

Now there is growing conviction that OPEC has been able to control production and may even be able to raise prices at its meeting late next month. The fundamentals for energy companies have stopped deteriorating and are starting slowly to improve, some analysts say.

Meanwhile, growing interest among portfolio managers in companies that benefit from a more robust economy and somewhat higher inflation has benefited energy issues along with the other commodity-based stocks.

"Frankly, I'm amazed at the strength in the oil sector. It has to be institutional buying that is pushing them up to full valuation levels," says David Dreman, a managing partner of Dreman & Embry Investment Management in New York. His concern is that many of the oil-producing and oil-service stocks are selling at "pretty high prices relative to this year's earnings."

Other analysts say that current prices for these stocks already assume higher prices for oil reserves.

But, Mr. Dreman says, OPEC's ability to raise crude prices is still a big uncertainty. He started the year with 12% of his portfolio invested in energy stocks but has reduced that portion to 9% in the past two weeks because of his concern about the outlook for the companies' earnings.

Dean Witter's Mr. Connolly is more sanguine about the group because he believes the risk in owning in oil stocks "is asymetrical."

It wouldn't be surprising if crude oil prices decline 10% from current levels in the weeks ahead, because demand for petroleum products typically slows a bit in spring, he says. However, if oil's price rises 10%, "we could have a stampede into these stocks" because they are still under-owned by institutions, he says.

Mitzi Malevich, a money manager with IDS Advisory Group in Minneapolis, broke away from the pack last year when she started buying the shares of oil producers. Ms. Malevich added oil-service companies to her portfolios in January.

Although she realizes that it is hard to make a case for owning many of these stocks on basis of higher earnings, especially for oil drillers, she believes a stronger economy will give the issues a boost.

Friday's Market Activity

Stock prices declined in sluggish trading as investors mostly ignored news of an April unemployment drop, firmer bond prices and a higher dollar.

The Dow Jones Industrial Average fell 12.36 to 2322.30. The Standard & Poor's 500-stock index fared worse, falling 1.34 to 293.37, even though decliners on the New York Stock Exchange barely edged gainers, 832 to 739.

Despite the economic news, "there's a fair amount of jitteriness" about the directions of the dollar and interest rates, said Larry Greenwald, co-head of the equity trading desk at Sanford C. Bernstein & Co.

VOLUME SUMMARY

Trading totals for the week ended May 8, 1987.

	Week 1987	Since January 1 1987	Since January 1 1986
NYSE composite	906,617,310	16,488,943,208	15,623,942,433
Warrants	2,810,300	55,666,840	85,621,560
NYSE	1,046,631,280	19,287,716,590	13,133,094,263
Warrants	2,822,300	57,865,140	84,476,400
Nasdaq OTC	730,072,600	13,501,226,357	10,806,266,300
AMEX composite	63,044,610	1,495,220,040	1,390,942,465
AMEX	54,350,000	1,306,420,000	1,192,660,000

5 May 87

Unocal Posts 14% Drop in Net For 1st Quarter

By Frederick Rose
Staff Reporter of The Wall Street Journal

LOS ANGELES—Unocal Corp. posted a 14% drop in first-quarter earnings, citing lower prices for crude oil and natural gas.

Net income in the quarter totaled $60.7 million, or 52 cents a share, compared with year-earlier profit of $70.2 million, or 60 cents a share.

The latest quarter includes a $7 million after-tax gain from the previously undisclosed sale of a 2.5% interest in the Veslefrikk Field, offshore Norway, and a $7 million gain on a settlement relating to windfall profit tax payments for 1980.

A company spokesman said the February sale of Unocal's oil-field interest hadn't been disclosed "because it wasn't material." The holding was sold to the Swedish national oil company, Unocal officials said. Unocal currently has a 20% interest in the field.

The 1986 first-quarter profit included $21 million from the reversal of an earlier provision for possible refunds related to natural gas sales. Unocal didn't disclose this nonrecurring item when it reported results for the quarter a year ago. That, the spokesman said, "was a management decision."

The latest-quarter profit also reflected a 36% overall tax rate, down from a rate of 55% a year earlier.

Revenue in the latest quarter fell 9.6%, to $2.06 billion from $2.28 billion a year earlier.

Daily production of crude oil and gas condensate averaged 241,200 barrels, off 7% from 259,400 barrels a year earlier. Natural gas production averaged 1.17 billion cubic feet a day, up 14% from 1.03 billion cubic feet a year earlier. Sales of refined petroleum products averaged 462,500 barrels a day, up 16% from 399,800 barrels a year earlier.

Separately, the Los Angeles-based oil company's chairman and chief executive officer, Fred L. Hartley, said at the annual meeting that Unocal doesn't plan further distributions of partnership units in its 95%-owned Union Exploration Partners Ltd. The master limited partnership was created in 1985 during Unocal's battle to fend off a takeover by Mesa Petroleum Co., its chairman and chief executive, T. Boone Pickens Jr., and other investors.

In composite trading yesterday on the New York stock Exchange, Unocal closed at $38, up 50 cents, while Union Exploration closed at $18.75.

Unocal originally said it planned quarterly distributions of units to Unocal shareholders as part of its payout to holders. Subsequently, the company indicated that it would undertake semi-annual distributions of units. To date, it has made only one distribution, in February 1986. Last June, it suspended distributions indefinitely.

Mr. Hartley said Unocal would continue to make investments in Union Exploration Partners, suggesting that the public holding will be diminished.

Shareholders rejected a proposal by investment analyst Kurt Wulff calling for Unocal to submit for shareholder approval any so-called standstill agreements reached with large holders in the company. Such an agreement—typically requiring a holder to agree to limit stock purchases and to vote stock with management—was reached with Mesa Petroleum and Mr. Pickens when Mesa withdrew its takeover bid.

Mr. Wulff has supported measures to increase direct shareholder participation at a number of major oil companies. His proposal at Unocal was approved by about 20.2 million shares, or 19% of those voted, a strong showing for a shareholder measure opposed by company management. Unocal has about 116.4 million shares outstanding.

On another matter, the 70-year-old Mr. Hartley sidestepped a shareholder's inquiry about whether he had any plans to retire soon. Mr. Hartley, who has led Unocal for more than two decades, said, "I make myself available to the board of directors and they can make the decision any time."

ELF: Tax changes on Prudhoe Bay oil production to begin on Saturday

By CHUCK KLEESCHULTE
THE JUNEAU EMPIRE

On Saturday, the 10th anniversary of the flow of oil through the trans-Alaska oil pipeline, there will be parties on the North Slope celebrating the opening of the 800-mile-long ribbon of steel.

There also may be parties in some oil company boardrooms. For on the same day, the Alaska oil industry will see its effective tax burden from Prudhoe Bay production fall by about $87 million for the coming year and by $587 million over the next 13 years, based on this spring's estimates of oil prices.

That is unless Gov. Steve Cowper gets his way.

Cowper continues to ponder whether to include proposed changes to the state's severance tax structure on Prudhoe Bay oil producers – the so-called economic limit factor (ELF) in the special session called for July 1. Whether he does depends in large part on whether there is a willingness to do so in the state Senate, which has in the past, opposed changes in the ELF.

By changing the ELF the state would repeal either six-year-old tax breaks or tax incentives for the oil industry – depending upon your viewpoint – tax changes that just now are going into effect. By doing so it would bring in $110 million more than current estimates in the coming year, $115 million in fiscal year 1989, according to the latest revenue estimates unveiled June 8 and produce the state an estimated $1.43 billion through the turn of the century, based on computer runs done earlier this spring.

The change, while adopted by the state's House in April, is opposed adamantly on philosophical and pragmatic grounds by key members of the majority coalition in the Senate.

In recent weeks the debate over ELF has centered on whether the state needs more revenues at this time or whether oil price hikes will erase the state's budget deficit and whether Cowper by calling a special session can gain the political leverage he likely will need to prompt Senate leaders to bring the issue to the floor for a vote. Almost lost in the shuffle has been the tremendously complex debate over what the ELF change actually will do to oil development in Alaska.

ELF, while it might conjure up images of green-clad, wee people, is a severance tax concept designed to reduce the effective rate on oil wells as their productivity and thus profitability drops. ELF's original goal was to reduce taxes sufficiently to make it worth while to oil producers to continue to pump oil from marginal wells, thus continuing jobs and possibly increasing investment to get the oil out of the ground, as oil fields decline.

ELF as passed was based on the productivity of individual oil wells. The concept was that oil companies could supply data on the actual costs of producing oil from fields, the ELF being amended based on actual oil company cost experiences.

The original assumption, as yet unchanged, was that the ELF, which determines the effective tax rate that oil companies pay in severance taxes, would be nothing at 300 barrels a day or less of Alaska production and be 1, for wells producing just over 3,000 barrels of oil a day. In short, wells with an ELF near zero would get a big tax break, while wells in fields with an ELF near 1 would be considered *so* profitable they would get a tiny or no tax break, paying nearly the level of the state's official severance tax rate.

In 1977 the severance tax rate was 12.5 percent. But the oil industry questioned the constitutionality of a version of the state's companion corporate oil and gas tax law passed that year, claiming it was unconstitutional because it used the principle of separate accounting to compute taxes.

Under a separate accounting formula, oil taxes are based on the company's worldwide profits. The industry wanted the state to use the principle of modified apportionment, where Alaska taxes are based only upon profits generated from activities inside Alaska.

After a U.S. Supreme Court decision in 1980 that cast a long shadow on separate accounting – one erased by a later 1984 decision – lawmakers in 1981 scrubbed separate accounting and returned to the system of modified apportionment. The goal was to remove the danger that the state would lose the tax case and owe the industry $6 billion to $8 billion, while in many lawmakers' views producing a system that would grant a small tax break to the industry, while still assuring the state of almost the same amount of revenue it would have had under separate accounting.

Thus lawmakers raised the nominal or official severance tax rate to 15 percent and inserted a 10-year moratorium on the ELF to keep it from being able to lower tax rates on the main Prudhoe Bay field unless production dropped dramatically below expectations – production on the main Prudhoe Bay field currently is about 1,200 barrels per well per day higher on average than what would have been needed for producers to have gained any benefit from ELF on the North Slope's main field while the moratorium was in effect.

A House tax study in 1985, however, looked at the 1981 changes and decided the state had lost not just $300 million, but closer to $850 million in revenues because of the revised tax system, officials in the state's Office of Management and Budget (OMB) now pegging the loss, above what would have resulted because of falling oil prices, at closer to $1 billion through 1986.

The study prompted lawmakers both last year and this to consider changes in the state's oil tax system – one being to simply further extend the moratorium on ELF from being allowed to reduce rates. The ELF, when it goes into effect Saturday, will be about .84 for main Prudhoe Bay production, meaning the industry will receive just over a 16 percent cut in its severance tax rates overnight.

Cowper this January officially proposed extending the ELF moratorium for five more years. House lawmakers, however, proposed revamping the ELF formula, but allowing it to go into effect.

The new bill pegs ELF to the productivity of oil fields as a whole, not individual wells inside a field. Under the House proposal, now backed by Cowper, the severance tax rate on the main Sadlerochit field at Prudhoe Bay would work out to be 14.8 percent compared to the nominal rate of 15 percent, oil producers since January actually paying an effective rate of 12.6 percent. It would fall substantially for the other marginal fields on the North Slope and drop to zero for all Cook Inlet oil fields, currently paying just 1.3 percent in state taxes.

The rate for the new Endicott field, for example, will drop to .3 percent from the current 5.6 and on the Lisburne field to 3.6 percent from the current 12.25. The rate, however, will rise sharply on production from the state's second largest oil field, the North Slope's Kuparuk field, climbing to 11.7 percent from the current 8.1 percent.

House lawmakers argue that the current ELF formula obviously is flawed if its goal is to help marginal oil fields, since under the current law the 19,000-barrel-per-day Milne Point oil field, before it closed down last fall for economic reasons, was paying nearly the same tax rate as the 250,000-barrel-per-day Kuparuk field, although Kuparuk has far more volume over which to spread fixed production costs.

"The concept of the current ELF is obviously flawed if it doesn't treat Milne Point more favorably than Kuparuk. Kuparuk is not a marginal field and neither will Prudhoe Bay be economically for years," said state Rep. John Sund, D-Ketchikan, during House floor debate on the issue.

Supporters of the ELF change argue the bill actually will encourage continued production from truly marginal oil fields, while netting the state a more fair share of existing oil company profits on Alaska production.

According to an administration policy paper, the oil companies took in $62 billion off Alaska oil between 1982-85 and netted $16.1 billion in profits, the state getting only $14.3 billion in taxes and royalties. The oil companies, in a rebuttal paper prepared by Standard Alaska Production Co., argue those findings are misleading.

Standard's report says that at current prices of closer to $15 a barrel, the state's net share of production income over the next five years likely will be closer to 96 percent – part of the difference in the interpretations being the result of the state including oil company pipeline profits in its estimates, the companies excluding them.

Gregg Erickson, senior economist for Cowper's Office of Management and Budget, estimates the oil industry in the state will make $3 billion in profit after all expenses are deducted this year, the ELF change lowering their earnings performance by just 3 percent.

"We think the amount the companies will pay is so small in comparison that it won't have any significant effect on future development expenditures. The impact just won't be material," said Erickson last week.

According to a state Department of Revenue study, the new ELF should initially increase oil production slightly, before starting to discourage production between 1993 and 2005. Under the study, the change would prevent enough investment from being economic to cut state oil production by 21 million barrels, or five days' production at current rates – production that might be made up after 2005. The oil industry, however, strongly attacks the department's estimates.

ARCO Alaska, at one point this spring, pegged the production loss at far closer to 200 million barrels, an estimate the company now implies is probably too low. It now says that since added severance taxes might discourage companies from greater investments in secondary recovery methods, that the new ELF could cause the state's North Slope oil fields to shut down several years earlier than would be the case without the tax change.

"It simply stands to reason that any money you take from the industry will be money we won't have to reinvest in Alaska. And wringing additional production from North Slope fields is going to take a lot of investment," said George Nelson, president of Standard Alaska Production Co. last month.

Nelson argues that the new ELF formula will give Alaska the highest oil production tax of any state in the nation. He said the new ELF formula would peg Alaska's effective tax rate at 13.4 percent, above Louisiana's current 12.5 percent and far above Oklahoma's 7 and Texas' 4.9 percent rates. Alaska currently has an effective severance tax as a percent of value of 11.6 percent.

Dave Heatwole, vice president of ARCO Alaska, says it is bad policy for Alaska to be hiking its oil severance tax at the time that other states have been considering lowering their rates since Alaska is in competition with other states for future oil company investment dollars.

"Each time you look at drilling a new well you have to make decisions based on costs and whether the money you will earn will earn you more if invested elsewhere. The new law could hurt the state by shifting the outcome of those decisions," said Heatwole earlier this spring.

ARCO also argues that the new formula is a major change in the original concept of the ELF. Under current law, ARCO claims that there is an actual incentive for the industry to drill new wells, since additional production from marginal wells can actually decrease the company's overall tax burden. Under the new ELF that overall tax burden will rise, but just at lower rate.

Erickson, however, said that is an advantage of the new formula since it ensures that the industry will pay some taxes on new oil production, even though the industry can still lower its average tax rate slightly by additional drilling.

The oil industry's major argument is that the new formula takes so much money away from the profitable oil fields, notably Kuparuk, that it discourages companies from making investments in technology to produce future marginal fields, such as Prudhoe Bay's known West Sak Sands.

"The industry needs to have profitable areas, like Prudhoe, to be able to generate the capital and then justify the expense of marginal field development. If you tax us because you think you need the money and we're the only game in town, the money just might not be there for future development when you really do need it," said Nelson.

The ELF debate, cluttered with complicated formulas and complex terms, from PEL's (production at the economic limit) to BOPY's (barrels of oil per year), pits lawmakers who like to battle over the economic analysis of formulas, against those who philosophically haven't delved into the formulas, but who are philosophically against changing oil taxes at a time that they want greater oil industry exploration and production investment in the state.

"Now is just not the time to discourage investment in this state," said Senate President Jan Faiks, R-Anchorage, when she assigned the ELF issue to a handful of committees for consideration.

Mary Halloran, associate director of Cowper's Division of Policy Development, however, says now is exactly the time to modify ELF. "It really is a matter of fairness. Why when every other element of the state is being expected to sacrifice should the oil industry be getting tax breaks?" she asks.

WSJ 4/16/87

IRS Estimated Alaskan Oil Producers May Owe Over $200 Million for '84, '85

By Robert E. Taylor
Staff Reporter of The Wall Street Journal

WASHINGTON—The Internal Revenue Service has estimated that Alaskan oil producers may owe more than $200 million in windfall-profits taxes for 1984 and 1985, an IRS document from August shows.

The IRS has been discussing the matter with oil companies, industry spokesmen said, and the nature of the agency's review of the matter suggests the bill could rise further. The analysis of Alaskan tax payments also is leading the IRS to question whether crude oil prices were understated in California, which could lead the agency to question whether windfall-profits taxes were adequate for that state.

In an Aug. 20 document obtained by The Wall Street Journal, the agency said, "potential tax deficiencies in excess of $200 million remain which to date have not been resolved" for Alaskan windfall taxes for the two years. The document, which is unusual in disclosing an IRS estimate of taxes owed, solicited expert witnesses to help in negotiations or litigation with the oil companies.

The statement comes three years after IRS officials told congressional auditors that they probably would seek "substantial" added windfall taxes from Alaskan producers. The $200 million figure was the most specific IRS estimate to surface of the amount it may seek for 1984 and 1985.

Neither the agency nor the companies would comment on the issue of windfall-profits taxes.

California oil prices are involved because they are used to calculate the Alaskan oil's valu . The Alaskan crude's wellhead price, which is used in determining the windfall tax, generally is determined by subtracting transportation costs from the price of the oil when it lands in California.

The IRS document shows that it is assigning consultants to study whether oil companies overstated the cost of transporting oil to the lower 48 states, mainly California. It also has them assessing whether oil companies have kept crude oil prices in California below market levels for tax advantages, according to Gary Taylor, founder of Incentives Research Inc., Los Angeles, one of the firms hired for expert help.

Atlantic Richfield Co. is probably most vulnerable to any IRS claims. Of 16 oil companies that produce Alaskan oil, the bulk of production is by Arco, Exxon Corp. and British Petroleum Co.'s Standard Oil Co. unit. And Arco priced its Alaskan oil lower than the other two, according to Mr. Taylor and a Federal Trade Commission analysis.

Standard Oil already has reported paying $197 million to resolve Alaskan windfall-tax claims for 1980 through 1983. Arco and Exxon spokesmen said they have set up reserves to cover several matters, and would include any windfall-tax deficiencies.

According to Mr. Taylor, one reason the IRS needs analysis of California pricing is to rebut Arco's defense that its Alaskan oil prices were comparable to California prices after considering shipping costs.

So far, Mr. Taylor said in an interview, the IRS has asked his firm to review California crude pricing only as it influenced the value of Alaskan oil. But if the IRS challenges California pricing in Alaskan tax proceedings, it could also question whether adequate taxes were paid on oil in California. "The IRS would have a decision to make at that point," said Mr. Taylor.

California's volume of oil production—roughly two-thirds that of Alaska—suggests that any deficiency finding on California oil could be substantial.

Mr. Taylor, the IRS consultant, said integrated oil companies' incentive to minimize the price of their North Slope oil stemmed from taxes and royalties that once took 92% of the Prudhoe Bay price. That created an incentive to take profits instead in lower-taxed transportation, refining or marketing operations.

In fact, a U.S. Energy Department report last spring found that refiner profit margins were considerably higher in California in 1984 and 1985, and crude prices were unaccountably lower, than in the rest of the nation.

Mr. Taylor is no stranger to the subject. For nine years, he has advised California and the city of Long Beach in their lawsuits charging eight oil companies underpaid royalties by underpricing California crude oil. The suits charge the companies used their control over about two-thirds of the state's pipeline capacity to hold down the price of crude oil.

The more recent of the two suits, awaiting trial in a California state court, lists as defendants Exxon, Chevron Corp., Unocal Corp., Mobil Oil Corp., Texaco Inc., and Royal Dutch/Shell Group's Shell Oil Co. affiliate and one of its subsidiaries. A federal judge's dismissal of a prior suit against them is under appeal. Both the IRS and the Justice Department's antitrust division have been monitoring the California suits. The companies deny the charges.

GOVERNMENT

Alaska Disputes Land Swap

By a Wall Street Journal *Staff Reporter*

WASHINGTON — Alaska contends the Interior Department's planned land exchange in that state would trade away at a depressed price the most promising portion of the Arctic National Wildlife Refuge.

At issue is the agency's tentative accord to trade mineral rights on portions of the refuge to Alaskan native corporations and their oil-industry partners. In exchange, the agency would receive native lands elsewhere in Alaska with valuable wildlife habitats.

In a study circulated here, Alaska said its analysis shows that the agency proposes to trade away the tops of all the reserve's most promising geologic structures for oil and gas. That contradicts the department's claim that only 34 of the trade's 73 refuge tracts lie over identified structures that could contain oil and gas.

The state also called it "almost certain" that the federal government would generate "substantially higher revenues" if it held a competitive lease sale for the refuge's lands instead of trading them.

Susan Reece, deputy assistant secretary of the interior, defended her agency's valuations and geological analysis. The department has said it won't complete the trade without congressional approval.

Earnings Rise At Six Major Oil Companies

Most of the Gains Reported For 3rd Period Reflected Rebound in Prices of Oil

A WALL STREET JOURNAL *News Roundup*

Six major oil companies reported third-quarter earnings, with most posting profit increases based on the rebound in oil prices from depressed year-earlier levels. Crude-oil prices hit an 11-year low near $10 a barrel in July 1986, but have averaged at least $6 a barrel more in the third quarter this year than in the like period last year.

Companies heavily involved in refining and marketing generally showed smaller gains, as those "downstream" operations have had smaller profit margins lately. Chemical-producing subsidiaries showed strong earnings.

Earnings for the quarter more than tripled at the Shell Oil Co. unit of Royal Dutch/Shell Group and at Atlantic Richfield Co., but there were more-modest gains at most big, integrated companies. Net income rose 1% at Exxon Corp., 18% at Occidental Petroleum Corp. and 33% at Unocal Corp. Mobil Corp.'s earnings were up 75%, but profit from its petroleum operations declined 12% for the quarter.

Atlantic Richfield Co.

Los Angeles-based Arco's third-quarter sales jumped 24% to $4.40 billion from $3.53 billion.

Arco's chairman, Lodwrick M. Cook, said the surge in earnings showed the impact of higher crude prices on oil and gas operations, a strong performance by the Arco Chemical Co. unit, and higher crude and natural gas liquids production. He said lower refining and marketing earnings, reflecting "significantly lower" margins for petroleum products, partly offset the increases.

Earnings from Arco's world-wide oil and gas exploration and production rose to $235 million from $41 million in the year-earlier three months. Arco produced more oil at its Alaskan North Slope operations, though production was lower in the rest of the U.S. The refining and marketing business reported earnings of $30 million, down from $94 million in the 1986 quarter.

In the first nine months this year, Arco's net soared 60% to $884 million, or $4.82 a share, from $551 million, or $3.03 a share, a year earlier. Sales rose 7.7% to $12.24 billion from $11.37 billion.

Exxon Corp.

Exxon's scant 1% third-quarter earnings increase reflected a standoff that was characteristic of the whole industry: improved results in exploration and production counterbalanced by poor results in refining and marketing.

Revenue rose 27% to $21.9 billion from $17.2 billion in last year's third quarter. The company's profit margin for the quarter slipped to 4.9%, compared with 6.1% in the 1986 period.

L.G. Rawl, Exxon's chairman, said crude-oil prices averaged $6.50 a barrel more in this year's third period than in the year-earlier period. That helped earnings at the company's exploration and production divisions, which had profit of $932 million, up $391 million from the third quarter of 1986.

But the refining and marketing side posted only a $60 million profit, down from $463 million in the 1986 quarter. The New York-based company said margins were "squeezed by a combination of higher crude prices and marketplace pressures." Mr. Rawl called the refining and marketing results "below acceptable levels."

Of the $60 million in refining profit, only $7 million came from U.S. operations, down sharply from $106 million in the third quarter of 1986. Foreign refining and marketing operations chipped in $53 million of earnings for the quarter, down from $357 million in the 1986 quarter.

Chemical operations contributed earnings of $152 million, up $38 million, or 33%, from the like quarter last year.

The company stepped up capital and exploration spending to $1.98 billion in the quarter, a rise of $451 million from last year's third quarter, mainly because of increased activity in Australia.

The company declined to discuss possible steps to improve profitability in the refining and marketing operations. Brian Jacoboski, an oil analyst at Paine Webber Inc., said Exxon has been rumored to be discussing the sale of its European refining operations to Saudi Arabian interests, and he believes the rumor is true.

An Exxon spokeswoman yesterday declined to confirm or deny the report. She said the company doesn't comment on "rumors of acquisitions, mergers, or divestments."

In the first nine months this year, revenue was $61.5 billion, up 7% from last year's figure of $57.4 billion.

Mobil Corp.

While New York-based Mobil reported a 75% earnings gain for the third quarter, year-earlier amounts are adjusted for a loss on the sale of its Container Corp. of America subsidiary. Before the adjustment, third-quarter earnings show a 4% decline.

In the 1986 third quarter, Mobil took a $150 million loss on the Container Corp. sale. Without that loss, third-quarter earnings in 1986 would have been $332 million.

Revenue was $14.4 billion, up 27% from $11.3 billion in the 1986 quarter.

Overall, Mobil's chairman, Allen E. Murray, said petroleum earnings declined 12% in the third quarter, to $397 million from $453 million a year earlier.

The exploration and production segments were strong, producing profit of $326 million world-wide, compared with $130 million in last year's third quarter.

But refining and marketing earnings plunged to $71 million from $323 million in the year-earlier period.

Mobil's chemical operations showed $92 million in profit for the quarter, a record and a 142% increase from the 1986 third quarter. Mobil's retailing unit, Montgomery Ward, reported profit for the September quarter of $21 million, up $8 million from the like period last year.

Capital expenditures, including oil-exploration outlays, rose 22% in the third quarter to $828 million from $681 million last year. But in the nine-month period, they were down 5% to $2.09 billion from $2.19 billion.

For the first nine months, Mobil reported revenue of $40.8 billion, up 9% from $37.4 billion in the 1986 period.

Occidental Petroleum Corp.

For Occidental, a redemption of preferred shares reduced preferred dividend requirements and accounted for the relatively sharp third-quarter per-share net rise. Sales were $4.22 billion, up 14% from $3.72 billion.

Armand Hammer, chairman, said Los Angeles-based Occidental's oil and gas division had $58 million of pretax earnings, compared with a loss of $3 million in the 1986 period. Higher crude prices accounted for the oil and gas rise in earnings, although declining natural gas prices offset some of that increase. He said higher domestic natural gas production and natural gas liquids sales also contributed to the increase.

The natural gas transmission business had pretax earnings of $17 million in the quarter, down from $68 million last year, reflecting Occidental's sale last June of United Gas Pipe Line Co., higher depreciation expense and lower sales volume.

Occidental's chemical business had income of $49 million, up from $26 million in the year-earlier quarter. It recorded higher sales for its electrochemicals, detergent and specialty products, and for polymers and plastics, and had higher margins for its olefins and agricultural products, Occidental said.

Occidental's 1986 quarter included a $106 million gain on the sale of stock. It said its tax rate in the latest quarter was lower, reflecting the reduction of its ownership of the IBP Inc. meatpacking unit to 51%.

In the nine months, sales rose 14% to $12.7 billion from $11.2 billion.

Shell Oil Co.

Houston-based Shell reported that third-quarter net more than tripled, largely because of the increase in crude-oil prices and a record profit from chemical earnings. Revenue rose 40% to $5.65 billion from $4.01 billion.

But like other major integrated oil companies, Shell's refining and marketing operations were hurt, as oil-product earnings declined 13% to $68 million. Refining and marketing operations for most major U.S. oil companies were hurt in the third quarter because competitive pricing didn't allow product prices to keep pace with the rise in crude prices.

That rise in crude prices, however, provided a big lift to exploration and production, or "upstream," earnings. Shell's upstream profit in the quarter surged to $262 million from $25 million. Shell said domestic crude prices averaged nearly $17 a barrel in the quarter, up about $6 from a year earlier, which, combined with lower production costs, boosted profit. A 5% decline in natural gas prices somewhat impaired earnings.

Petrochemical operations were standouts for most major oil companies in the quarter because of strong demand and improved margins, and Shell was no exception. The company said chemical-product earnings rose nearly 150% to a record $131 million.

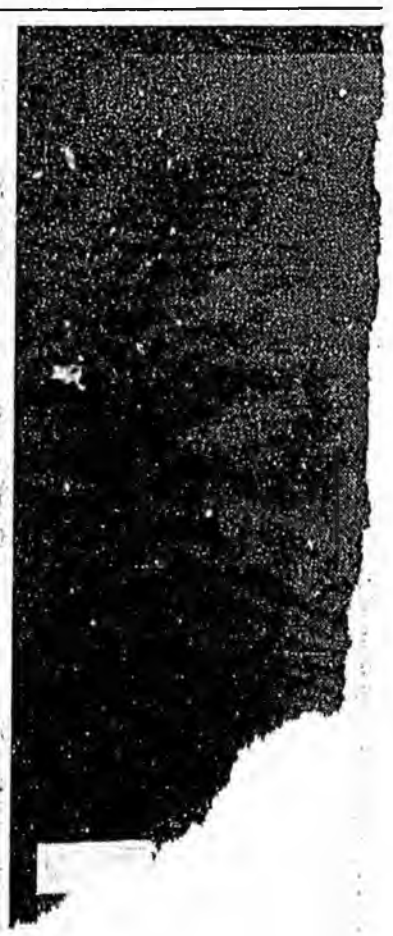
THIRD-QUARTER NET INCOME

	1987 In millions	1987 per share	1986 In millions	1986 per share	% chg.
Arco	315	1.71	102	0.56	+ 209
Exxon	1,065	0.75	1,055	a-0.73	+ 1
Mobil	319	0.77	b-182	b 0.45	+ 75
Occidental	46	0.20	39	0.12	+ 18
Shell	420	e	133	e	+ 216
Unocal	29	0.25	22	0.19	+ 33

NINE-MONTHS NET INCOME

Arco	884	4.82	551	3.03	+ 60
Exxon	3,785	2.31	3,880	a-2.68	− 15
Mobil	875	2.13	b-1,204	b-2.95	− 27
Occidental	c-202	c-0.90	d-161	d-0.69	+ 33
Shell	795	e	628	e	+ 26
Unocal	154	1.30	127	1.09	+ 20

a-Figures reflect 2-for-1 split Aug. 13. b-1986 figures include several special items, such as third-quarter loss of $150 million on sale of Container Corp. of America and second-quarter gain of $187 million on sale of Angolan assets. c-Includes extraordinary gain of $20 million or $0.10 a share. e-Per-share earnings for Shell Oil Co. not reported; Shell Oil is a unit of Royal Dutch/Shell Group.



HB

164

(FILE 3)

COMPUTING THE ALTERNATE ELF

The alternate Economic Limit Factor formula is:

ELF = (1-PEL/TP)EXP[(55,000,000*WD)/(PEL*TP/Days)]

PEL (Production at the Economic Limit) =
(300 barrels per day)*
(average number of operating wells during the month)*
(number of days of production for the month).
For example:
*300 barrels * 519 wells * 30 days = 4,671,000 barrels per month at the Economic Limit.*

TP (Total Production for the field) =
(average number of operating wells during the month)*
(number of days of production for the month)*
(average daily production per well).
For example:
*519 wells * 30 days * 2750 barrels per well = 42,817,500 barrels of production per month.*

WD (Well Days) =
(average number of operating wells during the month)*
(number of days of production for the month).
For example:
*519 wells * 30 days = 15,570 well days.*

Days = the number of days in the month for which the tax is paid.
*For example: In April, **30 days**.*

CALCULATION EXAMPLE

Alternate ELF
(1- PEL / TP) EXP[(55,000,000* WD)/(PEL * TP / Days)]

(1 - 4,671,000/42,817,500) EXP[(55,000,000*15,570)/(4,671,000*42,817,500/30)]

= (1 - .1091) EXP (.1285)

= (.8909) EXP (.1285)

= .9856

FISCAL EFFECTS OF ELF ALTERNATIVES

Additional Revenue (Millions) At the 30th percentile

	HB 164	CSHB 154
1987	*0.0*	*0.0*
1988	*76.7*	*88.7*
1989	*92.0*	*108.5*
1990	*98.5*	*117.6*
1991	*99.9*	*112.9*
1992	*105.6*	*117.8*
1993	*5.7*	*129.1*
1994	*3.9*	*110.4*
1995	*3.7*	*102.1*
1996	*4.5*	*97.7*
1997	*3.7*	*100.4*
1998	*2.0*	*88.2*
1999	*-0.2*	*90.9*
2000	*-0.1*	*69.0*

Source: DOR fiscal notes, 3/2/87 and 3/19/87.

Prepared by OMB/Division of Policy, 3/20/85.

STATE, FEDERAL AND INDUSTRY SHARES OF ALASKA OIL RESOURCE INCOME: FISCAL 1982-1985

(millions of dollars except as noted)

Fiscal year	[1] Total Revenue	[2] State Royalty	[3] Sever. Conser. tax	[4] Total Prop. tax	[5] Total Oper. Costs	[6] Total Deprec.	[7] Total Acquis. Costs	[8] Windfall Profits Tax
1982	$16,456	$1,553	$1,581	$276	$940	$602	$1	$2,018
1983	$15,470	$1,448	$1,494	$307	$1,101	$780	$1	$1,018
1984	$14,955	$1,409	$1,393	$358	$1,259	$998	$1	$412
1985	$15,136	$1,390	$1,389	$397	$1,449	$1,093	$1	$70

Fiscal Year	[9] Uncap. Interest Expense	[10] Explore. Costs	[11] Admin. Costs	[12] Other Deducs.	[13] Total Deducs.	[14] State Taxable Net Income	[15] Corp. Petrol Income Tax	[16] Federal Taxable Income
1982	$721	$191	$236	$149	$8,268	$8,188	$669	$7,519
1983	$676	$204	$252	$142	$7,423	$8,047	$236	$7,811
1984	$614	$219	$265	$136	$7,064	$7,891	$265	$7,626
1985	$566	$234	$278	$130	$6,997	$8,139	$169	$7,970

Fiscal Year	[17] Federal Corp. Income Tax	[18] Oil Industry Alaska Profits	[19] Total Federal Tax	[20] Total State Tax & Royalty	[21] ----Share of Oil Income---- State	[22] Federal	[23] Industry
1982	$2,098	$5,421	$4,116	$4,079	30%	30%	40%
1983	$2,140	$5,671	$3,158	$3,485	28%	26%	46%
1984	$2,242	$5,384	$2,654	$3,425	30%	23%	47%
1985	$2,343	$5,627	$2,413	$3,345	29%	21%	49%

SOURCES AND FORMULAS --

Column [1]: Vincent Wright, chief of research, to Mary Nordale, Commissioner of Revenue, Memorandum of October 31, 1985, Table 3.

Columns [2] & [3]: January 1986 DOR Revenue Sources, p. 39.

Columns [4] to [12]: Vincent Wright, loc. cit.

Column [13]: sum of columns [2] through [12]

Column [14]: column [1] - column [13]

Column [15]: Revenue Sources, p. 39.

Column [16]: column [14] - column [15].

Column [17]: column [16] * (production-weighted average tax rate -- 1982 = .279; 1983 = .274; 1984 = .294; 1985 = .294). Company effective rates for '82-84 from R. McIntire and R. Folen, "Corporate Income Taxes in the Reagan Years," Oct. 1984, pp. 32-36; '85 estimated by OMB.

Column [18]: column [16] - column [17].

Column [19]: column [8] + column [17].

Column [20]: sum of columns [2], [3], [4], and [15].

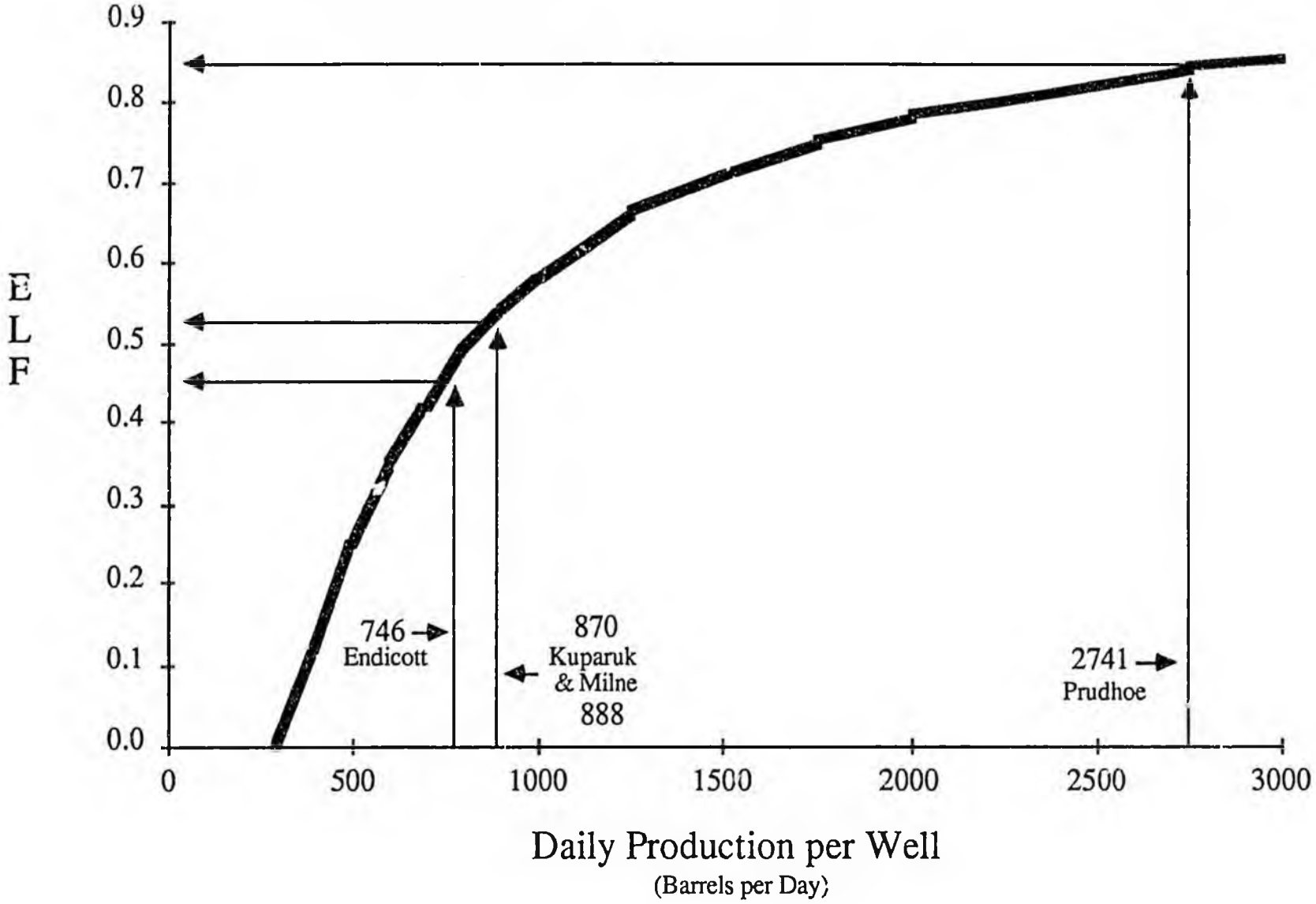
Column [21]: (column [18])/(sum of columns [18], [19], and [20]).

Column [22]: (column [19])/(sum of columns [18], [19], and [20]).

Column [23]: (column [20])/(sum of columns [18], [19], and [20]).

Office of Management and Budget
Division of Strategic Planning
revised April 11, 1986

Current Law


0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
ELF
0
500
1000
1500
2000
2500
3000
746
Endicott
870
Kuparuk
& Milne
888
2741
Prudhoe
Daily Production per Well
(Barrels per Day)

FISCAL EFFECTS OF ELF ALTERNATIVES

Additional Revenue (Millions) At the 30th percentile

	FY 87-88	FY 89	FY 90	FY 91	FY 92
Option 1 (5 Yr. Delay)	*75.0*	*91.4*	*97.7*	*95.7*	*101.5*
Option 2 (Field ELF)	*98.6*	*98.1*	*109.6*	*96.1*	*94.2*
Option 3 (5 Yr. Delay, Shut "Trapdoor")	~~*75.0**~~	~~*91.7**~~	~~*99.7**~~	~~*97.7**~~	~~*103.5**~~

SEE FISCAL NOTE

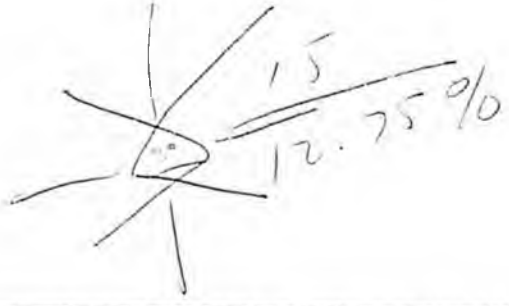
*Indicates OMB estimate pending DOR fiscal analysis due Thursday, 2/26.

ESTIMATED SEVERANCE TAX RATES*

	Prudhoe Bay	Kuparuk River	Milne Point	Endicott	Lisburne	McArthur River	Granite Point
Current Law	12.6%	7.8%	6.5%	5.6%	12.3%	1.1%	1.3%
Option 1 (5 Yr. Delay)	15.0%	7.8%	6.5%	5.6%	12.3%	1.1%	1.3%
Option 2 (Field ELF)	14.8%	10.7%	0.3%	0.3%	3.6%	0.0%	0.0%
Option 3 (5 Yr. Delay, Shut "Trapdoor")	15.0%	7.8%	6.5%	5.6%	12.3%	1.1%	1.3%

*North Slope values are forecast FY 88 averages; Cook Inlet values are estimated Dec 1986 rates.

OMB, Division of Policy, 2/26/87



D R A F T

Under the authority of art. III, sec. 18, of the Alaska Constitution, I am transmitting a bill amending the formula for the oil and gas properties production tax economic limit factor (ELF) as it applies to oil. The bill will prevent a serious decline in production (severance) tax revenue anticipated in fiscal year 1988. In addition, it will reduce or eliminate entirely the severance tax on smaller fields, thereby providing added incentives for development of marginal North Slope fields and sustained production from Cook Inlet fields.

In 1981 the legislature passed an Act amending the corporate income tax and the severance tax. The Act substantially reduced the income taxes collected from Prudhoe Bay producers. Legislators were assured -- incorrectly, as it turned out -- that most of the reduction would be offset by two other provisions of the Act (ch. 116, SLA 1981), including a severance tax amendment that suspended the applicability of the economic limit factor (ELF) to Prudhoe Bay until 10 years after commercial production had begun. The 10th anniversary will come on June 20 of this year.

The fiscal note on the 1981 bill did not include projections beyond FY 1985, although an analysis by the Legislative

Finance Division did show that the ELF provision would cause state revenue to fall precipitiously in FY 1988. Governor Hammond noted this possibility, but expressed "full confidence in the ability of the legislature to deal at that time" with adverse revenue consequences, should they prove to be serious. [Statement of Governor Hammond on signing FCCSSB 524 (ch. 116, SLA 1981); see July 27, 1981 press release on oil and gas legislation, fourth page.]

It is now clear that the 1981 Act will have serious consequences for us in the coming fiscal year: state severance collections will be reduced by over 15 percent, and FY 88 revenue will fall by $93,000,000 (already accounted for in the official "mean" forecast).

Delaying the applicability of the ELF to Prudhoe would avoid this loss, and would have the virtue of simplicity. Evidence presented to the legislature's Joint Special Committee on Tax Policy, however, suggests that delay would be undesirable on other grounds. It would not resolve the fiscal problem bequeathed us by the 1981 Act, only postpone it. Moreover, delaying the applicability of the ELF to Prudhoe would increase the uncertainty faced by Prudhoe owners regarding the future taxes, and would eventually create disincentives to further field development investments.

As conceived in 1977, the ELF was to be a "mechanism for scaling down the tax rate as the production declines toward the economic limit." [Alaska Dept. of Revenue, Alaska's Oil and Gas Structure: A Study With Recommendations for Improvement, 1977.] The attached bill returns to this concept and will once again apply the ELF equally to all fields, including Prudhoe Bay, as was the case before 1981.

The original ELF took account only of productivity per well. Since the Milne Point field opened in late 1985, evidence has accumulated that per-well productivity is by itself an inadequate measure of a field's relative ability to pay severance tax. The average well in the Milne field initially produced 950 barrels per day, giving it an ELF very nearly the same as the Kuparuk field, where the average well produced 1,000 barrels per day. Total production was 250,000 barrels per day in the Kuparuk field, while Milne Point produced less than a 10th of that amount.

Despite the smaller size, operators at Milne were still required to maintain a minimum complement of operating personnel, and pay the associated costs. These costs had to be divided, however, among far fewer total barrels. Although the two fields had almost identical per-well productivities, the smaller Milne Point field was clearly less profitable,

and the owners eventually elected to temporarily shut down production. This experience illustrated the deficiency of an ELF adjustment based solely on per-well productivity.

The attached bill will correct this perverse and unintended effect by adding total field productivity to the ELF calculation. Fields producing less than 119,500 barrels per day will have a lower ELF than under current law, while fields producing more than that amount will have a higher ELF. Prudhoe Bay will still receive a tax reduction when the ELF adjustment currently denied that field is returned, though the benefit will be smaller than would be the case under the "10th anniversary" provisions of the 1981 law taking effect in June. A somewhat higher ELF will apply to Kuparuk than is currently the case. Other known fields, including those contemplated but not yet in production, will benefit from lower ELFs and reduced taxes.

I wish that this legislation were not required. The period of low oil prices, however, has provided evidence that the ELF will need to provide a greater tax reduction for the smaller, more marginal fields if petroleum development in Alaska and the employment benefits of it, so badly needed in the current economic difficulties, are to be maximized. Unfortunately, in our current fiscal condition we simply

cannot afford to grant these needed reductions without offsetting increases in the state's two largest and most profitable fields. Neither can we afford to give Prudhoe Bay owners the tax reduction that will otherwise occur if the 1981 law is not changed. Indeed, should the legislature allow the programmed reduction to take effect, I will be compelled to seek reductions in appropriations beyond those already contemplated in the Administration budget.

I have restricted the changes to the minimum necessary to achieve the two purposes described above. In keeping with this principle, I have left for another time proposals that would change the so called "trap door" in the original 1977 severance tax. As they now stand, these particular provisions could allow producers to receive reductions in the "presumed production at the economic limit," which, in a period of very low oil prices, could open a "trap door" through which the taxpayer might entirely escape the severance tax.

This bill, along with forthcoming bills dealing with the individual income tax and disposition of permanent fund reserves, are cornerstone elements in the overall plan for long-term resolution of the state's current fiscal difficulties.

I urge your early consideration and passage of this bill.

Sincerely,

Steve Cowper
Governor

STATE OF ALASKA 1987 LEGISLATIVE SESSION No. 3
FISCAL NOTE

REQUEST

Bill Version: CSHB 164 (Fin)
Publish Date: HOUSE 3/30/87

Pevision Date:
Title: An act relating to the oil and gas production tax.
Sponsor: Rules/Governor
Requestor: House Resources

Agency Affected: Revenue
BRU: Audit

Components: Oil & Gas

EXPENDITURES/REVENUES: (Millions of Dollars)

	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
OPERATING						
PERSONAL SERVICES	-	-	-	-	-	-
TRAVEL	-	-	-	-	-	-
CONTRACTUAL	-	-	-	-	-	-
SUPPLIES	-	-	-	-	-	-
EQUIPMENT	-	-	-	-	-	-
LANDS & STRUCTURES	-	-	-	-	-	-
GRANTS, CLAIMS	-	-	-	-	-	-
MISCELLANEOUS	-	-	-	-	-	-
TOTAL OPERATING	-	-	-	-	-	-
CAPITAL	-	-	-	-	-	-
REVENUE	-	88.7	108.5	117.6	112.9	117.8

FUNDING: (Thousands of Dollars)

GENERAL FUND	-	-	-	-	-	-
FEDERAL FUNDS	-	-	-	-	-	-
OTHER	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-

POSITIONS:

FULL-TIME	-	-	-	-	-	-
PART-TIME	-	-	-	-	-	-
TEMPORARY	-	-	-	-	-	-

ANALYSIS: The above numbers represent the increase in general fund revenues if this bill becomes law. The key assumptions are introduction of a 55,000,000 scaling factor into the exponent of the current ELF formula and fixing the value of the Production at the Economic Limit (PEL) at 300 barrels per well per day. The production impact from FY88 through FY2005 represents a cumulative total loss of 20.3 million barrels.

Prepared By: Vincent Knight for Chuck Logsdon
Phone: 276-5364
Division: Office of the Commissioner
Date: 3/19/87

Approved by Commissioner: Malone
Date: 3/19/87
Agency: Revenue

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Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)
Senate Secretary

LEGISLATIVE FINANCE

	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	Total
Sohio	[illegible]	4.917486	0	[illegible]	[illegible]	[illegible]
Arco	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Exxon	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mobil	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phillips	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chevron	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Texaco	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A. Hess	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Shell	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Marathon	.25949	0	0	0	0	.25949
BP	.051390	14.768331	0	0	0	14.819721
LL & E	.207572	0	0	0	0	.207572
Union	0	2.196992	0	.39795	0	2.594942
Conoco	0	0	.474789	0	0	.474789
CIRI	0	0	0	.024635	0	.024635
Total	519.90	42.91	.50	3.814635	10.58	576.864635

COMPANY FIELD EFFECT ADMIN. PROPOSAL

	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	Total	Delta Base
Sohio	310.718044	4.07364	0	2.847936	2.182	320.72162	48.178232
Arco	133.585452	20.80596	0	.000852	4.364	158.756244	20.918580
Exxon	133.585452	.15624	0	.874432	4.364	138.980124	20.763146
Mobil	11.65546	.1519	0	0	0	11.80536	1.794555
Phillips	11.400124	.1085	0	0	0	11.516624	1.756321
Chevron	4.354714	.04774	.25396	0	0	4.656414	.819243
Texaco	3.312036	0	0	0	0	3.312036	.509544
A. Hess	3.250702	0	0	0	0	3.250702	.500108
Shell	.858676	0	0	0	0	.858676	.132104
Marathon	.30667	0	0	0	0	.30667	.04718
BP	.061374	14.93394	0	0	0	14.995274	.178045
LL & E	.245336	0	0	0	0	.245336	.037744
Union	0	2.22208	0	.4368	0	2.65888	.063938
Conoco	0	0	1.14604	0	0	1.14604	.671252
CIRI	0	0	0	.02704	0	.02704	.002405
Total	613.34	43.4	1.4	4.18704	10.91	673.23704	96.372405

COMPANY FIELD EFFECT FIELD ELF

	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	Total	Delta Base
Sohio	305.[illegible]	8.250854	0	.700444	.744	315.167516	42.624125
Arco	131.274594	34.512903	0	.000228	1.588	167.374828	29.537172
Exxon	131.274594	.259164	0	.239628	1.588	133.361386	15.144402
Mobil	11.45187	.251966	0	0	0	11.703835	1.69385
Phillips	11.210778	.179975	0	0	0	11.390753	1.63045
Chevron	4.279383	.079189	.003628	0	0	4.3622	.525029
Texaco	3.254742	0	0	0	0	3.254742	.45225
A. Hess	3.194469	0	0	0	0	3.194469	.443875
Shell	.843822	0	0	0	0	.843822	.11725
Marathon	.301365	0	0	0	0	.301365	.041875
BP	.060273	24.771759	0	0	0	24.832032	10.014803
LL & E	.241092	0	0	0	0	.241092	.0335
Union	0	3.685888	0	.1197	0	3.805588	1.210646
Conoco	0	0	.016372	0	0	.016372	-.458416
CIRI	0	0	0	.00741	0	.00741	-.017225
Total	602.73	71.99	.02	1.14741	3.92	679.85741	102.992775

Questions and Answers On The ELF
with related
Briefing Materials

April 21, 1987

Office of the Governor

Office of Management and Budget *Division of Policy*

CONTENTS

Questions and Answers on the "ELF"

What does the ELF bill do?

A provision in current law will reduce Prudhoe Bay severance taxes on June 20, 1987. The ELF bill [CSHB-164 (fin) am] will prevent this reduction by substituting a new formula for computing the economic limit factor (ELF).

How did we get this provision in our law, and why does it take effect on June 20?

In 1981, the legislature amended the oil and gas corporate income tax and the severance tax. By changing from separate accounting to modified apportionment the act reduced income taxes for Prudhoe Bay producers. Legislators were assured -- incorrectly, as it turned out -- that most of this reduction would be offset by other provisions. These included a severance tax amendment which effectively suspended the applicability of the ELF to Prudhoe Bay "for the first ten years following the commencement of commercial production." The tenth anniversary will come on June 20 of this year. Since the ELF is a formula that reduces severance tax rates by variable amounts, depending on per-well production, suspending the ELF had the effect of increasing the tax.

How does the ELF formula work to reduce taxes?

The ELF is always a number between 1 and zero that gets multiplied times the nominal tax rate, producing the effective tax rate. Under current law the ELF is determined by the per-well productivity of the field. If productivity is high, the ELF is relatively close to 1 (.9 for example), and the field gets a small tax break. Fields with low per well productivity get a smaller ELF (.5 for example), and a larger tax break. Most fields in Cook Inlet are currently paying no severance tax because their low production per well gives them ELFs of zero. (Zero times the nominal tax rate of 12.25 percent gives an effective tax rate of 0.0 percent.).

When the ELF is calculated for Prudhoe it comes out to about .84, but (because of the 1981 amendments) during the first ten years of production the ELF doesn't apply to that field unless it is below .70, which is not expected to happen for some years.

Why didn't legislators realize in 1981 that this "ten year" business would cause us problems later?

Most legislators were probably unaware of the potential problem. The proposal was first unveiled to a free conference committee on June 22, and was adopted as the Free Conference Committee Substitute the next day. On June 24 it passed both houses and was on its way to the governor. Obviously there was little time to study the bill. The fiscal note included no projections beyond FY 1985.

A post-session analysis by the Legislative Finance Division did show that the ELF provision would cause state revenue to fall sharply in FY 1988. Governor Hammond acknowledged this when he signed the bill, but expressed "full confidence in the ability of the legislature to deal at that time" with adverse revenue consequences, should they prove to be serious.

How much would Alaska lose from the cut in Prudhoe taxes?

The Department of Revenue estimates the fiscal year (FY) 1988 loss at $93 million, or $77 million under the more conservative "30 percent" forecast. The reduction is already accounted for in the official forecasts.

Will the loss be affected if oil prices go up or down?

Higher oil prices will result in increased severance tax revenue, and would mean bigger losses from allowing the ELF to apply at Prudhoe. Falling prices will reduce severance tax revenue, and will reduce the loss figure.

How would the ELF bill affect the expected revenue loss?

As originally introduced the bill would have prevented the ELF from applying to Prudhoe for an additional five years. The measure that emerged from the House took a more comprehensive approach: the ELF would be allowed to apply at Prudhoe, but the formula for calculating the ELF would be changed. Under the new formula (sometimes called the "alternate ELF"), severance tax revenue from Prudhoe would decline only slightly. Tax revenue from Kuparuk would increase, but all other producing fields would receive reductions.

The net effects of these increases and decreases produce $88 million additional revenue in FY 1988, and $108 million in FY 1989. By FY 2005 the gain will have diminished to $29 million. The figures (see p. 15 for the complete long-run projections) are based on the state's deliberately conservative forecast of production and oil prices (the so called "30 percent" forecast).

How does the new ELF calculation in the bill differ from the ELF formula in present law?

The original ELF takes account only of productivity per well. Since the Milne Point field opened in late 1985, evidence has accumulated that per-well productivity is by itself an inadequate measure of a field's relative ability to pay severance tax. The average well in the Milne field initially produced 950 barrels per day, giving it an ELF very nearly the same as the Kuparuk field, where the average well produced 1,000 barrels per day. Total production was 250,000 barrels per day in the Kuparuk field, while Milne Point produced less than one-tenth of that amount.

Despite the smaller size, operators at Milne were still required to maintain a minimum complement of operating personnel, and pay the associated costs. These costs had to be divided, however, among far fewer barrels. Although the two fields had almost identical per-well productivities, the smaller Milne field was clearly less profitable, and the owners eventually elected to temporarily shut down production. The experience illustrated the deficiency of an ELF adjustment based solely on per-well productivity.

The new ELF formula incorporated in the bill will correct this perverse and unintended effect by adding total field productivity to the ELF calculation. Fields producing less than 120,000 barrels per day will have a lower ELF (bigger tax break) than under current law, while fields producing more than that amount will have a higher ELF (smaller tax break).

Some industry sources say that Kuparuk is really a marginal field, and that it can't afford to pay the tax increase that would result from the new formula. How do you answer this?

Under the ELF bill the FY 88 effective tax rate in the Kuparuk River field will be 10.7 percent. This compares with 7.8 percent under the current law. The owners naturally don't like this increase. But the question is can they afford it? Kuparuk River is the biggest oil field in the nation, except for Prudhoe. Kuparuk produces 93 million barrels per year, compared with 60 million from the next biggest field, South Belridge in California. A big field like Kuparuk doesn't need the big tax break we are giving to the smaller fields.

Kuparuk produces $664 million in annual gross revenue for its owners, after royalty is deducted. Under the bill the state will take $71 million (mean forecast). This leaves $593 million for the companies to cover their costs. Deducting field operating costs of $1 per barrel leaves $500 million net operating revenue per year. Based on ARCO's House Finance testimony on March 27, 1987, OMB estimates total field development investment at $1.46 billion. Dividing investment by net operating revenue shows that *even at today's oil prices* the field would pay for itself in less than 3 years. Kuparuk has already been in production for over 5 years, at average prices much higher than today's prices. Kuparuk can afford to pay a 10.7 percent tax. Leaving Kuparuk at the current 7.8 percent rate would provide the owners with a major windfall.

But won't the new severance tax require the Kuparuk owners to pay a lot more than they would if the field were located in any other state?

The listing on the next page shows the tax per barrel that the Kuparuk owners would pay if the field were located in several of the larger oil producing states.

STATE	KUPARUK TAX PER BARREL
Louisiana	$1.75
New Mexico	$1.13
Oklahoma	$0.98
Wyoming	$0.84
Alaska (proposed)	*$0.76*
Texas	$0.67
Alaska (existing)	*$0.62*

Here is the same ranking on a percentage of value basis.

STATE	KUPARUK TAX AS A PERCENT OF VALUE
Louisiana	12.5 %
Alaska (proposed)	*10.7 %*
New Mexico	8.1 %
Alaska (existing)	*7.6 %*
Oklahoma	7.0 %
Wyoming	6.0 %
Texas	4.9 %

Each state designs its severance tax structure for the conditions in that particular state. In none of the other states is there an oil field even close to the size of Kuparuk, yet because the other states are much nearer to oil markets, the selling price of a barrel is much higher than in Alaska. Differences like these make it difficult to draw precise comparisons. The average oil well in Texas produces 145 barrels per day. A well producing at that rate in Alaska would pay no severance tax whatever. With respect to Kuparuk Alaska's severance tax with the new ELF will fall well within the range of severance taxes in other states.

A major oil company and an Anchorage banker say the state is already getting 96 percent of all oil and gas profit. Is this true?

No. The conclusion, which is said to come from a Department of Revenue study, is false. The state study projected future oil revenue under a variety of assumptions, and did not reach that conclusion. The Department has described the assertion that it did as "misleading."

The actual profits earned by the oil industry from production and transportation activity in Alaska during FY 1982-85 are shown on the attached sheets, along with the share that went to the state through royalties and taxes. Also shown are the state's estimates of the share of those profits removed from Alaska. Figures for 1986 and 87 are being compiled, and will be released soon.

Some oil companies say the new ELF will have a bad effect on future development. Will the bill impact future production?

Yes, but the impact won't be large. A Department of Revenue analysis shows that the new ELF would increase North Slope output by 280,000 barrels during FY 1988 -- equal to 4 hours of flow through the TAPS pipeline. Effects taper off in later years and in 1993 become negative. The cumulative impact through FY 2005 is pegged at a negative 21 million barrels, equal to 5 days TAPS output at current rates. After 2005, however, much of this loss would be recouped, since the new ELF would increase incentives for production in the later stages of a field's life, when the incentive is really needed.

An oil company used an example to show that under the new formula the drilling of an additional well in an existing field will result in a higher tax on that field. They say that creates a disincentive to further drilling.

We have seen those calculations. Using figures typical for a field like Kuparuk, the example shows that drilling one additional well in the field will produce an additional $981,000 in annual gross revenue. The objection seems to be that under the proposed severance tax a part of this gain would have to be paid to the state -- $58,611 to be exact.

The example offered by the Kuparuk operators illustrates a loophole in the current ELF: under the circumstances described in the example, not only will the owners pay no tax on the incremental production from an additional well, owners will actually receive a *tax rebate* of $37,846 annually. The effect is analagous to a personal income tax where the effective tax rates become *lower* as increasing income moves the taxpayer into a higher bracket.

Under the proposed law producers who increase output through additional drilling will still be rewarded with a lower *average* tax rate, but the reduction will not completely eliminate the tax on the incremental revenue, nor will it provide them with the windfall of a tax rebate. If the new law is adopted it will close this loophole. (For more detail, see the technical note on p. 12.)

You said that the ELF bill had passed the House. What happens next?

The bill was sent to the Senate on April 3. Senate President Jan Faiks referred the measure to five different committees. No hearings have been scheduled.

OMB/Division of Policy
4/21/87

CORRECTION

THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

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ELF DEJA VU

Some oil companies argue the existing ELF should not be changed. Ten years ago oil companies were also talking about the ELF, which was then being considered by the legislature. Here is a sample of what was being said then.

The ELF is "too complex, unrealistic, and fails to allow reasonable operating costs."

Larry Vavra, spokesman for Union Oil Co.
Fairbanks News-Miner, April 22, 1977

If it adopts the ELF, "Alaska will ... tip the scales against future development."

Monte Taylor, Exxon, USA
Anchorage Times, March 19, 1977

The proposed ELF legislation "would wipe out any remaining incentives for future development in Alaska."

Richard Donaldson, Standard Oil Co. of Ohio
Fairbanks News-Miner, March 25, 1977

The severance tax bill [with the ELF] will "result in significant losses in state income and fewer jobs...."

Monte Taylor, Exxon USA
Fairbanks News-Miner, March 26, 1977

"The [ELF] bill would increase state oil and gas severance tax revenues from the North Slope by $7.2 billion over the 20 year life of the field...[T]he magnitude of the increase will cause a congressional backlash"

Ken Showalter, Standard Oil Co. of Ohio
Anchorage Times, April 22, 1977

The tax bills could make "subsidiary fields at Prudhoe Bay impossible to produce."

Richard Donaldson, Standard Oil Co. of Ohio
Alaska Advocate, April 21, 1977

"The only bitterness of the hearings came during an effort by Union Oil Co. spokesman Larry Wilson to read a lengthly and complex analysis of Alaska's tax structure.After about 40 minutes on the stand [House finance chairman Steve] Cowper cut him off with the observation that his testimony was going on too long.

"'You said your testimony was going to take 30 minutes,' Cowper said. 'Its been 40 minutes and now you say it will take another hour.'"

"There are a couple of sides to this question you know,' Wilson shot back. 'We've got a lot of money at stake.'"

Anchorage Daily News, April 22, 1977

WERE DID THE OIL REVENUE GO?
($ Billions)

Oil Companies' Gross Revenues In Alaska, FY 1982-85			$62.0
Less:	Operating, Administrative, & Misc. Costs.	$7.2	
Less:	Interest, Depreciation, & Other Capital Charges	$6.1	
Less:	Federal Taxes	$12.3	
Less:	State Taxes & Royalty	$14.3	
Oil Companies' Profits In Alaska, 1982-85			$22.1
Less:	New Investment In Alaska*	$6.0	
Profits Removed From Alaska, FY 1982-85			**$16.1**

*Testimony of Harold Heinze, ARCO, to House Finance 4/12/85, Transcript, p. 130; other sources shown on the following page.

OMB/Division of Policy, 4/8/87.

STATE, FEDERAL AND INDUSTRY SHARES OF ALASKA OIL RESOURCE INCOME: FISCAL 1982-1985

(millions of dollars except as noted)

Fiscal year	[1] Total Revenue	[2] State Royalty	[3] Sever. Conser. tax	[4] Total Prop. tax	[5] Total Oper. Costs	[6] Total Deprec.	[7] Total Acquis. Costs	[8] Windfall Profits Tax
1982	$16,456	$1,553	$1,581	$276	$940	$602	$1	$2,018
1983	$15,470	$1,448	$1,494	$307	$1,101	$780	$1	$1,018
1984	$14,955	$1,409	$1,393	$358	$1,259	$998	$1	$412
1985	$15,136	$1,390	$1,389	$397	$1,449	$1,093	$1	$70

Fiscal Year	[9] Uncap. Interest Expense	[10] Explore. Costs	[11] Admin. Costs	[12] Other Deducs.	[13] Total Deducs.	[14] State Taxable Net Income	[15] Corp. Petrol Income Tax	[16] Federal Taxable Income
1982	$721	$191	$236	$149	$8,268	$8,188	$669	$7,519
1983	$676	$204	$252	$142	$7,423	$8,047	$236	$7,811
1984	$614	$219	$265	$136	$7,064	$7,891	$265	$7,626
1985	$566	$234	$278	$130	$6,997	$8,139	$169	$7,970

Fiscal Year	[17] Federal Corp. Income Tax	[18] Oil Industry Alaska Profits	[19] Total Federal Tax	[20] Total State Tax & Royalty	[21] ----Share of Oil Income--- State	[22] Federal	[23] Industry
1982	$2,098	$5,421	$4,116	$4,079	30%	30%	40%
1983	$2,140	$5,671	$3,158	$3,485	28%	26%	46%
1984	$2,242	$5,384	$2,654	$3,425	30%	23%	47%
1985	$2,343	$5,627	$2,413	$3,345	29%	21%	49%

SOURCES AND FORMULAS –

Column [1]: Vincent Wright, chief of research, to Mary Nordale, Commissioner of Revenue, Memorandum of October 31, 1985, Table 3.

Columns [2] & [3]: January 1986 DOR Revenue Sources, p. 39.

Columns [4] to [12]: Vincent Wright, loc. cit.

Column [13]: sum of columns [2] through [12]

Column [14]: column [1] - column [13]

Column [15]: Revenue Sources, p. 39.

Column [16]: column [14] - column [15].

Column [17]: column [16] * (production-weighted average tax rate -- 1982 = .279; 1983 = .274; 1984 = .294; 1985 = .294). Company effective rates for '82-84 from R. McIntire and R. Folen, "Corporate Income Taxes in the Reagan Years," Oct. 1984, pp. 32-36; '85 estimated by OMB.

Column [18]: column [16] - column [17].

Column [19]: column [8] + column [17].

Column [20]: sum of columns [2], [3], [4], and [15].

Column [21]: (column [18])/(sum of columns [18], [19], and [20]).

Column [22]: (column [19])/(sum of columns [18], [19], and [20]).

Column [23]: (column [20])/(sum of columns [18], [19], and [20]).

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