

KUPARUK RIVER UNIT  
THIRD EXPANSION OF THE UNIT AREA  
THIRD EXPANSION OF THE KUPARUK PARTICIPATING AREA

DECISION AND FINDINGS OF THE COMMISSIONER  
ALASKA DEPARTMENT OF NATURAL RESOURCES

MAY 13, 1988

AGO 10166468

## KUPARUK RIVER UNIT

### THIRD EXPANSION OF THE UNIT AREA THIRD EXPANSION OF THE KUPARUK PARTICIPATING AREA

#### I. INTRODUCTION AND BACKGROUND

The Kuparuk River Unit is an oil and gas unit located on the Alaska North Slope immediately west of the Prudhoe Bay Unit. It was approved by the Alaska Department of Natural Resources on March 26, 1982, effective retroactive to December 1, 1981.

The original application for the Kuparuk River Unit proposed the unitization of 100 State of Alaska leases, all of which were executed on 1963 Division of Lands (DL-1) lease forms. The original unit area consisted of approximately 237,776 acres, and contained about 30 exploratory wells and 40 development wells at the time of approval.

The Kuparuk River Unit Agreement was modeled after the State of Alaska's Standard Unit Agreement form, which provides for operation of the leases within the unit area as a single entity without regard to lease boundaries and diverse ownership of the leases. The unit is operated in conformance with annual plans of development and operation approved by the Department of Natural Resources. ARCO Alaska, Inc. is the Unit Operator of the Kuparuk River Unit.

On December 13, 1981, production commenced from the Kuparuk River Reservoir, the primary producing interval underlying the Kuparuk River Unit. Start-up production was about 100 thousand barrels of oil per day.

On March 26, 1984, the Department of Natural Resources approved the first expansion of the Kuparuk River Unit Area to include all or portions of an additional 28 State of Alaska leases. The expanded unit area after this expansion comprised approximately 294,986 acres. Five of the leases included in that expansion were leased in the State of Alaska Oil and Gas Lease Sale 31 (September, 1980), and reserved a net profit share of 30 percent to the State, as well as providing for a 20 percent royalty. The Department of Natural Resources approved the first expansion of the Kuparuk River Unit Area as submitted, conditional upon the subsequent submittal and approval of an amendment of the Kuparuk River Unit Agreement to accommodate the terms of the added Net Profit Share leases. This amendment was submitted to the Department on May 6, 1985, and was approved on May 17, 1985.

On May 31, 1985, a second expansion of the Kuparuk River Unit was approved by the Department to include all or portions of four State of Alaska leases. The unit area after this expansion comprised approximately 306,872 acres, an

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addition of 11,886 acres. Three of the leases included in the second expansion were acquired in the State of Alaska Oil and Gas Lease Sale 39 (May 1983) and reserved a net profit share of 30 percent to the State, as well as providing for a 12.5 percent royalty. This May 31, 1985 Decision was amended on May 29, 1987 to exclude USS 4275 (an unleased Federal Tract within ADL 355023) from the Kuparuk River Unit and the Kuparuk Participating Area. Presently, the Kuparuk River Unit contains eight net profit share leases.

The Kuparuk Participating Area consists of the leases and portions of leases within the Kuparuk River Unit that have been determined to be underlain by hydrocarbons and capable of producing or contributing to production of hydrocarbons from the Kuparuk River Reservoir in paying quantities. Only leases that are either partially or wholly included within the Kuparuk Participating Area can have oil production from that reservoir allocated to them. Although there are apparently several prospective oil and/or gas reservoirs underlying the Kuparuk River Unit Area, the Kuparuk River Reservoir is the only hydrocarbon pool that is currently commercially productive. Other potential reservoirs, such as the West Sak Sands, so far have not been determined to be capable of production of hydrocarbons in paying quantities.

The initial Kuparuk Participating Area was approved by the Department of Natural Resources on March 26, 1982, and was subsequently determined to be retroactive to December 1, 1981. The participating area was established simultaneous with and as a part of the original Kuparuk River Unit Agreement. The first expansion of the Kuparuk Participating Area was approved on February 25, 1983 to include an additional two leases, for a total of all or portions of 63 leases comprising 125,796 acres, more or less.

The Kuparuk Participating Area was expanded a second time on May 31, 1985 to include all or portions of 17 oil and gas leases containing 18,034 acres. With this second expansion, the participating area presently encompasses 143,830 acres, more or less. Three of the leases added to the participating area reserve a net profit share to the State of Alaska.

## II. APPLICATION FOR THIRD EXPANSION OF KUPARUK RIVER UNIT AREA AND THIRD EXPANSION OF THE KUPARUK PARTICIPATING AREA

On January 26, 1988, ARCO Alaska, Inc., the Unit Operator, on behalf of itself and ten other Working Interest Owners, made an application for a third expansion of the Kuparuk River Unit Area to encompass all or portions of an additional three leases comprising 9,528 acres, for a total expanded Unit Area of 316,400 acres. Other Working Interest Owners include Amerada Hess Corporation, Amoco Production Company, BP Alaska Exploration, Inc., Chevron U.S.A., Inc., Exxon Corporation, Mobil Oil Company, Standard Alaska Petroleum Company, Texaco, Inc., and Union Oil Company of California. Two of the three leases proposed to be included within the Kuparuk River Unit Area as a result

of this third expansion are Net Profit Share leases acquired in the State of Alaska Oil and Gas Lease Sale 39 (May, 1983). These leases, ADL 355024 and ADL 355032, provide for a 30 percent net profit share and 12.5 percent royalty to the State. The third lease proposed in the unit expansion, ADL 365501, was acquired in the State of Alaska Oil and Gas Lease Sale 45A (September 1985) and reserves a 16 2/3 percent royalty to the State.

*This proposed expansion of the Kuparuk River Unit Area would conform and modify most provisions of the individual oil and gas leases to be added to the unit so that development of the area could be conducted on a unit-wide basis rather than on a lease-by-lease basis. Approval of the expansion would extend the joint, cooperative development of the unit area in conformance with approved Unit Plans of Development and Operation.*

An application to expand the Kuparuk Participating Area was submitted to the Department of Natural Resources at the same time as the application to expand the Kuparuk River Unit Area. This application for expansion of the participating area proposes to add all or portions of 18 oil and gas leases containing approximately 16,960 acres to the Kuparuk Participating Area, thereby expanding the Kuparuk Participating Area to 160,790 acres, more or less. One of the leases proposed to be added to the Kuparuk Participating Area in this expansion is a Net Profit Share lease, ADL 355032. The other leases in the proposed expansion of the Participating Area reserve a 12.5 percent royalty to the State.

Public notice of the proposed Third Expansion of the Kuparuk River Unit Area and Third Expansion of the Kuparuk Participating Area was published in the Anchorage Times on February 9, 1988 and in the Barrow Sun on February 18, 1988. Copies of the proposed expansions were also provided to interested parties in conformance with 11 AAC 83.311, as well as to the Alaska Department of Environmental Conservation, the Alaska Department of Fish and Game, the Alaska Department of Natural Resources, Division of Land and Water Management, and the Alaska Oil and Gas Conservation Commission.

During the 30 day public notice period allowed under 11 AAC 83.311, a comment was received from the Alaska Department of Fish and Game, Habitat Division, but no objection was made to the expansion of the Kuparuk River Unit area at this time.

Both the Third Expansion of the Kuparuk River Unit Area and the Third Expansion of the Kuparuk Participating Area are proposed to be effective as of 12:01 a.m. June 1, 1988.

### III. GEOLOGICAL AND ENGINEERING CHARACTERISTICS, AND PREVIOUS EXPLORATION OF THE PROPOSED EXPANSION AREAS

Staff members of the Division of Oil and Gas met with the Kuparuk River Unit Operator and other Working Interest Owners to discuss nonconfidential

information in support of the application for expansion of the Kuparuk River Unit Area and the Kuparuk Participating Area. At a subsequent meeting, the Unit Operator presented additional engineering information and confidential proprietary seismic data and composite net pay contour maps applicable to the proposed expansion areas. In addition, the Unit Operator stated that wells have already been drilled as tract operations in portions of the proposed unit expansion area (Tract 10, ADL 25532).

Upon review of the geological, geophysical, and engineering data submitted in support of the proposed expansion, the Department of Natural Resources determined that ADL 355024, ADL 355032 and ADL 365501 are justified for inclusion within the unit under the terms of the applicable regulations governing formation and expansion of an oil and gas unit (11 AAC 83.301 - 11 AAC 83.395) and the terms and conditions under which the lands were leased from the State of Alaska.

With respect to the expansion of the participating area, currently existing data warrant the expansion of the Kuparuk Participating Area to include all or portions of ADLs 25522, 25524, 25532, 25627, 25636, 355032 and 365501. However, the existing information does not warrant the inclusion of portions of ADLs 28243, 28248, 25660, 25661, 25663, 25664, 25665, 25666, 25668, 25669 and 355023 into the Participating Area as requested in the application. The portions of these ADLs may be considered for inclusion into the participating area at a later date when more information concerning the underlying hydrocarbons becomes available.

#### IV. DISCUSSION OF DECISION CRITERIA

In accordance with the applicable regulations (11 AAC 83.301 - 11 AAC 83.395), the Commissioner will approve an expansion of an existing oil and gas unit if she finds that such expansion is necessary or advisable to protect the public interest. In determining whether a proposed expansion is in the public interest, the Commissioner will consider the following criteria: (1) the conservation of all natural resources; (2) the prevention of economic and physical waste; and (3) the protection of all parties of interest, including the State. A discussion of these criteria follows.

(1) The Conservation of All Natural Resources. Unitized development of and production from a reservoir is universally recognized as a prudent conservation mechanism. By unitizing a field-wide area, drilling operations can be optimized and surface impacts can be reduced. Unitized development can also provide a structure for several parties to combine their expertise and resources to develop and produce an area that might be beyond the capabilities of a single party to develop or produce, especially if the prospective area is only marginally economic.

There are sufficient geological, geophysical, and engineering data to indicate the probable existence of economically producible hydrocarbon reserves underlying portions of leases ADL 355024, ADL 355032 and ADL 365501 which have been proposed for inclusion in the unit and participating areas. There is also considerable evidence that these reserves would only be marginally economic under current technological and market conditions, and in fact may never meet a strict "commercial quantities" definition if developed on a lease-by-lease basis. As a result, the inclusion of these tracts into the producing Kuparuk River Unit does promote the conservation of all natural resources by allowing production and cost sharing to be extended to these tracts through the Unit Agreement and Unit Operating Agreement.

(2) The Prevention of Economic and Physical Waste. Proper allocation of hydrocarbons to each affected lease through cost-sharing formulas and integrated exploration and development plans help ensure that physical and economic recovery from all reservoirs underlying the unit area is maximized.

As noted above, the benefits of unitization are especially applicable to marginally economic areas, particularly near the periphery of reservoirs. In such areas, reserves that would not economically be producible on their own are often gained through unitized operations. Capital savings as a result of the consolidation of reservoir evaluation and management and elimination of the need for duplication of surface facilities allows less profitable areas of a reservoir to be tested, developed, and produced. Pressure maintenance and secondary and tertiary recovery operations applied on a reservoir-wide basis also increase ultimate recovery and improve marginal development economics.

In the approved expansion areas, the State believes that prevention of economic and physical waste will be accomplished by the accelerated development and production of hydrocarbon reserves if the affected tracts are committed to the Kuparuk River Unit.

(3) The Protection of All Parties of Interest, Including the State. A primary goal of unitization is the protection of all parties having an economic interest in one or more common hydrocarbon accumulations. Unitization conserves natural resources and prevents economic waste by minimizing the many competing interests for delineation and operation of common reservoirs within the area, while retaining separate interests and accounts for equitable sharing of costs and benefits based on original ownership. By ratification of the Unit Agreement, all parties are assured an allocation of costs and production commensurate with the value of their leases.

The expansion of the Kuparuk River Unit extends these benefits and protection to leases considered likely to be capable of contributing to production from the Kuparuk River Reservoir. The State's economic interest is protected by maximizing any physical recovery of hydrocarbons that may exist in the area. Maximizing hydrocarbon recovery in turn assures that the production-based

revenue accruing to the State is also maximized. Accelerated development of the affected leases will contribute to the economic well-being of the State as a result of the expedited receipt of the revenues involved, and the additional subsurface information obtained due to early development and production of the area. Unitized operations within the expansion areas also minimize impacts to the area's cultural, biological, and environmental resources.

With respect to the allowance for field costs expressed in Article 7.5 and Appendix I of the Kuparuk River Unit Agreement, the inclusion of all or portions of ADL 355024, ADL 355032 and ADL 365501 into the Kuparuk River Unit and Participating Area does not alter or amend the terms or conditions of Paragraph 7, Paragraph 37 and Paragraph 38(b) of the leases. In particular, Paragraph 7 of the leases provides as follows:

"The state's royalty share of the unit production allocated to each separately owned tract must be regarded as royalty to be distributed to and among, or the proceeds of it paid to, the state, free and clear of all unit expenses and free of any lien for them. Under this provision, the state's royalty share of any unit production allocated to the leased area will be regarded as royalty to be distributed to, or the proceeds of it paid to, the state, free and clear of all unit expenses (and any portion of those expenses incurred away from the unit area), including, but not limited to, expenses for separating, cleaning, dehydration, gathering, saltwater disposal, and preparing oil, gas, or associated substances for transportation off the unit area, and free of any lien for them."

Therefore, no field cost allowance will be made for production from those leases even after unitization.

#### V. FINDINGS AND DECISION

Considering the facts discussed in this document and the administrative record, I hereby find:

1. Based on the available geological, geophysical and engineering data submitted to the State and discussions with the Unit Operator, the expansion of the Kuparuk River Unit Area as originally proposed is proper and justified. The area for expansion of the Kuparuk River Unit Area based upon currently available data consists of the following lands:

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T13N, R8E, U.M., Sections 19 - 22, 28 - 32: all  
(ADLs 355032 and 365501); T14N, R8E, U.M.,  
Sections 24, 25, and 36: all (ADL 355024);  
T14N, R9E, U.M., Sections 19, 30, and 31: all  
(ADL 355024).

The approved Kuparuk River Unit Area as of June 1, 1988 shall be as set out in Exhibit A attached to the Application to Expand the Kuparuk Participating Area and Kuparuk River Unit Area.

The Kuparuk River Unit Agreement provides for further expansions and contractions of the unit area in the future as warranted by additional information. Therefore, the public interest and the correlative rights of all parties affected by this expansion, including the State, are protected.

The inclusion of these lands into the Kuparuk River Unit does not alter or amend the terms and conditions of Paragraph 7, Paragraph 37 and Paragraph 38(b) of the appropriate leases.

2. Approval of this expansion of the Kuparuk River Unit Area is necessary and advisable to protect the public interest. Lessees' ratification of the Unit Agreement will ensure a fair and equitable return to the State from any production of hydrocarbons from the expanded unit area.
3. Simultaneous with this expansion of the Kuparuk River Unit Area, the available geological, geophysical and engineering data and discussions with the Unit Operator make it proper and justified to expand the Kuparuk Participating Area to include the following lands:

T12N, R8E, UM, Sec. 3: all; Sec. 4: E/2;  
Sec. 10: N/2.

T12N, R10E, UM, Sec. 4: S/2, NW/4; Sec. 9: E/2;  
Sec 10: W/2, SE/4; Sec. 15: N/2, SE/4; Sec.16:  
NE/4.

T13N, R8E, UM, Sec. 22: all; Sec. 23: NW/4;  
Sec. 27: all; Sec. 28: S/2; Sec. 32: all;  
Sec. 33: all; Sec. 34: W/2.

The Kuparuk River Unit Agreement provides for further expansions and contractions of the participating area in the future as warranted on the basis of further drilling or by additional information. Therefore, the public interest and the correlative rights of all parties affected by this expansion, including the State, are protected.



4. Within 60 days of the Effective Date of this Decision and Findings, the Unit Operator shall submit to the State updated Exhibits A, B, C, D and F to the Kuparuk River Unit Agreement reflecting the approved areas as set out in this Decision and Findings.
5. In accordance with Article 7.3 of the Kuparuk River Unit Agreement and 11 AAC 83.371(b), the Department acknowledges the Exhibit Q-1 submitted as part of this application. This Exhibit Q-1 sets forth the Tract Participations and Cost Participations which are in effect as among the Working Interest Owners of the Kuparuk Participating Area pursuant to the provisions of the Kuparuk River Unit Operating Agreement.
6. Diligent exploration and delineation of all reservoirs underlying the proposed expansion area will be conducted by the Unit Operator under the Kuparuk River Unit Plans of Development and Operation approved by the State.
7. The economic benefits to the State as a result of unitized development and production of the expanded Kuparuk River Unit Area outweigh the economic costs to the State in approving such expansion.
8. Expansion of the Kuparuk River Unit Area to include the additional leases will provide for the increased conservation of all natural resources including hydrocarbons, gravel, sand, water, wetland, and other valuable habitat.
9. Expansion of the Kuparuk River Unit to include the additional leases will reduce the amount of surface lands and fish and wildlife habitat that would otherwise be used if the area were to be explored and developed on a lease-by-lease basis. This reduction in the impact on the environment and on subsistence activity in the area is in the public interest.
10. Prior to the construction of permanent facilities for development of or production from any of the tracts added to the Kuparuk River Unit Area through this expansion, the Working Interest Owners will present to the Department of Natural Resources and the Department of Fish and Game a document summarizing caribou usage on the expanded unit area. All Plans of Development and Operation, and updates of such Plans, for the expanded unit area must take such caribou usage patterns into account. Considerations of caribou usage in the Kuparuk River Unit Plans of Development and Operation and updates to such Plans, should be integrated with caribou usage considerations for unit areas adjacent to the Kuparuk River Unit Area to the extent possible.
11. Preservation of sensitive wetland habitat shall be addressed in all Kuparuk River Unit Plans of Development and Operations, and updates to such Plans, with emphasis being placed on minimizing cross-drainage problems.

12. At this time, the Third Expansion of the Kuparuk River Unit Area is consistent with the Coastal Zone Management Plan.
13. Expansion of the Kuparuk River Unit to include the additional leases will not limit or diminish access to public and navigable waters beyond any limitations already contained in the oil and gas leases proposed to be added to the unit area.
14. This expansion of the Kuparuk River Unit Area will be effective as of 12:01 a.m. June 1, 1988.

For these reasons and subject to the conditions and limitations noted, I hereby approve the Third Expansion of the Kuparuk River Unit and the Third Expansion of the Kuparuk Participating Area.

James E. Eason  
James E. Eason, Director  
Division of Oil and Gas

May 13, 1988  
Date

For: Judith M. Brady, Commissioner  
Alaska Department of Natural Resources

Attest: William Van Rhee

Date: May 13, 1988

Attest: Michael D. Kotowski

Date: May 13, 1988

Attachment: Delegation of Authority from Commissioner, Alaska Department of Natural Resources, to Director, Division of Oil and Gas, dated May 13, 1988.

DELEGATIONS OF AUTHORITY FOR THE DIVISION OF OIL AND GAS

<u>Regulatory Citation</u>	<u>Purpose or Action</u>	<u>Authority Vested in</u>	<u>Authority Delegated to</u>
11 AAC 82.400	Parcels Offered for Competitive Lease	Commissioner	No Delegation
11 AAC 82.405	Method of Bidding	Commissioner	No Delegation
11 AAC 82.410	Minimum Bid	Commissioner	No Delegation
11 AAC 82.445	Incomplete Bids	Commissioner	No Delegation
11 AAC 82.450	Rejection of Bids	Commissioner	No Delegation
11 AAC 82.455	Tie Bids	Commissioner	No Delegation
11 AAC 82.460	Additional Information	Commissioner	No Delegation
11 AAC 82.465	Award Leases	Commissioner	Director, Div. Oil & Gas (DOG)
11 AAC 82.470	Issue Leases	Commissioner	Director, DOG
11 AAC 82.475	Bid Deposit Return	Commissioner	Director, DOG
11 AAC 82.600	Required Bonds	Commissioner	Director, DOG
11 AAC 82.605	Approve/Deny Assignments of Oil and Gas Leases	Commissioner	Director, DOG
11 AAC 82.610	Segregate Leases	Commissioner	Director, DOG
11 AAC 82.620	Transfer of a Lease, Permit or Interest as a Result of Death	Commissioner	Director, DOG
11 AAC 82.625	Eff. Date of Assignments	Commissioner	Director, DOG
11 AAC 82.635	Surrenders	Commissioner	Director, DOG
11 AAC 82.640	Survey Requirement	Commissioner	No Delegation
11 AAC 82.645	Conforming Protracted Description to Official Surveys	Commissioner	No Delegation
11 AAC 82.650	Control of Lease Boundaries	Commissioner	No Delegation
11 AAC 82.660	Excess Area; Partial Termination	Commissioner	No Delegation
11 AAC 82.665	Rental and Royalty Relief	Commissioner	No Delegation
11 AAC 82.700	Taking Royalty in Kind	Commissioner	No Delegation
11 AAC 82.705	Bidding Method	Commissioner	No Delegation

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11 AAC 82.710	Notice of Sale	Commissioner	No Delegation
11 AAC 82.800	Production Records	Commissioner	No Delegation
11 AAC 82.805	Test Results	Commissioner	No Delegation
11 AAC 83.153	Well Confidentiality	Commissioner	Director, DOG
11 AAC 83.158	Approve/Deny Lease Plan of Operations	Commissioner	Director, DOG
11 AAC 83.303	Unit Agreement Approval	Commissioner	Director, DOG
11 AAC 83.306	Accept Application for Unit Agreement Approval	Commissioner	Director, DOG
11 AAC 83.311	Publish Public Notice of Unit Agreement Application	Commissioner	Director, DOG
11 AAC 83.316	Approve/Deny Unit Agreement	Commissioner	No delegation
11 AAC 83.326	Require or Accept Nonstandard Unit Agreement Language	Commissioner	No delegation
11 AAC 83.328	Mandate Unitization (Involuntary Unitization)	Commissioner	No delegation
11 AAC 83.331	Approve/Deny Change in Unit Operator	Commissioner	Director, DOG
11 AAC 83.336	Grant Extension of Unit Term; Grant Suspension of Operations (Force Majeure); Terminate Unit	Commissioner	No delegation
11 AAC 83.341	Approve/Deny Plan of Exploration	Commissioner	Director, DOG
11 AAC 83.343	Approve/Deny Plan of Development	Commissioner	Director, DOG
11 AAC 83.346	Approve/Deny Plan of Operations	Commissioner	Director, DOG
11 AAC 83.351	Approve/Deny Participating Area	Commissioner	Director, DOG
11 AAC 83.356	Expand/Contract Unit Area	Commissioner	Director, DOG
11 AAC 83.361	Certify Wells as Capable of Production in Paying Quantities	Commissioner	Director, DOG
11 AAC 83.371	Approve/Deny Allocation of Cost and Production Formulas	Commissioner	Director, DOG

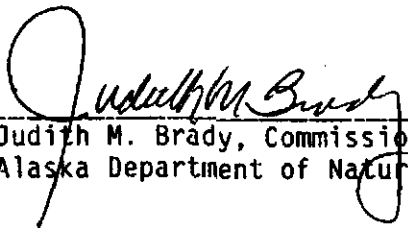
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11 AAC 83.373	Sever Leases	Commissioner	Director, DOG
11 AAC 83.374	Declare Unit in Default	Commissioner	No delegation
11 AAC 83.383	Notation of Approval on Joinder	Commissioner	Director, DOG
11 AAC 83.385	Modification of Unit Agreement	Commissioner	Director, DOG
11 AAC 83.393	Approval of Federal or Private Party Unit Agreements	Commissioner	No delegation

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I hereby delegate the authority vested in me through AS 38.05.180 to the Director of the Division of Oil and Gas as noted above. This delegation of authority is effective until revoked by me.

  
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Judith M. Brady, Commissioner  
Alaska Department of Natural Resources

5/13/88  
Date

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