SECTION V

REVIEW AND ANALYSIS OF COMMENTS RECEIVED

Section V Review and Analysis of Comments Received

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Stipulation No. 5, Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Subsistence Activities.

Stipulation No. 6, Permanent Facility Siting in the Vicinity of Cross Island.

Stipulation No. 7, Planning for Activities Offshore the Arctic National Wildlife Refuge.

Stipulation No. 8, OCS Pipelines Offshore the Arctic National Wildlife Refuge.

Stipulation No. 9, Protection of Polar Bears From Proposed Development Offshore the Arctic National Wildlife Refuge.

ITL No. 22, Information on Activities on the Arctic National Wildlife Refuge.

ITL No. 23, Information on Consultation on Activities Offshore the ANWR.

ITL No. 5, Information on Bird and Marine Mammal Protection.

ITL No. 11, Information on the Spectacled Eider and Steller's Eider.

ITL No. 12, Information on Sensitive Areas To Be Considered in the Oil-Spill Contingency Plans (OSCP).

ITL No. 15, Certification of Oil-Spill Financial Responsibility for Offshore Pipelines Offshore the ANWR.

ITL No. 18, Information on Offshore Pipelines.

c. Text Revisions

B. STATEMENTS, COMMENTS, AND RESPONSES

1. Statements Opposing or Supporting Sale 170
2. Comments and Responses
3. Public Hearing Comments

Organizations and Individuals with Written Comments Receiving Responses in the FEIS

ASNA	=	Arctic Slope Native Association, Limited
AWR	=	Alaska Waveriders
Bennett	=	Ron Bennett of Andover, Mass.
BJG	=	Bobbie Jo Greenland of Old Crow, Yukon
BPX	=	BP Exploration
Carter	=	James R. Carter of Anchorage, Ak.
Chriss	=	Dean M. Chriss of Wickliffe, Ohio
ERRC	=	Ehdiitat Renewable Resource Council, Aklavik, Yukon
FWS	=	U.S. Department of the Interior, Fish and Wildlife Service
GTC	=	Gwich'in Tribal Council of Ft. McPherson, Northwest Territories
Lyons	=	Steven Lyons, Anchorage, Ak.
MMC	=	Marine Mammal Commission
Miller	=	Pamela A. Miller, of Anchorage, Ak.
Naghski	=	David Naghski of Cincinnati, Ohio
NOAA	=	National Oceanic and Atmospheric Administration
NSB	=	North Slope Borough, Office of the Mayor (2 ltrs 7/15 and 7/25/97)
PCMB	=	Porcupine Caribou Management Board, Whitehorse, Yukon
SOA	=	State of Alaska, Office of the Governor
TFA	=	Trustees for Alaska et al., of Anchorage, Ak.
USGS	=	United States Geological Survey
UTP	=	Union Texas Petroleum

Public Hearings

NPH	=	Nuiqsut Public Hearing Transcript
APH	=	Anchorage Public Hearing Transcript
KPH	=	Kaktovik Public Hearing Transcript
BPH	=	Barrow Public Hearing Transcript

V. REVIEW AND ANALYSIS OF COMMENTS RECEIVED

A. INTRODUCTION:

1. Summary of Comments on the Draft EIS (DEIS):

During the DEIS comment period, various State, Federal, and local governmental agencies, organizations, communities, and individuals provided written statements and oral testimonies. The only comments received from the oil industry were written comments from BP Alaska Exploration, Union Texas Petroleum, the Alaska Oil and Gas Association, and the Alaska Support Industry Alliance. More than 50 comments were received from the Teetl'it Gwich'in Council; more than 40 comments were received from individuals and representatives of environmental organizations. There were 134 written comments received, 22 of which had comments that required a written response. Public hearings were held on the DEIS in the communities of Nuiqsut, Kaktovik, and Barrow and the city of Anchorage. Twenty-three individuals testified at these hearings. The staff analysts responded to 227 separate comments derived from written submissions and 41 comments from oral testimony.

Of the 227 written comments responded to, 72 were from Federal Agencies, 4 were from the oil and gas industry, 9 were from the State of Alaska, 21 were from the North Slope Borough (NSB), 16 were from Native organizations and communities, and 67 were from environmental organizations.

All oral-testimony comments that warranted a response, because they raised substantive issues, were from Native Alaskans or employees of Native organizations and/or communities. The comments from Native organizations and individuals were almost entirely in opposition to the proposed lease sale. Comments received from the State supported MMS working directly with North Slope communities in resolving their concerns.

Statements and oral testimonies requiring responses are noted in Sections V.B.2 and 3, respectively. The primary issues raised during the DEIS comment and public hearings period addressed the following concerns:
(1) The need for a 50-mile (mi) deferral alternative around Cross Island.
(2) The lack of a 50-mi deferral alternative around Kaktovik, and that any Kaktovik deferral should reach to the Staines River.
(3) Opposition to any leasing offshore the Arctic National Wildlife Refuge (ANWR); all blocks in the area offshore of the ANWR should be permanently deleted from any Beaufort Sea lease sales; the cumulative effects from oil development and potential oil spills would threaten the ANWR; potential infrastructure effects on the ANWR; and concerns that effects of offshore development and facilities design in core caribou calving areas in the ANWR.
(4) The MMS downplayed the importance of traditional knowledge in the DEIS.
(5) The communities need impact assistance from anticipated development and in evaluating proposed Federal activities.
(6) The concerns about the inability to clean up oil spills in ice conditions; effects of noise from seismic activities and from oil spills on bowhead whales and other marine mammals, and effects on subsistence-harvest activities.
(7) The effects of industrial activity on polar bears.
(8) The concerns with unproven technology to construct an arctic subsea pipeline.

2. Changes to the EIS in response to Comments on the DEIS:

a. Alternatives: Two alternatives have been added to the Final EIS (FEIS) (Secs. II.D and E) and are analyzed in Sections IV.E and IV.F. These alternatives are the Cross Island Area Alternative (Alternative IV) and the Area Offshore of the ANWR Alternative (Alternative V).

(1) Alternative IV, Cross Island Area Alternative: The Cross Island Area Alternative would defer 43 blocks out of the 363 offered by Alternative I and 51,251 hectares (ha) out of 688,000 ha (Fig II.D-1). The deferred area comprises about 7 percent of the area offered by Alternative I. Alternative IV.a would offer for leasing 320 blocks or 636,749 ha.

This deferral was requested by the Alaska OCS Region Offshore Advisory Committee (AOAC), the City of Nuiqsut, the NSB, the Arctic Slope Native Association, and environmental groups. The area proposed for deferral is designed to provide a buffer within a defined 10-mi radius around Cross Island—a location viewed by the community of Nuiqsut as their primary staging and harvest area for the bowhead whale and other marine mammals—to minimize space use and potential noise disturbance conflicts between petroleum activities and subsistence whaling by the residents of Nuiqsut. The blocks offered in the Cross Island Alternative have been offered in other OCS lease sales and lie immediately offshore of active State and Federal leases, including the Northstar Unit. Currently, the U.S. Department of Defense (USDOD), U.S. Army, Corps of Engineers (COE) is in the process of issuing a developmental EIS for the Federal portion of those resources produced from the Northstar Unit. Alterative IV.b analyzes protective mitigating measures for the Cross Island area in lieu of deferral.

(2) Alternative V, Area Offshore of the ANWR Alternative: This alternative would defer 122 blocks out of the 363 offered by Alternative I and 250,164 ha out of 688,000 ha (Fig II.E-1). The deferred area

comprises about 36 percent of the area offered by Alternative I. Alternative V would offer for leasing 320 blocks or 636,749 ha.

This alternative analyzes two options to protect areas offshore the Refuge. Alternative V.a analyzes the deferral of an area offshore the ANWR extending from the Federal/State OCS boundary out to the seaward limit of the sale area, from the eastern limit of the sale area (extending to 12 mi west of the community of Kaktovik) westward to a point approximately 146° W. longitude. This deferral area includes all of the Kaktovik Deferral Alterative (Alternative III) analyzed in the DEIS and additional areas to the west and north to 146° W. longitude. (The Kaktovik Deferral, Alternative III, would offer 278 blocks or 519,419 ha). Alternative V.b analyzes three proposed new stipulations and three Information to Lessee (ITL) clauses developed for the area offshore the ANWR in lieu of deferral.

More than 40 individuals raised the issue of protecting the ANWR, largely in response to a Sierra Club letter on this subject. More than 50 individuals responded on behalf of the Teetl'it Gwich'in Council to protect the Porcupine Caribou Herd (PCH). The U.S. Department of the Interior (USDOI), Fish and Wildlife Service (FWS) raised concerns regarding (1) compliance with the Refuge Conservation Plan, which prohibits activities within the Refuge without FWS permission, and (2) the effects of oil spills on the Refuge. At the AOAC meeting in August , the FWS also requested that this area be deferred until more information is available on the effects of OCS operations off the ANWR. This deferral alternative was requested by the AOAC, the City of Kaktovik, the NSB, the Arctic Slope Native Association, and environmental groups.

b. Mitigating Measures: For the complete text of the mitigating measures, see Section II.F. Significant changes in mitigating measures between the Draft and Final EIS's consisted of a major addition to one existing stipulation, the development of four new stipulations and two new ITL's, and revisions to four ITL's, based on comments received on the DEIS and from recommendations made by the AOAC.

Stipulation No. 4, Industry Site Specific Bowhead Whale-Monitoring Program. This stipulation was modified from the Draft EIS in response to a suggestion by National Oceanic and Atmospheric Administration (NOAA) to revise the range of avoidance behavior of bowhead whales to indicate subsistence hunters' observations of effects out to 35 mi (from 24 kilometers [km]). No other changes were made to this stipulation.

Stipulation No. 5, Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Subsistence Activities. The principal difference in this stipulation from the DEIS version is a change to the title of the stipulation to recognize that this measure is really a conflict avoidance stipulation, and a change to the wording in paragraph 2. The change identifies mechanisms to the lessee, such as a conflict avoidance agreement, to indicate that lessees make every reasonable effort to achieve consultation with affected communities and the NSB to assure that exploration, development, and production activities are compatible with whaling and other subsistence- hunting activities and will not result in unreasonable interference with subsistence harvests. No other changes were made to this measure.

Stipulation No. 6, Permanent Facility Siting in the Vicinity of Cross Island. This new stipulation was developed for Alternative IV, the Cross Island Area Deferral Alternative. Stipulation 6 prohibits permanent OCS production facility siting within a defined 10-mi radius around Cross Island, unless the lessee can demonstrate that permanent facility site will not preclude reasonable subsistence access for hunting of bowhead whales. It requires lessees to follow process and requirements for consultation with the Alaska Eskimo Whaling Commission (AEWC) and the NSB and mitigation of unreasonable conflicts established under Stipulation 5. This stipulation was requested by the State and the NSB in their comments on the DEIS and agreed to by the AOAC. Stipulation 6 conforms to the State of Alaska's approach for leasing in the Beaufort Sea.

Stipulation No. 7, Planning for Activities Offshore the Arctic National Wildlife Refuge. This new stipulation was developed for Alternative V, the Area Offshore of the ANWR, to provide for protection of wildlife and habitats (both land and marine), subsistence, recreation, and other concerns identified by the FWS, environmental groups, the Gwich'in Tribal Council, and individual commenters on the DEIS. This stipulation applies to specific blocks located in the eastern Beaufort Sea offshore the ANWR and emphasizes restrictions or prohibitions on activities with and adjacent to the ANWR. It requires that exploration and development and production plans must contain a description of proposed equipment-staging areas, infrastructure, and other related activities and that lessees demonstrate the ability to stage and mobilize equipment, including oil-spill-response equipment, from locations other than the ANWR.

Stipulation No. 8, OCS Pipelines Offshore the Arctic National Wildlife Refuge. This new stipulation was developed for Alternative V, the Area Offshore of ANWR, to provide for protection of wildlife and habitats (both land and marine), subsistence, recreation, and other concerns identified by the FWS, environmental groups, the Gwich'in Tribal Council, and individual commenters on the DEIS. This stipulation applies to specific blocks located in the eastern Beaufort Sea offshore the ANWR, and emphasizes

that production from an OCS facility offshore the Refuge will not be allowed until a subsea pipeline has been constructed in offshore areas of the Beaufort Sea or areas with similar arctic conditions. It requires that any proposal to construct a pipeline must address the methods for construction, maintenance, monitoring and repair of the pipeline under limiting seasonal conditions and restricted access from the Refuge.

Stipulation No. 9, Protection of Polar Bears From Proposed Development Offshore the Arctic National Wildlife Refuge. This new stipulation was developed at the request of FWS concerns with regard to oil spills due to subsea pipelines and polar bear protection during development. This new stipulation addresses the need for information on effects to polar bears to be included in a Development and Production Plan (DPP) environmental assessment. The purpose of this stipulation is to require lessees to provide information on measures to be taken to minimize effects to polar bears as part of their DPP; and that lessees may be required to conduct project-specific surveys related to polar bears. This stipulation applies to specific blocks located in the eastern Beaufort Sea offshore the ANWR.

ITL No. 22, Information on Activities on the Arctic National Wildlife Refuge. This new ITL was developed by MMS to highlight how existing regulations provide the mechanism to protect the area offshore the ANWR Its purpose is to inform lessees of land use restrictions within the ANWR, and that the Refuge is managed by the FWS.

ITL No. 23, Information on Consultation on Activities Offshore the ANWR. This new ITL was developed by MMS to highlight how existing regulations provide the mechanism to protect the area offshore the ANWR. Its purpose is to inform lessees of MMS consultations with the FWS regarding any OCS pipelines to be constructed offshore the Refuge in formulating any special terms or measures necessary to protect the ANWR.

ITL No. 5, Information on Bird and Marine Mammal Protection. This ITL was modified from the DEIS as suggested by NOAA to delete the phrase ". . .that specific regulations must be applied for and in place and. . ." in paragraph 5. No other changes were made to this ITL.

ITL No. 11, Information on the Spectacled Eider and Steller's Eider. This ITL was modified from the DEIS at the request of the FWS to update the ITL to include the threatened status of the Steller's eider. No other changes were made.

ITL No. 12, Information on Sensitive Areas To Be Considered in the Oil-Spill Contingency Plans (OSCP). This ITL was changed from the DEIS to correspond to the State of Alaska's Sale 86 lessee advisory, to add the phrase ". . .and for their importance to subsistence harvest activities" to paragraph l. No other changes were made.

ITL No. 15, Certification of Oil-Spill Financial Responsibility for Offshore Pipelines Offshore the ANWR. This ITL was renamed and modified from the DEIS to incorporate proposed new regulatory requirements for certificates of financial responsibility. Reference to protection of the ANWR also is included in the measure, although this ITL applies across the board for Sale 170. The ITL was completely revised.

ITL No. 18, Information on Offshore Pipelines. This ITL was changed to indicate the new Memorandum of Understanding (MOU) date. No other changes were made to the ITL.

c. **Text Revisions:** The analyses in Section IV and the wording of stipulations and ITL's in Section II.F have been revised to reflect the concerns raised during the public comment period. Other text changes focused on major issues, as outlined in Section V.A.1. Of specific note was the addition of two new alternatives, (Alternative IV, the Cross Island Area and Alternative V, Area Offshore the ANWR) and the rewrite of those sections dealing with subsistence activities (Secs. III.C.2 and 3 and IV.B.9 and 10), the bowhead whale (Secs. III.B.5 and IV.B.6), and sociocultural activities related to environmental justice (Secs. IV.B.10). These sections incorporated new information dealing with the effect of noise (particularly on the bowhead whale) as well as sources of "traditional knowledge." Where comments warranted other changes or presented new or additional information, revisions were made to the appropriate text in the EIS; references to the revised sections are presented in responses to specific comments.

B. STATEMENTS, COMMENTS, AND RESPONSES:

1. Statements Opposing or Supporting Sale 170:

Of the 268 oral and written comments received on the DEIS, a decided majority were negative towards the sale as well as the document; the balance were informational in nature, with only written comments from industry plus one individual actively supporting the sale. Comments received on the DEIS that provided new or additional information or addressed the adequacy of descriptive material or analysis are responded to in the FEIS in Sections V.B.2, V.B.3, and V.C. Those comments that express only opposition or support for a lease sale are included in the decision documents (Sec. I.A) prepared to assist the Secretary of the Interior in making a decision on whether or not to hold a lease sale; they are not presented in this EIS. Following is a summary of concerns regarding the DEIS and reasons for not holding the sale.

Concerns Regarding the Draft EIS and Reasons for Opposing the Lease Sale Include:

Deferral Options and Sale Alternatives
-Lack of a 50-mi deferral buffer around Kaktovik
-Lack of a deferral buffer around Cross Island
-The no-sale alternative is inadequate
-Opposition to any leasing offshore the ANWR

Arctic National Wildlife Refuge
-Cumulative effects from oil development threaten the ANWR
-Coastal Plain endangered due to potential oil spills
-Offshore development will create pressure to open the ANWR
-Lack of lease stipulation prohibiting development on the ANWR

Sociocultural and Subsistence
-Development would contaminate resources and destroy Inupiat culture
-The MMS downplayed the importance of traditional knowledge
-Communities want impact assistance
-Lack of input (peer review) into monitoring studies
-Native leaders want the formation of panels that will monitor industry activities

Infrastructure
-Subsea pipeline from eastern Beaufort an unacceptable risk
-Technology to construct an arctic subsea pipeline unproven
-Potential infrastructure effects on ANWR resources unacceptable
-Oil-transportation scenario unrealistic

Oil Spills
-Inability to clean up during periods of ice
-Effects on migrating bowhead whales
-Effects on other marine mammals
-Effects on fish
-Effects in general on subsistence harvest

Caribou
-Core calving area in the ANWR
-Effects of onshore development and facilities design
-Effects on caribou herd ranges and populations

Bowhead Whales
-Effects of noise on behavior (seismic activity)
-Lack of a seasonal drilling stipulation
-Effects of oil spills
-Quality of analysis and adequacy of data

Polar Bears
-Need for additional protection through expanded ITL's
-Effects of industrial activities and pollutants on denning areas
-Cumulative effects of oil and gas activities

Steller's and Spectacled Eiders
-Cumulative effects of industrial activities and pollutants

Fishes
-Effects of new causeways
-Effects of industrial activities on migration patterns
-Effects of industrial discharges

Water Quality
-Industrial discharges and effects on fish and wildlife

Other Issues
-Air quality (discharges and effects)
-No demonstrated need for the oil
-Effects on archeologic resources
-Climate change
-Coastal Zone Management conflicts
-Lack of stipulations governing (prohibiting) solid fill causeways.

Those Supporting the Sale and their Concerns: The Alaska Oil and Gas Association (AOGA), BP-Alaska Exploration (BPX), The Alaska Support Industry Alliance (The Alliance) and Union-Texas Petroleum (UTP), sent letters endorsing the Sale. The AOGA's comments were very supportive of Alternative I and urged that the tracts off the Refuge not be removed from the sale. The AOGA stated that mitigation is a better answer to conflict than sale deferrals. The BPX stated that the sale was of strategic importance to the U.S.; BPX also pointed out industry's evolving waste-management practices, technological advances, and planning activities. The Alliance also believes the sale is in the best interest of the U.S. and strongly supports Alternative I. The UTP supports offering Alternative I. Regarding deferring tracts of the ANWR, UTP states "it is difficult to justify the allocation of staff and funds to evaluate prospective tracts when there is no degree of certainty as to the availability of said tracts." The UTP also stated that the timeframe for conducting seismic surveys should be extended through September. A letter from one individual was received in support of the sale. Mr. A.M. Johnson wrote that Alaska residents would benefit economically from the sale, and that the oil industry's current ability to conduct "postage-stamp"-sized operations would reduce the impact on the environment.

2. Comments and Responses: The following is a listing of all organizations that provided written comments during the DEIS review period. The issues raised in these comments are responded to in Section V.C. Comments requiring a response either provided new or additional information to be incorporated into the FEIS or addressed the adequacy of written material in the analysis. Specific

comments in each letter are bracketed and numbered. The MMS responses to the specific comments follow each letter.

Federal Agencies
Marine Mammal Commission
U.S. Department Of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
National Ocean Service
U.S. Department of the Interior
Fish and Wildlife Service
U.S. Geological Survey
U.S. Environmental Protection Agency, Region 10

State Of Alaska
State of Alaska
Office of the Governor
Division of Governmental Coordination
Office of Management and Budget
Representative Reggie Joule, Alaska State Legislature, Juneau, Alaska

North Slope Borough and Local Communities
North Slope Borough
Office of the Mayor
Native Village of Barrow

Alaska Native Organizations
Alaska Eskimo Whaling Commission
Arctic Slope Native Association Limited
Barrow Whaling Captain's Association

Canadian Native Organization
Ehdiitat Renewable Resource Council, Aklavik
Gwich'in Tribal Council, Fort McPherson, Northwest Territories
Teetl'it Gwich'in Council, Fort McPherson, Northwest Territories (MMS received 23 copies of the same letter signed by 53 members of the Gwich'in tribe; they are recognized as a single unit)
Porcupine Caribou Management Board, Whitehorse, Yukon
Vuntut Gwitchin First Nation, Caribou Coordination Department, Old Crow Yukon

Industry
The Alaska Support Industry Alliance
Alaska Oil and Gas Association
BP Exploration (Alaska) Inc.
Union Texas Petroleum

Environmental Organizations
Alaska Emergency Response Team
Alaska Waveriders
Alaska Wilderness League
Sierra Club
Sierra Club, John Muir Chapter
Trustees for Alaska, et al.

Private Citizens
Ashby, Mark
Atharale, Anjali
Atharale, Neera
Atharale, Vinayak
Barrows, Jon
Benson, John P. and Linda K.
Bergner, Christine
Bishop, Debra
Brame, Scott
Bennett, Ron
Carter, James R.
Chriss, Dean M.
Clark, Jennifer
Coules, Dennis
Dale, Richard
Eyer, Steven D.
Fesler, Susan
Gregory, Alan
Greenland, Bobbie Jo
Heiman, Jeremy G.
Hunter, John
Isbister, David
Isbister, Marianne
Johnson, A.M.
Johnson, Eric
Lacey, Dave
Long, Bee
Lytle, Lili
Lyons, Steven
Mastin, Christine
Mavros, Steven
Mellinger, David K.
Miller, Pamela A.
Mollett, Nina
Moran, Philip
Naghski, David
Nicols, William
Olson, Marc
Opie, Meiti
Parker, Dara
Proescoldt, Kevin
Rawert, Kristine
Reilly, Dennis and Christine
Riley, Mike
Scottdivers, Connie
Swinton, Andrew
Taylor, Andy
Thompson, Margaret
Ulm, Brian
Vice, Daniel
Vining, Geordie
Voorhies, Bill & Marilyn
Zantek, Paul

3. Public Hearing Comments: Following is a list of individuals who provided oral testimony at the Sale 170 public hearings. Individuals who had comments that were responded to are entered in bold print. Comments requiring a response either provided new or additional information to be incorporated the FEIS or addressed the adequacy of written materials in the analysis. Specific comments in the oral-testimony transcripts are bracketed and numbered. The MMS responses to the specific comments follow each oral-testimony transcript.

Nuiqsut, Alaska, Thursday, June 24, 1997. 7:35 p.m.
Mark Ahmakak
Rosemary Ahtuangaruak
Lucy Ahvakana
Joseph Akpik
Thomas Napageak
Isaac Nukapigak
Ruth Nukapigak

Anchorage, Alaska, Friday, June 27, 1997. 12:00 Noon
Shawn Gail
Pam Miller
Theresa Obermeyer
Jeanne Patton
Jim Sykes

Kaktovik, Alaska, Wednesday, July 9, 1997. 6:20 p.m.
Isaac Akootchook
Susie Akootchook
Edward Rexford, Sr.
Marie Rexford
Lon Sonsalla
Merylin Traynor

Barrow, Alaska, Thursday, July 10, 1997. 7:40 p.m.
Maggie Ahmaogak
Arnold Brower, Jr.
Karen Burnell
Van D. Edwardsen

Beaufort Sea Sale 170
Organizations and Individuals with Written Comments Receiving Responses in the FEIS

ASNA	=	Arctic Slope Native Association, Limited
AWR	=	Alaska Waveriders
Bennett	=	Ron Bennett of Andover, Mass.
BJG	=	Bobbie Jo Greenland of Old Crow, Yukon
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Carter	=	James R. Carter of Anchorage, Ak.
Chriss	=	Dean M. Chriss of Wickliffe, Ohio
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Miller	=	Pamela A. Miller, of Anchorage, Ak.
Naghski	=	David Naghski of Cincinnati, Ohio
NOAA	=	National Oceanic and Atmospheric Administration
NSB	=	North Slope Borough, Office of the Mayor (2 ltrs: 7/15 and 7/25/97)
PCMB	=	Porcupine Caribou Management Board, Whitehorse, Yukon
SOA	=	State of Alaska, Office of the Governor
TFA	=	Trustees for Alaska et al., of Anchorage, Ak.
USGS	=	United States Geological Survey
UTP	=	Union Texas Petroleum

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Arctic Slope
Native Association Limited

RECEIVED
JUL 21 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

July 17, 1997

Regional Director
Minerals Management Service – Alaska Region
949 East 36th Avenue
Anchorage, Alaska 99508-4302

Dear Regional Director:

Please find enclosed the Arctic Slope Native Association, Ltd.'s (ASNA) written comments on the draft Enivronmental Impact Statement relating to the proposed 1998 Outer-Continental Shelf Oil & Gas Lease Sale #170.

Thank you for providing ASNA an opportunity to submit comments on the draft EIS. I hope that this will help you in your evaluation of the potential effects of the proposed lease sale.

With warm regards, I remain

Michael Kanisan Pederson (Iñupiaq Eskimo)
Natural Resources Specialist
Department of Natural Resources

Anaktuvuk Pass • Atqasuk • Barrow • Kaktovik • Nuiqsut • Point Hope • Point Lay • Wainwright

Post Office Box 1232 • Barrow • Alaska • 99723-1232 • (907) 852-2762 • FAX (907) 852-2763

Arctic Slope
Native Association Limited

COMMENTS TO THE MINERALS MANAGEMENT SERVICE ON THE

ALASKA OUTER-CONTINENTAL SHELF BEAUFORT SEA PLANNING AREA OIL & GAS LEASE SALE #170

DRAFT ENVIRONMENTAL IMPACT STATEMENT

July 17, 1997

Prepared By:
Michael Kanisan Pederson
Natural Resources Specialist
Department of Natural Resources

Anaktuvuk Pass • Atqasuk • Barrow • Kaktovik • Nuiqsut • Point Hope • Point Lay • Wainwright

INTRODUCTION

The Arctic Slope Native Association, Limited (ASNA) is the regional non-profit Tribal consortia dedicated to and striving for Native self-determination, with headquarters in Barrow, Alaska. ASNA provides services under a Public Law 93-638 contract to its Tribal members in the following communities and are *Federally recognized Tribes:* Anaktuvuk Pass, Atqasuk, Kaktovik, Nuiqsut, Point Lay (has IRA status) and Wainwright. ASNA also operates and manages the Samuel Simmonds Memorial Hospital in Barrow.

The Department of Natural Resources provides technical assistance to the six Tribal Councils within the ASNA contract service area to ensure that there is adequate management and protection for the areas Natural Resources, both renewable and non-renewable. The department has been involved in tracking concerns, such as lease sales, and provides written and oral comments on issues affecting our Tribal members. The Iñupiat people's concerns need to be addressed to help protect potential impacts from future oil and gas exploration, which may lead to development and production, to our traditional way of life. This includes a variety of subsistence activities that occur year-round, and includes bowhead whaling, hunting of walrus and seals, hunting of migratory waterfowl and fishing. The continuation of the traditional subsistence activities based on the Iñupiat culture is as important to us today as it was in the past. Our people continue to have ties to the sea and marine mammal resources with countless generations of Iñupiat people depending on those resources to provide food and clothing. Today, it is the survival of our Iñupiat culture that we must face in looking at ways to overcome obstacles which may limit our success as subsistence hunters.

It is the intent of these written comments to protect the subsistence resources and those associated activities important to our Iñupiat people that might be impacted by oil and gas activities in the Beaufort Sea Planning Area. This includes the protection of all traditional uses by the Iñupiat residents, and includes various subsistence uses, Native allotments, hunting and fishing camps and cabins, historical and cultural areas as well as the continued use of access routes. It is the spiritual side of subsistence that allows us to continue to fight those efforts which try to limit our subsistence lifestyle. We are guided by the wisdom of our elders, the knowledge of the resources and the spirits of our ancestors, which have allowed us to hunt for food to feed our families for several generations.

> *"I got my first whale in 1967. I can't explain the feeling. It's a very beautiful feeling. I give the thanks to Him. I try to honor Him anyway that I can. He's the one that provided the whale. Without His help, we would not have it. Before we go out, we pray for His help, and for our safety. We all try to acknowledge His help. It is hard to express the beautiful feeling when we catch a whale. I thank God, for without Him, how could we catch it?"*
> **Simeon Patkotak, Sr., Whaling Captain & Elder,** *Uiñiq*, Spring 1995, Vol. 9, Issue 1

THE BEAUFORT SEA

The Beaufort Sea is home to a variety of migratory waterfowl, several species of marine mammals and several species of fish that are used for subsistence purposes by the Iñupiat people residing in the communities of Kaktovik and Nuiqsut. Each spring, as the ice leads open up, bowhead whales migrate along the western Beaufort Sea coast from Pt. Barrow to the eastern Beaufort Sea in Canada, where the

summer feeding grounds are. As this migration occurs, beluga whales follow along with migratory waterfowl, such as sea ducks and geese. Later, as the ice moves out to sea, seals and walrus also migrate east along the ice edge. The Beaufort Sea coast is also home to several colonies of waterfowl, which use the coastal habitats as breeding grounds. Polar bears are known to have dens in the area and are also used for subsistence purposes. Caribou used the coastal areas as insect relief areas, and as calving grounds. The coastal area is a heavily traveled migration route for several species of animals, not only of marine origin, but often traversed by terrestrial animals as well.

BEAUFORT SEA LEASE SALE #170

This lease sale is directly in the vicinity of Cross Island and Flaxman Island. For many years, Cross Island has served as a base camp for the Nuiqsut whaling captains and their crews. It is one of two islands that can be used for subsistence bowhead whaling. The area surrounding Cross Island should be deleted from the lease sale. Both Cross Island and Flaxman Island have an historical and cultural context to the Iñupiat people of the North Slope. There are elders who are alive today who were born and raised on these islands. **ASNA #1**

The lease sale area is also in the vicinity of Kaktovik, whose residents use the Camden Bay area for subsistence hunting and fishing. This area should also be deleted from the lease sale. **ASNA #2**

It is imperative that the oil industry have on-site capable clean-up resources available to avoid any type of blow-out, especially at sea. An oil spill can threaten the Arctic marine ecosystem primarily through effects on marine mammals, migratory waterfowl, and coastal stocks of migratory fish. These species are the main biological products of the Arctic Ocean and are used heavily for subsistence purposes by the indigenous residents of the North Slope. A high potential for an oil spill increases in the Arctic when exploration and development is considered at offshore areas. Residents are unsure about the adequacy of available oil-spill clean-up technology. In winter, and even during the short open water season, ice conditions can be very unpredictable. The force of the moving ice pack is also tremendous. **ASNA #3**

SUBSISTENCE

The subsistence activities of the Iñupiat people on the North Slope is a very important aspect of our daily lives that enable us to provide food and clothing. Sharing of these resources is an Iñupiat value that has been passed down from one generation to the next, and it still continues today. The protection of our subsistence resources during any aspect of oil and gas exploration needs to be addressed. The importance of subsistence resources is not just limited to the wildlife, nor its habitat. It also includes the cultural and dietary importance of the marine mammals that are caught.

Those areas that are known to support a wide variety of subsistence activities should be deleted from the lease sale, due to their importance to the ecosystem and the marine mammals it supports. Deleting or deferring those areas that are ecologically important to the Iñupiat people will offer continued access to those marine mammals that are critical to our continued success as subsistence resources. **ASNA #4**

Areas where traditional subsistence hunting activities occur should be deleted or deferred from the lease sale area. Near the coastal areas of this lease sale, buffer zones should be created to allow for continued access to traditional hunting and fishing grounds, and not to limit any type of subsistence activities in the coastal areas of the lease sale. **ASNA #4 cont.**

Oil industry activities, such as seismic work during the fall open water season, should not occur during subsistence whaling activities. The subsistence whaling communities of Kaktovik and Nuiqsut, and possibly Barrow, will be impacted by seismic work that may occur. Local traditional knowledge by several whaling captains, who over the years, have expressed their concerns by informing officials on how seismic work has interfered and deflected bowhead whales during the fall migration route and interfered with the subsistence bowhead whale hunt. **ASNA #5**

> *"Keep on whaling! Whaling is not to be traded or bartered with. We have overcome obstacles and prejudice. The Iñupiat way of life has overcome these things to keep our tradition and our way of life strong."*
> **Eugene Brower, Whaling Captain,** *Uiñiq*, Spring 1995, Vol. 9, Issue 1

LOCAL TRADITIONAL KNOWLEDGE

Indigenous peoples in the Arctic are heirs to an extensive body of traditional knowledge, based on several generations of collective observation and experience, which can contribute to western scientific knowledge that is required to successfully protect, monitor and restore Arctic resources.

The traditional knowledge of the Iñupiat people will be a very important aspect of any action related to this process. It will no doubt provide insights into the way things work in the Arctic that cannot be described through western science, and no one else will know how the resources will react to certain disruptions. Traditional knowledge can also include answers to questions that have remained unanswered. Our knowledge of the sea and the marine mammals which occupy this area is something that will need due consideration. The whaling captains in Kaktovik and Nuiqsut are quite knowledgeable about the environment surrounding the lease sale area, including knowledge of the marine mammals who use the area for habitat.

> *"When I was a young boy, I was in my grandfather's boat when we spotted a whale acting strangely. We came closer. We could see the bowhead rubbing its body against the ice. There, in front of us, the whale gave birth to an infant, which came out on the ice. The mother reached a fluke over the infant, pulled it into the water, and swam off with it. We've been living on the ice and seeing things like this for thousands of years. We have developed a kindred relationship with this great animal. We have a familiarity with the whale that no other people has."*
> **George Ahmaogak, Whaling Captain,** *Uiñiq*, Spring (2) 1995, Vol. 9, Issue 2

NATIVE ALLOTMENTS

There may be Native allotments located along the coastal area of the lease sale, and those allotments are considered private property. It is imperative that since there is a very real potential for trespass resulting from any associated activities from oil and gas exploration, that the necessary permits are approved before any activity commences. **ASNA #6**

IMPACT AID

It is going to be necessary to provide impact aid to the communities who will see an impact from any activities in the area of Lease Sale #170. The communities of Kaktovik and Nuiqsut have been impacted by previous oil and gas exploration activities. The impacts that may occur will have a detrimental effect to the traditional lifestyle of the Iñupiat people. The residents of the North Slope have been dealing with oil and gas exploration activities for the last 20 years, and very little, if any, impact aid is provided, either by the Federal or State governments. The oil industry provides charitable contributions to impacted communities, but that doesn't qualify as impact aid. **ASNA #7**

Recently, the U.S. Department of the Interior was handed $1.6 billion dollars in lease-sale revenues due to oil lease sales off the North Slope, conducted by the federal government. None of those monies are expected to make its way into our local communities for impact aid. Communities on the North Slope have voiced their concern about this issue, with no expected results or benefits to North Slope residents.

One type of impact is that the traditional hunting and fishing areas, especially for the residents of Nuiqsut, have been compromised by development at and near Prudhoe Bay. Access is no longer allowed, and if it is, it is practically non-existent. It is difficult for residents to find fish and game resources, where once it was plentiful all year-round, and now it is very hard to put fresh meat on the table because the resources are not where they used to be. And residents are no longer able to hunt near their traditional hunting and fishing areas because of development. The fish and game resources once in areas where development has occurred is limited in occurrence, thereby making it difficult for residents to obtain fresh meat. Residents have to travel farther and farther to accommodate their subsistence lifestyle. **ASNA #8**

HISTORICAL / CULTURAL RESOURCES

Cross Island and Flaxman Island are a few historical/cultural sites located in the lease sale area. These prehistoric and archaeological sites deserve protection, because we, as an Iñupiat people are still learning about our past. We are still learning about the history of our people through the wisdom of our elders, and from artifacts collected by numerous archaeological expeditions. It is imperative that these sites are protected. Great care should be exercised when exploration nears the Barrier Islands all along the Beaufort Sea coast, such as Flaxman Island, which has a tremendous amount of history associated with the Iñupiat people. **ASNA #9**

ONSHORE OIL & GAS DEVELOPMENT PREFERRED

ASNA, as a matter of policy, believes that it is much safer to explore for oil and gas reserves onshore, rather than offshore, due to the potential impacts associated with offshore oil exploration in the outer-continental shelf. Although we prefer onshore exploration, our concerns with the land and sea are an important part of our livelihood. We have experienced oil production onshore on our lands for over 20 years, and believe that onshore oil exploration is much safer than exploring offshore. Due to the North Slope Borough's strict enforcement of its regulations on oil and gas activities, it has ensured environmentally sound development on lands located within the NSB boundaries. Several regional organizations and residents, including elders who have lived and hunted off the land, prefer onshore oil and gas development over the higher-risk offshore development of the North Slope's important oil and gas resources.

The Iñupiat residents of the North Slope, have consistently stated with one voice, and have made it clear to several Federal and State agencies, that we as indigenous peoples are determined to maintain control over the development of our regions natural resources. Development on land can be accomplished in a responsible manner that does not destroy our traditional dependence on the land, the sea and the wildlife resources. Exploring for oil offshore is delicate and risky where an oil spill can be potentially devastating. On land, there is the possibility for mitigating effects of an oil spill immediately.

On the North Slope, where a majority of our food comes from the sea, onshore oil exploration and development is preferred because of the known technology that is available (such as horizontal drilling) and the many years of successful experience, lower levels of risk and less interference with marine mammals and subsistence activities that occur offshore.

SELECTED REFERENCES

To gain a better understanding of the Iñupiat peoples use of the sea and its marine mammal resources, ASNA would like to add the following references for additional background material, which may provide useful information:

1. *North Slope Borough Subsistence Harvest Documentation Project: Data for Nuiqsut, Alaska, For The Period July 1, 1994 to June 30, 1995,* Department of Wildlife Management, North Slope Borough, 1997

In addition, the following shows that the communities of Nuiqsut and Kaktovik enjoy a strong marine mammal and estuarine fish harvests, and that this harvest would decrease if the OCS is developed.

2. *An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska,* U.S. Dept. of the Interior, Minerals Management Service, OCS Study MMS 95-014, 1995

CONCLUSION

If oil and gas leasing activities should proceed, it should only be in appropriate areas subject to responsible, state-of-the-art regulations and stipulations which will protect the sea, the marine resources and environment, and other subsistence resources as well as the traditional uses of the Iñupiat people, including their culture and traditional activities. Several generations of families rely on the sea and its marine resources for food. All oil development activities must be conducted in places and in ways that do not interfere with traditional subsistence hunting aetivities.

ASNA prefers that no offshore oil leases be conducted, rather, onshore leases should be considered in areas that show high potential for oil and gas discoveries.

ASNA-01
See Response NSB-01. A new alternative has been added to the FEIS. Alternative IV (Cross Island Area) analyzes the deferral of approximately 43 blocks covering 51,251 ha for the area around Cross Island. Alternative IV is designed to provide a buffer within a defined 10-mi radius around Cross Island to minimize space use and potential noise-disturbance conflicts between petroleum activities and subsistence whaling by the residents of Nuiqsut. At a recent AOAC Meeting, a Nuiqsut whaling captain identified this 10-mi area around Cross Island as Nuiqsut's staging area for whaling. The MMS also has developed new Stipulation 6 to protect subsistence-hunting activities around Cross Island. This measure would prohibit permanent facilities around Cross Island, unless the lessee can demonstrate that such facilities will not preclude reasonable access for subsistence hunting of bowhead whales.

ASNA-02
See Responses FWS-01 and TFA-03. A new alternative has been added to the FEIS. Alternative V (Area Offshore the ANWR) analyzes the deferral of approximately 122 blocks covering 437,866 ha and includes all of the Kaktovik deferral (Alternative III) analyzed in the DEIS and additional areas to the west and north to 146° W. longitude (to the Staines River) offshore the ANWR. The FEIS also analyzes three new stipulations and three ITL clauses developed for the area offshore the ANWR as mitigation as an alternative to deferral of this area. Two of the stipulations provide for protection of wildlife and habitats (both land and marine), subsistence, recreation, and other concerns identified by several commenters by emphasizing restrictions or prohibitions on activities within and adjacent to the ANWR. A third stipulation addresses the need for information about effects on polar bears to be included in DPP assessment, and requires lessees to provide information on measures to be taken to minimize effects on polar bears.

ASNA-03
Offshore pipelines have an excellent safety and environmental record. The probability of a spill from a subsea pipeline is small. There are multiple regulatory authorities that control the design, construction, and operation of offshore subsea pipelines and also monitor and have the authority to shut down the pipeline in the event of potential pollution during noncompliance.

Subsea arctic pipelines must be designed against all environmental conditions and potential loads. Offshore, these include permafrost and strudel and ice scour. Site-specific surveys allow for identifying and characterizing these conditions along the pipeline route. Avoiding areas where these conditions occur would be the primary design approach. Where these conditions cannot be avoided in total, there is sufficient experience, research, and field studies that make it possible to quantify these conditions and loads and to design the pipeline against these conditions where they exist. See Response TFA-55 and Appendix C for a detailed discussion of oil-spill-cleanup capabilities. Appendix C relates to oil-spill prevention and response planning for subsea arctic pipelines

ASNA-04
See Responses ASNA-01, ASNA-02, NSB-01, FWS-01, and TFA-03.

ASNA-05
The nature of MMS stipulations for site-specific bowhead whale monitoring and conflict-avoidance mechanisms is to establish a climate for industry and subsistence whalers to work cooperatively to avoid the conflicts from seismic activities of concern to the commenter. See Responses TFA-44 and TFA-60 for more detailed information concerning the conflict-resolution process, which has created an effective working environment for subsistence whalers and the oil industry during the past two whaling seasons.

ASNA-5a
The MMS agrees that the Inupiat People have an extensive body of traditional knowledge that is important and unique concerning how biological resources and habitats react to oil exploration and development disruptions. The MMS began in 1995 to incorporate traditional knowledge into its EIS process and continues to be responsive to Native knowledge concerning the environment encompassed by its lease-sale areas. See Response TFA-60 for a chronology and discussion of MMS's process for using traditional knowledge in its EIS process and some other initiatives it has begun to work with Native knowledge.

ASNA-06
The MMS recognizes the concern for potential trespass on Native allotments located along Beaufort Sea coastal areas. Prior to conducting any activities on OCS leases, lessees are required to obtain necessary permits for any associated onshore activities resulting from oil and gas exploration or development and production from numerous Federal and State agencies and the NSB. Any potential trespass on Native allotments would be identified and prohibited through the Borough's land-management regulations and permit-approval process.

ASNA-07
The MMS recognizes the concerns of local communities for impact assistance from oil and gas exploration and development on the OCS. Section 8(g) of the OCS Lands Act currently provides for revenue sharing from leasing activities on a portion of the OCS to affected coastal states. A Coastal Impact Assistance Working Group, established under the OCS Policy Committee, has recently developed recommendations for OCS revenue sharing to mitigate impacts on coastal states and local communities. The Secretary of the Interior is considering the working group's recommendations, which will require a change in the OCS Lands Act. See Response KPH-04 for more detailed information.

ASNA-08
The MMS lacks the authority to regulate the establishment or outline of onshore facilities. Should producible quantities of hydrocarbons be located on Federal offshore leases, a developmental EIS must be completed before construction and production can begin. This EIS will be the joint responsibility of a variety of agencies. Currently, the USDOD, U.S. Army COE is the lead agency for preparing the developmental EIS on the Northstar Project; a number of other agencies, including the MMS, are reviewing the contracted document for adequacy. During this period communities affected by offshore Federal development and the resulting onshore infrastructure, discussed in the EIS, will have the opportunity to review industry plans and to comment on such issues as potential effects or restrictions on subsistence hunting.

Recently, ARCO has negotiated with the residents of Nuiqsut regarding the infrastructure outline of the Alpine field. Advances in technology have lessened the need for extensive infrastructure and reduced the developmental "footprint" of oil and gas activities. This alone has reduced potential onshore effects on subsistence hunting.

ASNA-09
The MMS has regulations in place with regard to protecting and avoiding prehistoric and culturally significant sites (30 CFR 250.26 [Archaeological Reports and Surveys]; 30 CFR 250.32 [Preliminary Activities]; 30 CFR 250.33 [Exploration Plan]; 30 CFR 250.34 [Development and Production Plans]; 30 CFR 250.64 [Application for Permit to Drill]; 30 CFR 250.257(a)(5) [Pipeline Applications]; and 30 CFR 250.159 [General Requirements for Pipeline Right-of-Way Grant]). The policy is to avoid areas where there is high potential for the presence of sites or objects. If there is any evidence from high-resolution seismic data or coring—required for geologic-hazards analysis—of a potential archaeological or cultural site offshore, further analysis and/or relocation of the drill site is required. A well-defined set of criteria must be met for the site to qualify for avoidance or mitigation, including age and type of sediments, preservation potential, the presence of known high-potential physiographic features, and the size and areal distribution of the potential site. If the Regional Director makes a determination that an entire area may have potential, any drilling or offshore operations that disturb the seafloor will require an archaeological analysis and report. The Beaufort Sea has not been considered to have high potential for archaeological sites due to the low potential for preservation. However, in certain areas, preservation conditions may exist that could change

that determination; this is now being officially reviewed.

Alaska Waveriders
308 "G" Street, Suite 222
Anchorage, AK 99501
(907) 272-5534

July 15, 1997

Mr. John Goll, Regional Director
Minerals Management Service
Alaska OCS Region
949 E. 36th Street
Anchorage, AK 99508-4302

RECEIVED
JUL 18 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Dear Mr. Goll:

Alaska Waveriders is an organization of in-water and coastal recreationists and commercial fishermen with members from Souther California to Unalaska. Our mission is to protect Alaska's coastal waters, particularly from the threat of oil spills. We are writing today to voice our opposition to Beaufort Sea Lease Sale 170.

Alaska's arctic is facing unprecedented threats from oil development. Within the next few years, as Sourdough, Point Thomson, and Badami come on line, oil and gas production facilities and activities will span nearly the entire Coastal Plain from the edge of the Arctic National Wildlife Refuge west to the Colville River delta and beyond. At the same time, the impact of global warming on the Arctic permafrost and the extremely sensitive and poorly understood arctic ice-edge ecosystem is increasing. (Please see enclosure.) In fact, experts have included these two arctic ecosystems in the class of those most vulnerable to global warming. Although the OCS EIS/EA itemizes and describes various components of the arctic ice-edge ecosystem, it fails to produce a coherent picture of how the ecosystem works and how the proposed activity would effect it as a whole. **AWR #1**

And then there is the problem of noise and disturbance related to the operation of aircraft, vessels, ice-breakers, and exploration, production and transportation systems. Arctic marine waters and species are already experiencing dangerous levels of heavy metals, pesticides, and other industrial wastes. As a result, marine and terrestrial populations are hard-pressed. Even absent new exploration and production activities the situation is likely to continue to deteriorate for many years, albeit more slowly than would occur with Lease Sale 170, before the current trend reverses.

With Endicott, Niakuk, Lisburne, Point McIntyre, and now Northstar, the Beaufort already has more than enough offshore and OCS activity. The prudent thing to do would be to study what effect activities on those fields are having on the Beaufort ecosystem before condemning the entire region to more possibly irreversible harm. Given that it is currently technologically impossible to recover spilled oil from ice-clogged waters, it seems the height of irresponsibility to

lease more offshore tracts at this time.

On page IV-CJ-46, the EIS/EA states that natural gas is not considered economic at this time. This statement is false, as is the one on IV-A-22 which suggests that construction of the Trans Alaska Gas System (TAGS) project requires crude oil prices around $30 per barrel. This is outdated industry propaganda. Because of the Prudhoe Bay Unit agreement and the leaseholders' preference for developing gas reserves in other parts of the world, the North Slope producers have chosen not to develop and market their gas holdings, even though this violates their lease agreements. This does not mean, however, that North Slope natural gas is uneconomic. In fact, this winter, Pedro Van Meurs, a consultant working for the State of Alaska concluded that North Slope gas was competitive with any of the other grassroots LNG projects vying for the 2003-2005 Asian market window. Over a year ago, a report by Credit Suisse/First Boston Bank, a world leader in petroleum development financing, showed how a North Slope gas export project could be financed. Indeed, the State is currently negotiating with the leaseholders terms for a North Slope gas export project. **AWR #2**

Although the EA dismisses the risks associated with pack ice behavior, natural gas hydrates, shallow gas deposits, and unstable sediments, and storm surges, they combine to make for a high likelihood of major spills. Similarly, the EA's discussion of oil recovery methods in various sea-ice and climatological situations is wishful thinking in the extreme. The EA justifies all of this risk by saying that if the lease were canceled the United States would have to replace the foregone oil with oil from somewhere else. The EA calculates that 88% of this oil would have to be imported, yet elsewhere the EA acknowledges that oil from Lease Sale 170 may be exported to Japan. Alaska Waveriders believes that if the United States has such a surplus of oil reserves that it can afford to ship this non-renewable resource to one of our biggest competitors, then the United States can afford not to develop oil on its Outer Continental Shelf until such time as it has the technology to do it safely and no other supply option, domestic or international. The fact that MMS would propound Lease Sale 170 at a time when the U.S. is exporting oil from the North Slope is disturbing to say the least. It and the cursory dismissal of indigenous knowledge suggest that the MMS is serving some master other than the American people. **AWR #3** **AWR #4**

Alaska Waveriders urge you to cancel Lease Sale 170. We urge you to prohibit any new oil production activity which cannot be conducted from the mainland by directional drilling techniques. This prohibition should include new activities from barrier or artificial islands or floating or permanent platforms in the Beaufort Sea. We also urge you to delete from Lease Sale 170 all parcels offshore from the Arctic National Wildlife Refuge as oil development would conflict with current upland land classification and usage. Indeed, any OCS leasing should stop several miles west of the western boundary of ANWR's 1002 area. Alternative III did not extend far enough west to protect the northwest corner of the National Wildlife Refuge.

Until such time as the cumulative impacts from all this activity on the regions's fish and wildlife and their habitats can be ascertained and deemed insignificant or, at the very least, acceptable,

Alaska Waveriders advocates a moratorium on any leasing, exploration, or development activities on Alaska's OCS.

Alaska Waveriders is unaware of any compelling reasons to proceed with Lease Sale 170 at this time. There is more than enough production already on-line and scheduled to come on line to sustain and actually increase the amount of oil currently moving down the TAPS pipeline for at least another decade. When the vast majority of other coastal states have stopped OCS leasing off their shores, we find it curious and lamentable that the MMS continues to propose leases off Alaska, which boasts waters at least as sensitive and productive as any in the hemisphere. Furthermore, the most recent OCS sales suggest that free market competition as required by OCSLA does not exist on Alaska's North Slope or offshore as industry executives have themselves said on occasion. Finally, the current structure of the Trans Alaska Pipeline tariff which allows North Slope producers to overcharge themselves for the transporting our oil to Valdez makes it impossible for the Secretary to insure that the public receives an equitable return for these resources as required by OCSLA. For all of these and innumerable other reasons, we respectfully urge the MMS to cancel Lease Sale 170.

Sincerely,

Mike Macy

Mike Macy, Director for Public Policy

Enclosure: The Arctic Ice-Edge Ecosystem, (written by Mike Macy)
ACF Dispatch, Summer 1996.

Alaska Conservation Foundation

DISPATCH

The Arctic Ice-Edge Ecosystem Summer 1996

We Hardly Knew Ye

Of all the world's ecosystems, one of the most vulnerable and least understood is the arctic ice-edge. Seaward of land-fast ice, it encompasses:

- Pack ice – sea ice driven together into a single mass,
- Ice floes – individual pieces of ice,
- Leads – linear stretches of open water,
- Polynyas – pond-like expanses of open water,
- The associated community of organisms.

As in other ecosystems, it is the edges within the ecosystem, in this case the interface of ice and open water, where life flourishes and biodiversity is greatest. The leads, polynyas, and the pack ice edge are the oases where all life congregates, while the ice provides habitat, floating platforms for resting, feeding, breeding, birthing, and nursing.

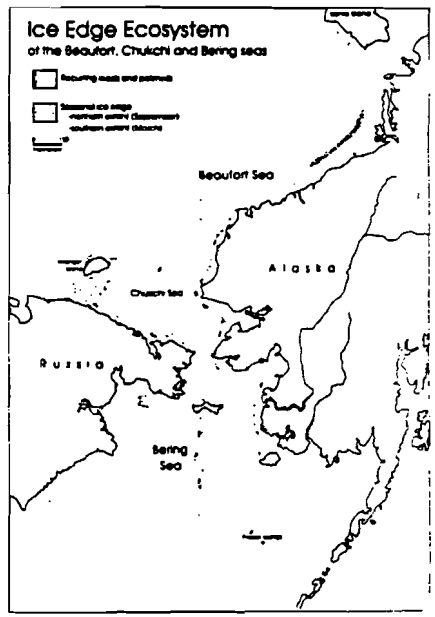
Dynamic Property

All ecosystems are difficult to delineate, but the ice-edge ecosystem is even hard to locate geographically. Indeed, it is one of the planet's few truly mobile ecosystems. Under the influence of weather, ocean currents, and the dynamic, ever-changing amount of insolation (incoming solar radiation), it is perpetually on the move. It is subject to massive seasonal changes: The southern boundary off Alaska's shores migrates over 1,000 km between its maximum southward advance over the Bering Sea each winter and its maximum northward retreat over the Chukchi and Beaufort seas each summer. The northern boundary shifts from a few hundred miles north of the Alaska coastline in winter to a few hundred miles south of the North Pole in summer.

Location, Location, Location

Like its antarctic counterpart, the arctic ice-edge ecosystem is circumpolar, touching on Russia, Finland, Sweden, Norway, Iceland, Greenland, Canada, and the United States. However, the portion straddling the International Dateline between Alaska and Russia is the most biologically productive part of the entire ecosystem. There are two reasons for this high productivity: the upwelling of North Pacific deepwater and the largest, shallowest continental shelf on the planet (with half in depths of 50 meters or less).

The North Pacific deepwater is laden with all the nutrients (especially nitrates) that phytoplankton (minute, free-floating plants) require for photosynthesis. As a result, in terms of grams of



Credit: Margie Ann Gibson

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carbon fixed per square meter per year, the most productive waters on the planet are found on the west side of the Bering Strait where the deepwater upwells into the photo-active layer.

Upside-Down Cake and Eating It Too

Each fall, algae, diatoms, and other phytoplankton are frozen into the ice. Over the course of the winter, the algae gradually concentrate in the bottom few inches and undersurface of the ice. Some of the algae is able to utilize extremely low levels of light – one-tenth the amount of what is normally considered the bottom of the photo-active layer of the water column. With the return of the sun in March, enough light starts penetrating the pack ice for this hyper-efficient ice-algae to bloom. While air temperatures are as low as -40°C, the algae glazes the underside of floes and ice-edges with a thick film of nutritious new growth. This provides an important influx of food for zooplankton, worms, and larger organisms living on the underside of the ice and the fish, birds, and marine mammals that feed on them.

If the phytoplankton set the table for the food-chain, the arctic cod provide the centerpiece, year-round. Comprising the bulk of the ecosystem's biomass, these 10-inch fish graze the plankton under the ice and in the adjacent open water. In turn, they are the favorite food of ribbon, ringed, and spotted seals which accounts for the cod-liver oil taste of seal meat.

Wheels to Meals

As the retreating ice-edge rafts northward on the influx of nitrate-rich deepwater, there are a succession of phytoplankton blooms – both on the ice and in the surrounding waters – throughout the summer. In warmer waters, zooplankton (minute, free-floating animals) graze on phytoplankton almost as fast as it blooms. In ice-edge waters, however, the extremely low temperatures inhibit zooplankton growth. As a result, much of phytoplankton settles to the bottom where it supports some of the richest benthic (bottom-dwelling) communities on the planet. Some of the most important benthic species include clams, worms, sand dollars, and starfish. In fact, food is so abundant on the bottom that, during a few months each summer, grey whales can download enough to

Credit: Ken Whitten, polar bear

migrate to Baja California, winter there virtually without eating, and return to the Arctic the following spring. In addition to interlopers like the grey whale, this food supply also supports large resident populations of other marine mammals.

Because so much of the continental shelf is so shallow, the benthic species are within reach of and provide food for diving birds and marine mammals such as spectacled eiders, oldsquaws, walrus, and bearded seals, largest of the seals. Rather than have to commute to work, many of the ice-edge fauna are wheeled hither and yon by the ever-shifting pack ice. This protects the benthic communities from over-predation while simultaneously enabling the predators to conserve energy for foraging.

Shucking and Diving

In addition to an abundance of food and reliable transportation, marine mammals need good insulation and the ability to corral large amounts of food to survive in the ice-edge environment. For insulation, the options are blubber (whales and walrus), blubber and fur (seals), fur (polar bear and fox), and down (birds).

Ice-edge fauna are adroit feeders. Rarely ranging far from the ice-edge, bowhead whales, for example, target zooplankton; swimming with their mouths open, the bowheads use their baleen to strain up to 3,000 pounds of copepods, euphasids, and amphipods per day. Catholic tastes encompassing more than 100 prey species and acute echolocation abilities enable the diminutive, toothed beluga whales to survive. The killer whale's

diet ranges from shrimp to other whales, essentially a "no meal too small, no meal too tall" strategy. Specially-designed mouths enable the husky bearded seal and walrus to literally vacuum meat from the shells of benthic clams, crabs, and worms, making shucking a breeze.

As the marine mammal most identified with the ice-edge ecosystem, most polar bear spend the majority of their lives associated with the pack ice. Here they rest, hunt, feed, mate, birth, and nurse their young. Expert swimmers, polar bears can also run at speeds of up to 25 miles per hour. Their favorite prey are ringed and bearded seals. While they eat carrion, they excel at still-hunting (waiting patiently, often at a breathing hole), stalking, or breaking into ice-covered pupping lairs. In winter, most bears stay within 200 miles of the coast. During extreme weather, non-pregnant bears may den temporarily, but do not hibernate. Pregnant sows den (but again, do not hibernate) for six months in isolation. They deliver and nurse one or two cubs which at birth are hairless. Of all mammals, polar bear have the largest postpartum to in utero growth ratio, with one pound cubs maturing into 1,800 pound adults.

During winter, bears are often shadowed by arctic fox. Typically, polar bear eat only the skin and fat of seals, leaving the rest for the fox. People tend to think of arctic fox as terrestrial; indeed, they return to land to breed and bear their young. However, this fox is a true marine mammal and has been seen near the North Pole. During winter, the fox's chances of finding sufficient food on a regular basis are much better with the bears on the ice than on land.

Everybody into The Polynya

In March 1995, American scientists tracking a weak radio signal flew out into the middle of the Bering Sea in the vicinity of St. Lawrence Island. To their surprise, they found over 5,000 spectacled eider jammed beak to tail in a polynya. The bird, which nests in Siberia and adjacent portions of Northwestern Alaska, is endangered – its Alaskan population has declined 90 percent in the past four decades. Subsequently, in a score of polynyas, they found some 150,000 eiders, nearly all of the world's estimated breeding population. The birds appeared to be feeding heavily, and their activity prevented the open water from freezing – but only barely; there wasn't room in the water for all the birds, and large numbers clustered on the nearby ice awaiting their turn in the water.

Unanswered Questions

The eider discovery solved a great ornithological mystery but also underscored how much remains to be learned about the ecosystem. Indeed, some of the most basic information is lacking on a number of species. For example, population estimates are not available for two species of beaked whales and for three (ribbon, spotted, and ringed) of the four species of seal. Moving down the food chain, even less is known.

People on The Edge

One obvious existing source of knowledge which has scarcely been recognized are the indigenous people who have depended on the ecosystem for their survival for millennia. Always a tenuous proposition, their survival attests to their understanding of the ecosystem and the sophistication of their technology. Scientists are just beginning to fathom the depth of this knowledge. Through organizations like the Eskimo Walrus Commission and the Alaska Eskimo Whaling Commission, indigenous people are now participating in the management of a number of species.

Threats

The time has long passed when remoteness necessarily guaranteed protection from man-made threats. As everywhere else, this is also the case with the Arctic. The ice-edge ecosystem is

Credit: Bill Larned, spectacled eider in Polynya

threatened by both local and global processes, including offshore oil and gas development, shipping, arctic pollution, and global warming. In fact, there is now proof that persistent organic contaminants are concentrating and ambient air temperatures are increasing more dramatically in the Arctic than elsewhere on the planet.

Although the federal government has for environmental reasons abandoned its offshore oil leasing program everywhere but the Gulf of Mexico, it intends to eventually lease virtually the entire Beaufort Sea and Chukchi outer continental shelf (OCS), with the first sale scheduled for this fall. The Inupiat eskimo people have warned of the dangers of offshore oil development for decades. In addition to the threat of spills (which are virtually impossible to clean-up in ice-filled waters), the operations of drilling rigs, aircraft, seismic crews, and support vessels, will disturb and displace marine mammals and interfere with their echo-location and communication activities.

Meanwhile, with advances in ice-breaking technology and the availability of satellite maps of up-to-the minute ice conditions, seasonal shipping between Europe and the Pacific Rim through the Northwest Passage is coming closer to reality. Using the satellite maps, ships will seek paths of least resistance (through leads and polynyas), displacing marine mammals left and right in the process.

Delivered by northward flowing rivers and oceanic and atmospheric circulation patterns, a number of highly toxic compounds, such as lead, lindane, dieldrin, DDT, and PCBs, have found their way into the ice-edge food chain thousands of miles from where they are manufactured and used. Canada has reported dangerous levels of these substances in seals, whale, polar bears, and human mothers' milk – threatening the entire web of life (See Fall 1994 ACF Dispatch). The materials collect in the ice throughout the year, but the bulk are released into the environment in just a few weeks each spring, when the ice begins to melt and primary productivity is at maximum. As a result, unusually high levels of these pollutants are accumulating in the food chain.

The thinning of the ozone layer over the Arctic presents yet another threat: genetic damage, cancers, eye problems, and compromised immune systems. Elsewhere, compromised immune systems have already had dramatic effects on marine mammals. In 1995, some 25,000 seals died in the Baltic Sea. Though initially the cause was thought to be starvation, subsequent studies proved that elevated PCB levels in the seals had compromised their immune systems, making them vulnerable to a common form of distemper which they previously were able to resist. The same sort of one-two killer combination threatens all arctic marine mammals.

Global warming poses the most far-reaching threat to the arctic ice-edge ecosystem. Indeed, in 1994, the World Wildlife Fund named the arctic-ice edge one of the three ecosystems most threatened by global warming. Though a handful of industry sponsored scientists in the U.S. have managed to perpetuate the notion that global warming is unproven, the international scientific community no longer argues whether or not global warming is real, but rather how dramatic the impacts will be and whether it is already too late to turn it around. According to the University of Alaska-Fairbanks, the consensus of scientists around the world is that temperatures will increase about 6°C in the Arctic within a hundred years and this will have an enormous effect on the environment.

Currently, global warming is shrinking the ice-edge ecosystem by about 2 percent or 31,000 km2 per year in the Northern Hemisphere. To make matters worse, the retreat of the ice-edge is self-perpetuating. Snow and ice have a higher albedo, or reflectivity, than land or water. As the pack ice shrinks and the amount of open water within the ice-edge increases year by year, less solar energy is reflected from the Arctic Ocean; it and its associated seas gradually warm; and the area covered by the pack ice shrinks further.

Dr. Vera Alexander of the University of Alaska's Institute of Marine Sciences has said this about the consequences of global warming:

"*...There would be a reduction and perhaps ultimately a loss of ice algae, and elimination of the entire ice-associated community... Essentially all the distinctive arctic animals would disappear.*"

This is not the legacy to which we humans should aspire.

AWR- 01

The development of offshore oil and gas resources is not expected to contribute to additional global warming. Development of these resources would offset other oil production and imports for a similar net effect (USDOI, MMS, 1996a). The EIS has analyzed those abiotic, biotic and sociological components of the arctic ecosystem. The interaction of these basic components is the workings of the ecosystem and the resultant effects of the proposed activities.

AWR-02

The economic viability of the Trans-Alaska Gas System (TAGS) project is only indirectly tied to the price of oil, in that liquefied natural gas competes with oil as an energy source for large power utilities in Asia. Current State of Alaska analysis shows that the TAGS project is at the break-even point if long-term gas prices average $4.00 per thousand cubic feet (equivalent to $24/barrels [bbl] oil). The historical average oil price (in constant dollars) is $16.00 per bbl, and recent excursions above $20 per bbl are likely to be a temporary anomaly. Considering the very high cost of this project ($12-$15 billion), companies are not willing to gamble on high future energy prices to support the TAGS project. At current prices (below $20/bbl) this megaproject clearly is uneconomic.

Granted, numerous other aspects of the TAGS project are subject to debate, including market supply/demand and competition from other projects. There are several potentially competing gas projects being undertaken by the North Slope operators elsewhere in the world. But the issue is not whether North Slope gas is economic, but whether new leasing and development activities targeting gas will occur as a result of proposed Sale 170. The answer clearly is no, primarily because there are upwards of 23 trillion cubic feet (Tcf) of proven gas reserves remaining in the Prudhoe Bay field that are producible through existing wells and facilities. At projected production rates of 14 million tons per year (660 billion cubic feetyear), the Prudhoe Bay field alone holds nearly 35 years of reserves for the TAGS project. Additional proven gas reserves, such as Point Thomson, increase total North Slope gas reserves to 35 Tcf (another 18 years of production).

Given that the lease term for proposed Sale 170 blocks is only 10 years, it is very unlikely that companies would actively explore for or commit to develop new gas resources as a result of this particular sale. The timeframe for future offshore exploration for gas resources destined for outside market is likely to be many decades in the future and beyond the foreseeable scope of environmental analysis for proposed Sale 170.

AWR-03

These natural hazards are discussed in brief and at length in the Sale 170 and Sale 144 EIS's, respectively, and are not dismissed. In Sale 170, this discussion is located in Section III.A.1.h. Natural gas hydrates are not anticipated in the Sale 170 area. See also Response NAGHSKI-01.

AWR-04

Currently, exports of North Slope crude to the Far East are limited, and shipments are irregular. The vast majority of all oil produced on the North Slope is consumed in the U.S. It also is important to note that these exports, as is any maritime commerce, are subject to international "situations" and their shipment patterns can be accordingly altered. As long as the U.S. imports most of its oil, our economic infrastructure will remain vulnerable. The U.S. OCS is believed to hold one-half of the undiscovered, conventionally recoverable oil estimated to remain in the Nation. We believe that the development of OCS oil resources will provide the U.S. with a higher degree of economic security.

Mr John Goll, Regional Director
US Minerals Management Service
Alaska OCS Region
949 E 36th Street
Anchorage, AK 99508-4302
(800)764-2627
Fax (907)271-6805

RECEIVED
JUL 13 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Mr. Goll,

I strongly oppose federal Lease Sale 170 and any other attempt to lease the coastal waters adjacent to the Arctic National Wildlife Refuge.

I believe Lease Sale 170 poses a major threat to the unique wildlife and irreplaceable wilderness values of the Arctic Refuge. A spill in the Beaufort Sea, in addition to devastating marine populations, presents significant threats to the Arctic National Wildlife Refuge.

I doubt offshore leasing in Alaska's Arctic can be done safely. Production from offshore leases would require undersea pipelines in waters where ice flows scrape and scour the shallow seabed Nobody knows how to cleanup an oil spill under sea ice.

BENNETT #1

In light of the above concerns, you do not believe there is a compelling national energy need to justify leasing along the Arctic coast.

I favor EIS Alternative 2: NO LEASING.

Thank you for your attention.

RB

Ron Bennett
Andover, Massachusetts
508.470.1022
rbdesign@shore.net

BENN-01
Regarding concerns about subsea pipeline construction in arctic conditions; oil spills in arctic ice conditions; and general transportation, development, and safety issues, see Responses TFA-11 and TFA-55, and Appendix C in the FEIS.

Ms. Bobbie Jo Greenland
Post Office Box 64
Old Crow, Yukon
Y0B 1N0

July 16, 1997

US Minerals Management Service
Alaska OCS Region
949 E 36th Street
Anchorage, Alaska
99508-4302

RECEIVED
JUL 16 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Dear Mr. Goll,

I am writing to you because I want you and everyone else at Minerals Management Services to know that I strongly oppose oil drilling along the Alaskan coast. Not only will oil drilling threaten many near shore sea mammals such as the bowhead whale, but may also threaten the Porcupine Caribou. The caribou face a threat because this proposed drilling would take place near the Arctic National Wildlife Refuge. **BJG #1**

I disagree with anyone who claims that oil drilling can be done safely without threatening the environment and the wildlife. I hope you will all think twice about this federal lease 170 as nobody knows how to clean up an oil spill under sea ice. Lets not kid ourselves here, but the chances of such a thing happening does so exist. **BJG #2**

As I write this letter I am not thinking of only myself, but I think about my children and grandchildren to come. I am thinking of my people and the land. I think about the harm that oil drilling can have on us as a people who love and respect our land and wildlife. No amount of money can ever buy back the lives of people, animals or plants once they are dead.

I have a feeling that the people who do favor oil drilling in such areas haven't considered much, but themselves and the money it will make. Maybe if these people would just try and think about things from my point of view then they may be able to understand why I strongly oppose any oil drilling.

Lets not forget that money will not last forever. **PLEASE DON'T** drill along the Alaskan coast or anywhere near the Arctic National Wildlife Refuge. I think the real hero's are those who protect the environment and what it contains. By doing so we shall all find richness in one way or another.

Sincerely,

Bobbie Jo Greenland
Bobbie Jo Greenland.

BJG-01
The DEIS addressed the concern about potential effects on caribou of Sale 170 OCS oil and gas exploration and development under Alternative I in Section IV.B.7. The DEIS considered deferring most potential lease blocks from the sale that are offshore the ANWR under Alternative III. Under Alternative V, all blocks offshore the ANWR are considered for deferral. Past OCS exploration drilling under Sales 87, 97, and 124 has occurred offshore the ANWR without any significant effects on the PCH or on the Refuge's ecosystem.

BJG-02
Regarding concerns about subsea pipeline construction in arctic conditions; oil spills in arctic ice conditions; and general transportation, development, and safety issues, see Responses TFA-11 and TFA-55, and Appendix C in the FEIS.

BP EXPLORATION

Alaska Exploration & Developments

BP Exploration (Alaska) Inc.
900 East Benson Boulevard
PO. Box 196612
Anchorage, Alaska 99519-6612
(907) 561-5111

July 17, 1997

John T. Goll
Regional Director
Minerals Management Service
Alaska Region
949 East 36th Avenue
Anchorage, Alaska 99508-4302

RECEIVED
JUL 13 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Subject: BP Exploration (Alaska) Inc. Comments on Beaufort Sea Planning Area Oil and Gas Lease Sale 170 and Draft Environmental Impact Statement (EIS)

Dear Mr. Goll:

BP Exploration (Alaska) Inc. (BPXA), a wholly owned subsidiary of BP America, appreciates the opportunity to submit comments on this important draft EIS and oil and gas lease sale.

BPXA's primary focus is in the Beaufort Sea Planning Area of the Alaska OCS Region. Provided below are our comments regarding the draft EIS relating to the Beaufort Sea Planning Area Oil and Gas Lease Sale 170.

I. General Comments

The various BP companies view the Outer Continental Shelf (OCS) as an essential and highly potential contributing resource area for the nation's energy future. While the development of alternative energy sources, coupled with efforts to conserve energy, are in the best national interest, we can not ignore the fact that our nation will continue to rely on oil and gas as its major energy supply well into the next century. It is of strategic importance that the nation is afforded every potential avenue of increasing its domestic oil supply to meet the increasing demand.

BPXA supports the current approach taken by the Minerals Management Service (MMS) regarding the establishment of cooperative relationships with states and local communities. These relationships are deemed essential to ensure availability and exchange of information and identification of best practices in order that sound scientific principles may be applied. Further, the regionally tailored approach to lease sales is imperative given the diversity of issues confronting each of the regions.

II. Alaska OCS Beaufort Sea Lease Sale 170

BPXA is a major lease holder and producer in the region of the arctic North Slope of Alaska. Our lease holdings in this region are primarily between the mouths of the Colville and Canning rivers. Given the presence of BPXA's existing infrastructure and the demonstrated existence of commercial accumulations of hydrocarbons in the region, we are compelled to focus our current efforts on the OCS in the adjacent Beaufort Sea Planning Area.

BPXA supports the proposed plan ("Alternative I"), offering all 363 unleased blocks in the Beaufort Sea Planning Area, to be held September, 1998. Given the importance of forward planning, coordination of activities and budgetary constraints, it is imperative to BPXA that lease sales be conducted as planned and on schedule. We strongly encourage inclusion of all 363 tracts included in the proposed Beaufort Sea Planning Area Oil and Gas Lease Sale 170.

The Beaufort Sea in Alaska offers opportunities for early production given its proximity to infrastructure. These facts also make this area one of the most attractive for investment in the Alaska Region.

III. Draft Environmental Impact Statement, Proposed Mitigation Measures and Information to Lessees

BPXA has the following comments and recommendations concerning revisions to the document in preparation of the FEIS:

1. Further consideration should be given, in general, to current (and evolving) oil industry waste management practices, waste minimization and other enviromental protection measures; for example, drilling wastes from BPXA's

BPX #1

proposed Northstar project will be disposed of in deep injection wells using grinding technology. **BPX #1 cont.**

2. Further consideration should be given to the oil industry's technological advances with respect to exploration and development on the North Slope and in the Beaufort Sea such as BPXA's proposed Northstar Project (a significant amount of information on Northstar project engineering has been submitted by BPXA to the regulatory agencies in support of permit applications). **BPX #2**
3. The EIS should recognize on-going joint agency-oil industry planning activities focused on ensuring adequate spill response capabilities for industry operations in the Beaufort Sea. **BPX #3**
4. BPXA fully supports the proposed Mitigation Measures and Information to Lessees which address such issues as community involvement and protection of biological resources. BPXA is involved in and is committed to local community involvement in the project planning process. We also conduct and are committed to implementing the necessary environmental studies with respect to fish and wildlife resources and obtaining local knowledge on the physical and biological environments to support our project planning and permitting activities. BPXA has a demonstrated commitment to taking all reasonable and prudent steps to protect the environment, wildlife and their habitat and subsistence activities.

Thank you for consideration of our comments. If you have any questions, please contact Mr. Pete Zseleczky at (907) 564-5083.

Sincerely,

Peter T. Hanley, Supervisor Permitting
HSE-Alaska

BPX-01
The MMS does consider industry efforts to minimize waste and protect the environment when preparing the EIS and evaluating proposed oil and gas activity considered appropriate for the analysis of the effects of oil and gas exploitation. Concerns regarding the environmental effects of industrial development and the need to improve operating efficiencies have resulted in a combination of regulatory measures and advances in technologies and operating strategies that reduce impacts on the environment. Regulatory measures and technologies and operating strategies that affect the environmental analysis of petroleum exploitation in the Sale 170 area are included in Section IV.A (Basic Assumptions for Effects Assessment) and Appendix A (Exploration and Development Activities). The types and timing of activities that might occur in the Sale 170 area are described In Section IV.A.1. Spill-prevention and -response strategies, including the requirement to have oil-spill-contingency plans for exploration and development and production activities, is described in Section IV.A.4. These descriptions are based on what MMS understands to be the current petroleum industry technologies and strategies for operating in the Arctic marine environment.

BPX-02
The MMS will evaluate the technology proposed for use in future oil and gas activities, including the Northstar Project, where appropriate and applicable.

BPX-03
The MMS recognizes that ongoing agency/industry planning activities will have a long-term effect on response planning and preparedness for the North Slope and has included a brief description of this effort in the FEIS.

July 30, 1997

RECEIVED
JUL 31 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Mr. John Goll, Regional Director
US Minerals Management Service
Alaska OCS Region
949 E. 36th Street
Anchorage, AK 99508-4302

Dear Mr. Goll

I am writing to express my concerns about the proposed Beaufort Sea Sale 170. I strongly oppose federal Lease Sale 170 and any attempts in the near future to lease the coastal waters adjacent to the Arctic National Wildlife Refuge.

Lease Sale 170 poses a major threat to the unique wildlife and irreplaceable wilderness values of the Arctic Refuge. Oil exploration and drilling could harm near-shore bowhead whale and ringed seal feeding habitat and migration routes and denning polar bears. A spill in the Beaufort Sea, in addition to devastating marine populations, would present significant threats to the unique Arctic National Wildlife Refuge ecosystem which is far more valuable to the U.S. & world in its present pristine state than any oil that may be found nearby.

I strongly doubt that offshore leasing in Alaska's Arctic can be done safely. Production from offshore leases would require undersea pipelines in waters where ice flows scrape and scour the shallow seabed. Nobody knows how to cleanup an oil spill under sea ice. **CARTER #1**

Moreover, there is no national energy need to justify leasing along the Arctic coast at the present time. The decision about whether to lease the proposed 1.7 million acre offshore area should be left to future generations of Americans. The rush to give away oil & gas resources now not only deprives future generations of this potential asset but ultimately leads to an acceleration of CO2 emissions which increase global warming (the U.S. has fallen short of its goals to reduce these emissions). **CARTER #2**

For these reasons, I favor EIS Alternative 2: "No Leasing."

Sincerely,

James R. Carter
3505 Woodland Park Drive
Anchorage, Alaska 99517

CARTER-01
Regarding concerns about subsea pipeline construction in arctic conditions; oil spills in arctic ice conditions; and general transportation, development, and safety issues, see responses TFA-11 and TFA-55, and Appendix C in the FEIS.

CARTER-02
Sale 170 is part of the U.S. Government's effort to achieve a balanced energy-resource portfolio. This is part of an overall plan to increase America's security by reducing its vulnerability to global energy-market shocks. Analyses prepared by the U.S. Department of the Interior have shown that much of the Nation's energy for the foreseeable future will have to come from petroleum and that imports of crude oil, petroleum products, and natural gas all are expected to increase considerably over the next 2 to 3 decades. Increasing imports will make the Nation more vulnerable to supply disruptions and will increase the Nation's balance-of-payments deficit.

Mr. John Goll, Regional Director
US Minerals Management Service
Alaska OCS Region
949 E 36th Street
Anchorage, AK 99508-4302
Fax (907) 271-6805

RECEIVED
JUL 16 1997

REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Dear Mr. Goll,

I am writing to express my strong opposition to the proposed Beaufort Sea Sale 170 and any other attempt to lease the coastal waters adjacent to the Arctic National Wildlife Refuge. The proposed 1.7 million acre federal oil lease sale poses a major threat to the unique wildlife and irreplaceable wilderness values of the Arctic Refuge. A spill in the Beaufort Sea, in addition to devastating marine populations, presents significant threats to the Arctic National Wildlife Refuge.

I seriously doubt that offshore leasing in Alaska's Arctic can be done safely. Production from offshore leases would require undersea pipelines in waters where ice flows scrape and scour the shallow seabed. Nobody knows how to cleanup oil spills under sea ice. **CHRISS #1**

In light of the above concerns, I do not believe there is a compelling national energy need to justify leasing along the Arctic coast. In short, I favor EIS Alternative 2: NO LEASING.

Sincerely

Dean M. Chriss

Dean M. Chriss
1035 Gary Court
Wickliffe, Ohio 44092-2222

CHRISS-01
Regarding concerns about subsea pipeline construction in arctic conditions; oil spills in arctic ice conditions; and general transportation, development, and safety issues, see Responses TFA-11 and TFA-55 and Appendix C in the FEIS.

Ehdiltat Renewable Resource Council
Aklavik Phone (403) 978 2029 Fax (403) 978-2937
Gwich'in land, culture and resources for a better future

Mr. John Goll, Regional Director
US Minerals Management Service
Alaska OCS Region
949 E 36th Street
Anchorage, AK 99508-4302
(800) 764-2627

Wednesday, July 16, 1997.

Dear Mr. Goll;

Our council and thousands of other people here in the Mackenzie Delta use Caribou for a number of reasons and everyone knows it including the United States of America. The Porcupine Caribou Herd(152 000 strong) gives birth to it's next generation only 3 miles away from where your people want to federally lease(federal Lease Sale 170) 1.7 million acres of land. Scientists and people with common sense can tell you right now that this is way too close to a delicate area to do any kind of research let alone Oil Exploration. **ERRC #1**

Our council is extremely updated on what is happening in the world today and we know that there is no compelling national energy need in the United States to justify leasing land to oil companies along the Arctic Coast. **ERRC #2**

Production from offshore leasing would require undersea pipelines which has tremendous potential for a catastrophic oil spill because ice flows scrape and scour the shallow seabed. To date there is no way of cleaning up an oil spill under sea ice. Can you imagine what would happen if an oil spill took place around the only unique arctic and sub-arctic ecosystem in the United States? **ERRC #3**

Not only is the herd in danger, but the millions of migratory birds, plant life, denning polar bears, bowhead whales and the ringed seals that the original users of the land have the highest respect for.

We hope that this letter can give you a little taste of what our way of life means to us. **Remember** you're calling the shots for a lot of people and animals that makes a way of life out of the Arctic National Wildlife **Refuge**.

Sincerely,

Sheldon Bernard
Ehdiltat Renewable Resource Council Coordinator.

ERRC-01
The DEIS addressed the concern about potential effects on caribou of Sale 170 OCS oil and gas exploration and development under Alternative I in Section IV.B.7. The DEIS considered deferring most potential lease blocks from the sale that are offshore the ANWR under Alternative III. Under Alternative V, all blocks offshore the ANWR are considered for deferral. Past OCS exploration drilling under Sales 87, 97, and 124 has occurred offshore the Refuge without any significant effects on the PCH or on the refuge's ecosystem.

ERRC-02
See Response CARTER-02.

ERRC-03
See Response CHRISS-01.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Rd.
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

JUL 29 1997

AES/ESO/NAES

Memorandum

RECEIVED
JUL 31 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

To: Regional Director
Minerals Management Service, Alaska

From: Regional Director
Region 7

Subject: Beaufort Sea Planning Area Oil and Gas Lease Sale 170
Draft Environmental Impact Statement

The U.S. Fish and Wildlife Service has reviewed the Draft Environmental Impact Statement for the Outer Continental Shelf Oil and Gas Lease Sale 170, planned for 1998. The proposed sale area is comprised of 363 lease blocks and covers approximately 1.7 million acres in the central portion of the Beaufort Sea Planning Area. Service comments on the Call for Information for OCS Sale 170 dated 26 November 1996, and comments addressing OCS Sale 144 in memorandums dated 26 July 1991, 3 February 1994, and 20 November 1995, are still applicable.

Recent and projected oil and gas leasing activities (e.g., Sourdough Prospect-British Petroleum Exploration Inc., Beaufort Sea Areawide State Lease Sale 1999, Warthog Prospect-ARCO Alaska, and ARCO Alaska's request for unitization of lease sales at Camden Bay) have prompted the Service to reevaluate potential effects of OCS leasing north of the Arctic National Wildlife Refuge (146° 00'W to 141° 00'W). Considering the alternatives presented, the Service supports Alternative III (The Kaktovik Deferral) which deletes 85 blocks in the area approximately 12 miles west of the community of Kaktovik (144°W) to a line approximating 145° 07'W. **However, due to the concerns outlined in the following paragraphs, the Service recommends the deferral area be extended west to the Canning River to encompass all the OCS offshore of the Arctic National Wildlife Refuge.** FWS #1

The Arctic National Wildlife Range was established by Public Land Order 2214 on 6 December 1960, to protect the unique wildlife, wilderness, and recreational values of the area. The Alaska National Interest Lands Conservation Act (ANILCA, Section 303(2)(B)) redesignated the area as the Arctic National Wildlife Refuge and more than doubled its size to 19.6 million acres. ANILCA specified the Arctic Refuge shall be managed to: (i) conserve fish and wildlife populations and habitats in their natural diversity..., (ii) fulfill international treaty obligations of the United States with respect to fish and wildlife and their habitats, (iii) provide...continued subsistence uses by local residents, and (iv) ensure...water quality and necessary water quantity within the Refuge.

Petroleum exploration and development activities and support infrastructure are prohibited on the Arctic Refuge. The development of petroleum prospects north of the Refuge would likely require a 30 to 60 mile subsea pipeline system (DEIS, Table IV.A.1-1) that would landfall in the Flaxman Island area. Subsea pipelines are untested in the Alaskan Arctic, and the probable length of this pipeline heightens our concern about the potential for oil spills with subsequent impacts on the Arctic Refuge, particularly given the lack of nearby spill response facilities. FWS #2

The DEIS states that economically recoverable oil reserves discovered within the Lease Sale 170 area would be transported via an offshore pipeline(s) to existing onshore facilities at Oliktok Point, Point McIntyre/West Dock, and/or the Endicott Causeway. For oil discovered north of the Refuge, this option is likely not feasible; consequently, the DEIS proposes the development of new onshore infrastructure near Flaxman Island (DEIS, pg. IV-A-6) which is located less than 2 miles from the Refuge boundary. The Service believes that this facility and associated production activities northeast of this facility would pose significant risks to the Refuge, most notably in the form of oil spills and wildlife disturbance.

Because of the proximity of the Flaxman Island onshore facility to the Refuge, the proposed 130 mile onshore pipeline from the Flaxman facility to Endicott (DEIS, Fig. IV.A.1-1), and the likelihood of continued industrialized growth to support nearby fields (e.g., Sourdough Prospect, DEIS, Fig. IV.A.5-1), the Service recommends the DEIS address direct, indirect, and cumulative impacts of the Flaxman Island facility to fish and wildlife resources, air and water quality, and lands of the Arctic Refuge. Because "...onshore facilities would have to provide (1) a staging area for construction equipment, drilling equipment and supplies; (2) a transfer point for drilling and construction personnel; (3) a harbor to serve as a base for vessels required to support offshore operations; and (4) an airfield for fixed-wing aircraft and helicopters" (DEIS, IV-A-3), the DEIS should address the potential impacts of these specific activities to the Arctic National Wildlife Refuge. FWS #3

Because of the unique development restrictions on the Arctic National Wildlife Refuge and associated concerns with impacts from OCS development, the Service recommends that lease blocks north of the Refuge be considered as a separate planning unit for future lease sale offerings. If in the future, OCS blocks north of the Refuge are offered, a separate EIS addressing that unit should be done. FWS #4

Specific Comments

In addition to the above discussion, we provide you with the following specific remarks regarding the DEIS treatment of potential impacts on fish and wildlife resources.

2

Caribou

The DEIS treatment of measured and potential effects of petroleum development on the productivity, distribution, and habitat selection of caribou is inconsistent, incomplete, and misleading relative to published literature.

Page III-B-12, second par.: The statement referencing past and current decreases in the Central Arctic Caribou Herd should indicate that declines have only occurred west of the Sagavanirktok River (K. Whitten, pers. comm.), an area of increasingly extensive petroleum development. The segment of the CAH which calves east of the Sagavanirktok River in a relatively disturbance-free area (Cameron 1995), has not declined (K. Whitten, pers. comm.). Reference should also be made to recent published literature and ongoing research to address the apparent correlation of petroleum industry expansion with degradation of caribou habitat, decreased body condition and lower productivity (see below). Caution should be applied in comparing declines in the Porcupine Caribou Herd relative to the CAH; the former is highly migratory and likely experiences different environmental conditions relative to CAH (K. Whitten, pers. comm.). **FWS #5**

Page IV-B-38, first par.: "Consequently, repeated exposure to human activities such as oil exploration and development over several hundred square kilometers of summer range has led to some degree of tolerance by most caribou of the CAH." This statement is without scientific merit. While some individual caribou may demonstrate "tolerance" to petroleum exploration and production, references (i.e., publications, reports) which clearly support that most caribou have developed some degree of tolerance should be included, if available. This sentence should either be supported by literature, or deleted. **FWS #6**

Page IV-B-38 b. Effects of Development: "...disturbance from vehicle traffic and human presence associated with present levels of oil development in the Prudhoe Bay area apparently has affected local distribution on a small percentage (an estimated 5%) of the caribou's summer range. However, caribou abundance and overall distribution have not been affected..." This statement appears misleading and inconsistent to statements on Page IV-B-38 a. (Effects of Disturbance): "However, recent information on the productivity of CAH caribou calving in the oil fields (west of Sagavanirktok River) compared to CAH cows calving east of the oil fields (east of the Sagavanirktok River) suggests that displacement-disturbance of cow caribou on the oil fields may be affecting caribou productivity (Cameron, 1994). The avoidance of the Prudhoe Bay oil-field complex of roads and pipelines by cow caribou represents a functional loss of summer range habitat (Cameron et al. 1995)." The DEIS should also reference lower caribou calf productivity and a higher frequency of adult female reproductive pauses in an area west of the Sagavanirktok River compared to east of the river (Cameron 1995). Lowered fecundity of CAH females exposed to oilfields may be the result of poorer quality nutrition and reduced body condition as consequences of habitat loss and disruption of movements (Cameron 1995). **FWS #7** **FWS #8**

Page IV-B-38: Current information from the Alaska Department of Fish and Game (Wildlife Conservation Division, Fairbanks) regarding changes in the CAH summer range with respect to pipeline and oil field activities should be reviewed. A reference should be provided for the statement that: "...oil development in the Prudhoe Bay area apparently has affected local distribution on a small percentage (an estimated 5%) of the caribou's summer range." Contact Ken Whitten, Alaska Department of Fish and Game, Wildlife Conservation Division (Fairbanks), for recent information on population status and habitat selection of the CAH. **FWS #9** **FWS #9 cont.**

Polar Bears and Other Marine Mammals

The following narrative should be included in Section III. Description of the Affected Environment, B. Biological Resources, 5. Pinnipeds, Polar Bears, and Belukha Whales, b. Polar Bears (pg. III-B-9 - III-B-10).

> The North Slope Borough/Inuvailuit Game Council management agreement for the Southern Beaufort Sea includes sustainable harvest quotas based upon an estimate of population size, modeling sustainable yield rates for female polar bears, and information regarding the sex ratio of the harvest. These quotas are sustainable; however, any additional mortality from an oil spill, multiple oil spills, removal of chronic problem bears, abandonment of dens, etc., singularly or in combination could push removal rates beyond those believed to be sustainable. This user group agreement should be presented and referenced throughout the DEIS (see Treseder and Carpenter 1989, Nageak et al. 1991).
>
> The Marine Mammal Marking, Tagging, and Reporting Program records show that a total of 34 polar bears were harvested and tagged in the proposed lease sale area from 1988 to 1997.
>
> Polar bear hunters from Kaktovik report polar bears often travel along a lead which forms in November and occurs between 5-30 miles offshore between the Colville River and Demarcation Point (Fig. A-22, U.S. Fish and Wildlife Service, 1995). Polar bears have been observed feeding on ringed seals (*Phoca hispida)* in open water areas of the active ice 20-25 miles offshore between the Colville River and Tigvariak Island and have been observed feeding on whale carcasses at Tigvariak Island, Cross Island, and Oliktok Point. Lessees should be aware that these feeding sites may attract large numbers of polar bears. Barrier islands (e.g., Flaxman, Cross, and Pingok Islands) and shorefast ice adjacent to offshore islands, provide habitat for denning polar bears. **FWS #10**

The following narrative should be included in Section IV. Environmental Consequences, B. Effects of Alternative I - The Proposed Action, 6 Pinnipeds, Polar Bears, and Belukha Whales, b. Effects of Seismic Activities (pg. IV-B-33).

> Winter activities related to oil exploration, development and production may result in disturbance to maternity dens (Blix and Lentfer 1992, Amstrup 1993, U.S. Fish and Wildlife Service, 1995). Because dens in paths of seismic surveys or other industrial **FWS #11**

activity may incur physical damage (U.S. Fish and Wildlife Service, 1995), the Service recommends that operators obtain a Letter of Authorization for activities in polar bear habitats, especially during winter months, and contact the Service and the Alaska Department of Fish and Game to compare the locations of known active polar bear dens with industry activities. As a condition of the Minerals Management Service issued operator permit, industry should be required to report new dens encountered during exploratory activities to the Service and avoid known or observed den locations by one mile (until 15 April or until the den is vacated). The Service recommends that the Information to Lessees regarding polar bear interactions adopt the following: "Lessees are advised that polar bears may be present in the area of operations, particularly during the solid ice period. Proposed operations and actions should be conducted to minimize interactions with polar bears. When actions have the potential to take polar bears, lessees are advised to obtain appropriate Letters of Authorization from the Service. Lessees are encouraged to consult OCS Study MMS 93-0008, Guidelines for Oil and Gas Operations in Polar Bear Habitats."

FWS #11 cont.

Page II-15: "...activities associated with the Proposal are estimated to include the loss (due to an oil spill....) of small numbers of seals (200-300 seals), walruses (<100), polar bears (perhaps 20-30), and belukha whales (<10) with populations recovering....within about one year." The Service does not consider these losses as "small." References regarding population recruitment for all species should be included. Note that the recruitment estimate of "about one year" for polar bears differs from "about 3-5 years" on Page IV-CJ-40, "<5 years" on Page IV-B-35 and "5-7 years" on Page IV-CJ-32 (see below). Estimates for the numbers of polar bears ("<50", "perhaps 20-30", "20-30") affected by various project activities should be standardized.

FWS #12

Page III-B-7: Pinnipeds, Polar Bears, and Belukha Whales. In the first paragraph, the use of "(<100-<10)" is not understood. Please clarify the intended range.

FWS #13

Page III-B-9: "...this population has increased over the past 20-30 years at >2 percent per year and is believed to be stable or increasing at present...." This statement should be clarified to indicate that the population appears to be increasing slightly or stabilizing near its carrying capacity.

FWS #14

Page BIB-17: The USDOI, FWS, 1995 citations do not list a, b, c as in text. These should be corrected.

FWS #15

Page IV-B-33: "The number of bears lost as a result of such encounters is expected to be very low (such as <10 bears "taken")." The term "take" is inappropriate in this sentence. "Take" means to harass, hunt, capture, or kill, or attempt to harass, hunt capture, or kill (Marine Mammal Protection Act, 1972). This sentence should be reworded in the DEIS to clarify that from 0 to 9 polar bears are expected to be killed as the result of this project.

FWS #16

Page IV-B-33: "...noise and disturbance from air and marine traffic associated with exploration and development ...are expected to have short term local effects on marine mammal populations."

Page IV-B-34: "Noise disturbance and adverse effects associated with platform and offshore platform installation are expected to be very local...and not affect marine mammal populations." These sections and all paragraphs which address potential noise and industrial disturbance on polar bears should include the following:

FWS #17

> Cumulative effects from noise and industrial disturbance may be greater than short-term impacts if disturbance modifies or precludes the use of certain denning habitats and/or other habitats of equal quality are not available. Human activities in the offshore area may influence polar bear movements into terrestrial denning habitats causing a lower rate of denning by terrestrial bears. Use of marginal habitats by denning polar bears may result in lower productivity.

Page IV-B-35: "In a severe situation where a concentration of perhaps 20-30 bears were contaminated by an oil spill and all the bears died, this one-time loss is not likely to affect the Beaufort Sea population of polar bears; annual recruitment probably would replace lost bears within less than one generation (<5 years)." Because the Beaufort Sea polar bear population is estimated at 1778 animals (Amstrup et al. 1986), the Service would consider a loss of 20-30 bears as extremely serious. A reference should be provided for the recruitment estimate (see above). The term "generation" should be defined. For example, does this mean the time necessary for a cub to become sexually mature, breed, and produce a cub? Inconsistent recruitment estimates (years) should be corrected.

FWS #18

Page IV-CJ-26: "The incidental loss of polar bears due to cumulative oil and gas development in the Arctic is not expected to significantly increase the mortality rate..." This sentence should be deleted because any additional mortality beyond the existing harvest, calculated to be sustainable, could have deleterious population effects.

FWS #19

Page IV-CJ-27, second par. "These species are likely to suffer low (<50 polar bears) to moderate (<1,000 seals) mortality rates as the result of contact with oil; death may occur for several hundred to a thousand very young seal pups, walrus calves, and highly stressed pinnipeds. These losses from an estimated two to four oil spills are likely to be replaced within one generation or less (5-7 years);..." As stated above and below, references for the estimated recruitment rates for polar bears, walrus, and seals which occur in the lease area should be cited. In addition, justification should be provided as to why the stated mortality rates are considered "low" or "moderate."

FWS #20

Page IV-CJ-32: "Losses....are likely to be replaced within one generation or less (5-7 years)." A reference for the population recruitment should be provided and corrected throughout the document.

FWS #21

"Cumulative effects from oil spills would oil and contaminate from several hundred to a few thousand seals and walruses and small numbers of polar bears (<50)." Pertinent literature should be reviewed and mortality estimates for all marine mammal species affected by this project should be provided. As previously noted, the Service would not consider a range of polar bear mortality "(<50)" as "small." FWS #22

"Belukha whales would suffer low mortality (<30 whales), with a population recovery in 1 year." Delete the term "low" or justify its use; a citation for the recruitment estimate should be provided. FWS #23

Page IV-CJ-48: "...it is not likely that these pollutants [natural gas vapors and condensates] would affect any marine mammals except individuals present in the immediate vicinity of the blowout (the loss of probably <100 animals with such losses replaced within 1 year)." Clarify sentence to indicate if "<100 animals" is total or 100 animals per species. If possible, provide estimates for individual species as affected by this pollution. Provide citations which reference recruitment rates for all marine mammal species to support the stated replacement of individuals within 1 year. FWS #24

Threatened and Endangered Species

In response to your Call for Information and Nominations, our letter of 26 November 1996 referred to the Steller's eider (*Polysticta stelleri*) as being proposed for listing as a threatened species under the Endangered Species Act of 1973, as amended. The Service published a final rule listing the Alaska breeding population of Steller's eiders as a threatened species on June 11, 1997. A response to your request for formal consultation under Section 7 of the Endangered Species Act will be provided in a separate letter. FWS #25

Page III-B-5: Knowledge of the distribution and migration chronology of Spectacled eiders (*Somateria fischeri*) and Steller's eiders in the Beaufort Sea is critical relative to this environmental assessment; however, this information is not clearly presented. Both species may be present in the Beaufort during spring migration in May and June. Males may be present again in late June and early July, and nesting females and young of the year may be present in August and September (see Service comments in 26 November 1996 memorandum). FWS #26

As mentioned above, the Alaska breeding population of Steller's eiders was listed as threatened on June 11, 1997. The descriptions and discussions of this species throughout Chapters III and IV (Affected Environment and Environmental Consequences) should reflect this change in listing status. Otherwise, the information provided in our 26 November 1996 comments remains applicable, with the addition of the following suggested Information To Lessees: FWS #27 FWS #28

ITL ( )--Steller's Eider

Lessees are advised that the Steller's eider (*Polysticta stelleri*) is listed as threatened by the U.S. Fish and Wildlife Service and is protected by the Endangered Species Act of 1973, as amended.

Steller's eiders are present in the Chukchi and Beaufort seas during spring migration in May and June. Males return to the sea in late June, while nesting females remain on the arctic coastal tundra until late August or early September. Onshore activities related to OCS exploration, development, and production during the summer months (May - September) may affect nesting Steller's eiders. FWS #28 cont.

Lessees are advised that the Service will review exploration, development and production plans submitted by lessees to the Minerals Management Service in order to protect Steller's eiders and their habitats.

Page III-B-5, par. 3c. Spectacled Eider. This paragraph states that an "estimated 7,000 - 16,000 *or more*" spectacled eiders seasonally occupy arctic Alaska. A better estimate is a minimum of 7,000 - 9,000 Spectacled Eiders who occupy the Arctic Coastal Plain during the breeding season (Larned and Balogh 1994). This paragraph also states that "Recent surveys in the Prudhoe Bay area suggest a trend of increasing abundance occurred there from 1991 to 1994 (TERA, 1995)." These surveys are not necessarily indicative of the Arctic Coastal Plain population of Spectacled Eiders. This population index declined between 1994 and 1995 (TERA, 1996). FWS #29

Page III-B-5, par. 3d. Steller's Eider. This paragraph states that "Reproductive success is generally low with occasional good years, suggesting that *productivity is dependent primarily on adult survival*." The meaning of this sentence and the inferred correlation are not clear. Clarify and cite reference or delete sentence. FWS #30

Page IV-B-26, par. b2. Potential Effects of Aircraft/Vessel Disturbance. The migration periods for Spectacled Eiders includes May and early June, as well as the late June/early July and late August/September time periods mentioned in this paragraph. FWS #31

Additional Comments

Page III-B-5, par. 4. Marine and Coastal Birds. The last sentence of this paragraph states in part "in near shore coastal waters (<20m)...." Does the 20m refer to mean depth or distance from shore? FWS #32

Page III-B-3, par. 2c. This paragraph states that marine fish species are widely distributed in fairly low densities. "Fairly low densities" should be quantified according to the literature cited. FWS #33

Page IV-CJ-22: "...Native Elders feel that fox numbers...have increased in recent decades due to reduced trapping (Suydam, 1966, pers. comm), and numbers...." We presume that the date of this citation should be 1996. FWS #34

We appreciate this opportunity to comment on the DEIS. If you have any questions regarding these comments or desire further information, please contact Eric Taylor at (907) 456-0323.

erature Cited

ıstrup, S., I. Stirling, and J. Lentfer. 1986. Past and present status of polar bears in Alaska. Wildl. Soc. Bull. 14(3):241-254.

ıstrup, S. 1993. Human disturbances of denning polar bears in Alaska. Arctic 46:246-250.

x, A. S., and J. W. Lentfer. 1992. Noise and vibration levels in artificial polar bear dens as related to selected petroleum exploration and developmental activities. Arctic 45:20-24.

meron, R. D. 1995. Can petroleum development depress the productivity of Arctic caribou? Proc. of the Second Int. Arctic Ungulate Conf. Aug. 15-18, 1995. Univ. Alaska, Fairbanks, AK.

rned, B., and G. Balogh. 1994. Eider breeding population survey, Alaska Arctic Coastal Plain, 1993. U.S. Fish and Wildl. Serv. Prog. Rep., Anchorage, AK. 15 pp.

geak, B. P., C. D. N. Brower, and S. L. Schliebe. 1991. Polar bear management in the southern Beaufort Sea: an agreement between the Inuvailuit Game Council and North Slope Borough Fish and Game Committee. Trans. N. Am. Wildl. and Nat. Res. Conf. 56:337-343.

RA. 1993. Distribution and abundance of spectacled eiders in the vicinity of Prudhoe Bay, Alaska: 1992 status report. Troy Ecological Research Associates Inc., Anchorage, AK. 14 pp.

RA. 1996. Distribution and abundance of spectacled eiders in the vicinity of Prudhoe Bay, Alaska: 1995 status report. Troy Ecological Research Associates Inc., Anchorage, AK. 12 pp.

seder, L., and A. Carpenter. 1989. Polar bear management in the southern Beaufort Sea. Information North, 15:1-4.

S. Fish and Wildlife Service. 1995. Habitat conservation strategy for polar bears in Alaska. Unpubl. report, Marine Mammals Management, Anchorage, AK. 119 pp.

FWS-01
The FWS recommendation to defer from leasing all blocks from the eastern border of the sale area to the Canning River was echoed by many similar comments. Accordingly, the MMS developed Alternative V, which includes the option to defer the area offshore of the ANWR. More extensive than the Kaktovik deferral, Alternative V considers the potential deferral of 122 blocks covering 437,866 ha to the west of the Canning River. The FEIS fully examines the effects of any leasing activity associated with Alternative V, including the application of special mitigating measures in lieu of deferring this area.

FWS-02
The risk of a major oil spill from a subsea pipeline is small. Even in the unlikely event of pipeline damage, leak-detection systems, emergency-shut-down systems, and the natural balancing forces between the oil and sea water limit the rate and total volume of oil spilled. Natural topographical variations along the pipeline route further limit the total length of pipeline that would "empty" in the event of a leak (i.e., only that portion of the pipeline between the two highest points of the leak point would drain out of the pipe); this likely would be measured in hundreds of feet, not tens of miles.

The volume of oil spill resulting from a pipeline leak or rupture is a few barrels to a few thousand barrels that could be released over a several-day period. This is significantly different for response planning than a large, instantaneous tanker spill in the tens of thousands of barrels over a few hours.

Ice gouging is the most significant force that could damage a pipeline. The most likely time for significant ice gouging is in the freezeup period, during active formation of grounded ice and rubble piles (the most direct cause of ice gouging in shallower water). Subsea pipelines are most likely to parallel the shore in shallower water due to construction limitation and lower density and depth of ice gouging. An oil spill under these conditions would be contained in the ice and would pose minimal risk to onshore areas, while allowing time to mobilize an oil-spill response.

A project-specific oil-spill-contingency plan will be required for any development and production activity, including an associated pipeline. A lessee must demonstrate in the OSCP the ability to respond to a spill, including logistics and infrastructure. Response planning for a subsea pipeline off the ANWR will require consideration of alternative staging and support locations including Kaktovik, expanded response resources at the production facility, and possible landfalls outside the ANWR.

See also Responses TFA-11 and TFA-55 and Appendix C in the FEIS.

FWS-03
Because Kaktovik subsistence whalers rarely take bowhead whales west of 144°00'W. longitude and Nuiqsut subsistence whalers rarely travel east of 147°00'W. longitude, any activities at a Flaxman Island onshore site are not expected to disturb the subsistence bowhead whale hunt in these communities. The Flaxman Island area is a hypothetical landfall for OCS leases in Camden Bay. More detailed information on whether there would be facilities other than the landfall for an offshore pipeline cannot be determined at this time. If a development plan is submitted in the future in association with leases in Camden Bay, this information would then be available; and an assessment of effects of such facilities would be included in a developmental EIS. The comment overstates the amount of staging activity from a Flaxman Island facility; the quote referenced in this comment regarding onshore facilities pertained to onshore facilities at Kuparuk or Prudhoe Bay, as stated in Section IV.A.1.a(2)(b) of the EIS (Support and Logistics Activities).

FWS-04
Planning unit boundaries and designations are determined by the MMS approximately every 5 years. The determination is made prior to the issuance of a programmatic EIS that analyzes a proposed 5-year leasing schedule. During the planning process for this EIS, a call for public comment is issued regarding the sales proposed for the 5-year leasing schedule. It is at this stage of the process that the FWS and others who propose a separate planning area offshore the ANWR should voice their concerns. At the present time it is premature to consider a separate planning area, because planning areas and scheduled sales have been approved by Congress for the current 5-year leasing schedule. The planning process for the next programmatic EIS begins in 1999.

FWS-05
The caribou of the Central Arctic Herd (CAH) is not continuing to decline either east or west of the Sagavanirktok River (Whitten,1995, pers. comm.). Recent published information on the apparent correlation between oil-industry activities and reduction in caribou productivity is discussed in Section IV.B.7 (Effects on Caribou) of the FEIS.

FWS-06
The text of the FEIS has been revised in response to this comment.

FWS-07
The text of the FEIS has been revised in response to this comment.

FWS-08
Section IV.B.7 of the DEIS mentioned that CAH caribou cows calving on the oilfields seem to have a lower productivity than those calving to the east of the oilfields (Cameron, 1994).

FWS-09
The text of the FEIS has been revised in response to this comment.

FWS-10
The reference to the marine mammal marking, tagging, and reporting program showing that a total of only 34 polar bears were harvested and tagged in the proposed lease-sale area from 1988 through 1997 is incorrect. According to the FWS (USDOI, FWS, 1995b), the subsistence harvest for the Beaufort Sea polar bear population greatly exceeded 34 bears during the period 1988 through 1994. Perhaps 34 is the number harvested per year from the Beaufort Sea. The assumed one-time loss of 20 to 40 polar bears to the assumed 7,000-bbl spill contacting a bear concentration at a whale carcass is not expected to push removal rates of polar bears from the population beyond sustainable levels for >1 year at worst (see Sec. IV.B.6 under Site-Specific Effects of Oil Spills). Important feeding (on ringed seals) habitat of polar bears is shown in Figure III.B.5, the Active Ice (Flaw) Zone. The text of the FEIS has been revised in response to these comments.

FWS-11
The text of the FEIS has been revised in response to this comment.

FWS-12
The one-time loss of 20 to 30 polar bears to an oil spill should not be considered of great consequence, because the annual subsistence harvest of polar bears in the Alaskan Beaufort Sea often exceeds this level of loss (USDOI, FWS, 1995b). The differences in recovery times for the polar bear population in Sections IV.B.6.e (3), IV.E.9.b, and IV.F.6 reflect different assumptions on the numbers of oil spills assumed to occur under Alternative I and the cumulative case.

FWS-13
The text of the FEIS has been revised in response to this comment.

FWS-14
The text of the FEIS has been revised in response to this comment.

FWS-15
The text of the FEIS has been revised in response to this comment.

FWS-16
The text of the FEIS has been revised in response to this comment.

FWS-17
There is no evidence to support the contention that repeated exposure of polar bears to offshore and/or onshore noise and industrial activity has or would significantly displace denning polar bears to marginal habitats that could result in lower productivity. The FWS (USDOI, FWS, 1995b), in their polar bear-population assessment, concluded that polar bear exposure to "industrial activities" along the coast of the Beaufort Sea (noise and disturbance from oil exploration and development) "have not been found to be affecting rates of recruitment or survival" of the polar bear population.

FWS-18
Although the one-time loss of 20 to 40 bears to an oil spill would seem to be "very serious," the Beaufort Sea polar bear population is expected to recover from this loss within a few years or less. Assuming an annual recruitment rate from the current growth rate of 2.4 percent would allow a potential biological removal rate, or a yield of 48 bears per year, assuming equal sex ratio of removed bears and a subsistence harvest of 20 to 30 bears/year (USDOI, FWS, 1995). On the other hand, assuming a Beaufort Sea polar bear population of 2,000 and a sex ratio of 2:1 male to female, the sustainable yearly harvest would be about 76 bears, which is considerably more than the recent annual subsistence harvest of about 20 to 30 bears from this population under the NSB/Inuvailuit Game Committee Management Agreement on Polar Bears (Nageak, Brower, and Schliebe, 1991). Thus, although the additional loss of 20 to 40 bears from the spill is over and above the subsistence harvest of 20 to 30 bears (a total of 40-70 bears removed from the population that 1 year or 8-22 bears over the 48 bears/year yield), the population is expected to recover within less than one generation (or 3-5 years for recovery and an assumed polar bear generation time of at least 7-8 years), even if the sustainable yield is exceeded for 1 year. A generation time for polar bears is defined as the average time interval between the birth of the female bear and the birth of her offspring, which is at least 7 to 8 years. Some of the bears lost to the spill also are expected to be 48 bears/year, animals that would have been harvested that year. In fact, the harvest rate for the year of the spill probably would be <20 to 30 bears because of the reduced availability of bears to subsistence hunters as a result of the spill. If the population of bears is assumed to be 2,000 with a sex ratio of 2:1 male to female and a sustainable yearly harvest of about 76 bears, then the loss to the spill (20-40) plus the harvest (20-30 bears) would not exceed the sustainable yield for that year. Thus, the loss of 20 to 40 polar bears is serious but is not expected to be of long-term consequence to the population. See also Response FWS-09. A definition for "generation" has been added to the text of Section IV.B.6 in the FEIS.

FWS-19
The text of the FEIS in Section IV.J.6 has been revised in response to this comment, See also Response FWS-18 (Nageak, Brower, and Schliebe, 1991).

FWS-20
The text of the FEIS has been revised in response to this comment.

FWS-21
The text of the FEIS in Section IV.J.6 provides information on polar bear-population recruitment, and a reference to this section has been added to the text under Section IV J.9.

FWS-22
See Response FWS-20.

FWS-23
See Response FWS-20.

FWS-24
The text of the FEIS has been revised in response to this comment.

FWS-25
The text of the FEIS has been revised to reflect listing of the Steller's eider as threatened under the Endangered Species Act (ESA).

FWS-26
The text of the FEIS has been revised to more accurately indicate the chronology of eider presence in the Beaufort Sea area.

FWS-27
See Response FWS-25.

FWS-28
The ITL on the spectacled eider and the Steller's eider has been updated to incorporate the changed status of the Steller's eider. The text of the FEIS has been revised to reflect listing of the Steller's eider as threatened under the ESA.

FWS-29
Suggested changes concerning the spectacled eider have been incorporated into the appropriate text of the FEIS.

FWS-30
The referenced sentence has been deleted from the FEIS.

FWS-31
The suggested wording has been added to the text of the FEIS.

FWS-32
The cited statement has been revised to clarify the reference to depth contour in the FEIS.

FWS-33
The cited literature (Irvine and Meyer, 1990:8) does not quantify "fairly low densities." Therefore, no numerical values can be assigned to this phrase.

FWS-34
The text of the FEIS has been revised in response to this comment.

July 17, 1997

P. O. Box 332
Fort McPherson, NT X0E 0J0
Canada

Mr. John Goll, Regional Director
US Minerals Management Service
Alaska OCS Region
949 E 36TH Street
Anchorage, AK 99508 - 4302

Dear Mr. Goll:

I recently received information that you plant to allow drilling in the coastal areas of the Arctic Refuge.

I am a Gwich'in from the Northwest Territories and I strongly disagree with the idea of drilling in the coastal areas where the Porcupine Caribou calf. We the Gwich'in Nation of Canada depend on the caribou for food and clothing. This means that we strongly depend on the caribou to sustain us through the winter months as we pay a lot of money for groceries.

I oppose federal Lease Sale 170 and any other attempt to lease coastal waters adjacent to the Arctic National Wildlife Refuge. This poses a major threat to the unique wildlife and irreplaceable wilderness values of the Arctic Refuge. I doubt that offshore leasing in Alaska's Arctic can be done safely. Production from offshore leases would require undersea pipelines in waters where ice flows scrape and scour the shallow seabed. Nobody knows how to cleanup an oil spill under the sea ice. Please NO LEASING. GTC #1

Sincerely,

Margaret Thompson

GTC-01
See Responses TFA-11 and TFA-55 and Appendix C in the FEIS.

RECEIVED
JUN 13 1997

REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

June 10, 1997

Regional Director
Minerals Management Service
949 East 36th Avenue
Anchorage, Alaska 99508-4302

Re: Draft EIS, Beaufort Sea Planning Area Oil and Gas Lease Sale 170

Dear Sir:

I have reviewed the draft EIS, Beaufort Sea Planning Area Oil and Gas Lease Sale 170. There is no discussion of fresh water supplies or water rights for fresh water use. As you should be aware, to use fresh water in any of the western states, a water rights to the legal use of water for beneficial use must be obtained. Additionally, there is no discussion of fresh water needs and uses.

Are the drilling ships self contained? Do they carry their own fresh water supply? **LYONS #1**

Where will this fresh water come from? Is fresh water produce from salt water through a desalinization process? **LYONS #2**

Is there a legal water right for this water supply? **LYONS #3**

If the water is coming from the Prudhoe Bay area, is this use covered under the existing water right permit? **LYONS #4**

How much fresh water is needed? **LYONS #5**

Are water pipelines required? If so, what are the impacts (beneficial or adverse)? **LYONS #6**

Page IV-B-78, first paragraph, identifies potential impact to natural drainage patterns due to cross slope road development. It is a fact that as one proceeds eastward from Prudhoe Bay toward the Canning River, the general gradient increases. Development of cross slope roads and pipelines will impound water on the up slope side of the road, thus the down slope side will not receive the natural water supplies that the ecosystem has evolved under. It can be expected that the down slope habitat will change to what normally is associated with the dry upland vegetation species. **LYONS #7** Is this conversion from wetland species to something else an acceptable impact? How will this affect the natural diversity of the migratory birds that use this area. **LYONS #8** Mitigation is possible to minimize this impact. As an example, culvert pipes through the roadbed at frequent intervals. What are other possible mitigation to this impact?

Thank you for the opportunity to review this document. I hope that my thoughts will be of assistance to you in developing a comprehensive EIS.

Sincerely,

Steven Lyons

Steven Lyons
18411 Kittiwake Cir
Anchorage, AK 99516

AMERICAN INSTITUTE OF HYDROLOGY
Certificate Number 555
STEVEN M. LYONS
Professional Hydrologist

LYONS-01
Drilling ships are self-contained, and they are equipped with holding tanks for potable water.

LYONS-02
Freshwater is produced by various types of equipment, including desalinization units, and runoff excess heat from engines or drilling rigs.

LYONS-03
No permit is required for self-produced water.

LYONS-04
Some wells have been drilled from artificial islands, such as the Liberty well drilled from Tern Island. In this case, some of the water used was freshwater taken from mainland lakes. The lessee or operator must obtain a Temporary Water Use Permit from the State of Alaska for this purpose. Freshwater is used primarily by personnel for showers, cooking, drinking, etc. Some freshwater may be used in drilling muds. The State has jurisdiction over the navigable waters on the North Slope.

LYONS-05
As a rule of thumb, 100 gallons per day per crew member is considered adequate. A drilling-rig crew numbers approximately 40; thus, 4,000 gallons per day are needed. Much larger quantities of water are required by the actual drilling operation. A 10,000-foot well could require approximately 850,000 gallons of makeup water for drilling mud. However, drilling muds typically are seawater based and obtained by intake lines on location (offshore). No permit is required for seawater intake, but a National Pollution Discharge and Elimination System (NPDES) permit is required for any discharge.

LYONS-06
Freshwater pipelines are present in the Prudhoe Bay area. The main water supply for onshore facilities is from surface-water sources (lakes, artificial impoundments, snowmelters, etc.). "Right of capture" rules apply; there are no specific water rights granted. Permits for water use are obtained through the State of Alaska. The impacts of onshore water pipelines are beyond the scope of consideration for a prelease EIS. Such particulars will be dealt with in a developmental EIS, should recoverable quantities of hydrocarbons be located.

LYONS-07
The Arctic Coastal Plain can best be characterized as a mosaic of tundra wetlands with extremely low relief. As the permafrost prevents water from entering the ground and the low relief limits runoff, the coastal plain is covered with lakes, ponds, and generally slow-moving streams. Natural drainage patterns can be disrupted where gravel roads divert, impede, or block flow in stream channels, lake currents, or shallow-water tracks. Blockages or diversions to areas with insufficient flow capacity can result in seasonal or permanent impoundments. Proper siting and adequate design capacity of culverts, bridges, pipelines, and other structures will minimize drainage problems. Pipelines generally will be positioned aboveground and supported by vertical support members; the minimum pipeline elevation aboveground is 5 feet.

LYONS-08
Substantial addition of new cross-slope roads that would impede natural drainage patterns and result in impoundments is not projected for Alternative I; thus, significant alteration of wetland habitats or corresponding species richness are not expected. For any short length of new road that may be associated with Alternative I, proper attention to siting and adequate design capacity of culverts and bridges along roads is expected to minimize drainage problems. Offshore pipelines are expected to connect with existing onshore pipelines and the Trans-Alaska Pipeline System (TAPS). If constructed according to currently anticipated methodology (e.g., ARCO, 1996), any new connecting pipeline will not be accompanied by a road and significant impoundment would not be expected. In addition, at least one study (Noel, Schick, and

Johnson, 1996) has indicated that artificial impoundments generally support higher waterfowl and lower shorebird densities than undisturbed habitats, but this is highly variable and not statistically significant. Also, Troy and Carpenter (1990) found that birds displaced by habitat alteration readily nested successfully in nearby undisturbed habitat.

MARINE MAMMAL COMMISSION
4340 EAST-WEST HIGHWAY, ROOM 905
BETHESDA, MD 20814

17 July 1997

RECEIVED
JUL 18 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Mr. John T. Goll
Regional Director
Minerals Management Service
Alaska Region
949 East 36th Avenue, Suite 308
Anchorage, AK 99508-4302

Dear Mr. Goll:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors, has reviewed the Draft Environmental Impact Statement for the Beaufort Sea Planning Area Oil and Gas Lease Sale 170. The Commission offers the following comments and recommendations regarding the assessment of the possible impacts of the proposed lease sale on marine mammals.

General Comments

The Draft Environmental Impact Statement (DEIS) provides an assessment of the resource potential and the possible environmental consequences of a proposal to lease approximately 1.7 million acres of submerged lands in the Beaufort Sea Planning Area for oil and gas exploration and development. It indicates that the proposed lease area is located 5 to 40 kilometers from shore. The DEIS also provides assessments of the resource potential and possible environmental consequences of three alternative actions, including a "no action" alternative.

The DEIS indicates (page III-B-7) that six species of nonendangered marine mammals occur commonly in the Alaskan Beaufort Sea, namely ringed seals, bearded seals, spotted seals, walruses, polar bears, and belukha whales. The DEIS indicates (page III-B-4) that bowhead whales occur seasonally in the Beaufort Sea Planning Area and that the species is listed as endangered under the Endangered Species Act. It notes that gray whales, harbor porpoises, killer whales, narwhals, and hooded seals occur occasionally in small numbers in the planning area and that, because of their "numerical insignificance," these species are not discussed further. **MMC#1**

The DEIS indicates (page IV-B-17) that "OCS activities under the Proposal and the development of its resource estimate may

result in noise and disturbance, altered habitat, and spilled oil or other contaminants, such as discharges of drilling muds and cuttings, and could adversely affect the behavior, distribution, and abundance of individuals or populations occurring in or adjacent to the Sale 170 area." With regard to nonendangered marine mammals, the DEIS concludes (page IV-B-37) that --

> "[t]he effects from activities associated with the Proposal are estimated to include the loss (due to an oil spill, 46-70% chance) of small numbers of seals (200-300), walruses (<100), polar bears (perhaps 20-30), and belukha whales (<10), with populations recovering (recovery meaning the replacement of individuals killed as a consequence of the Proposal) within about 1 year."

The DEIS concludes (Page IV-B-25), with respect to bowhead whales, that --

> "[o]verall, bowhead whales exposed to discharges of drilling muds and cuttings, noise-producing activities, and oil spills most likely would experience temporary nonlethal effects. It is expected that many wells likely would be drilled in relatively nearshore waters outside of the main migration route. Bowheads may exhibit temporary avoidance behavior in response to seismic surveys, vessel and aircraft activities, drilling, and construction during exploration and development and production....In general, bowheads do not appear to travel more than a few kilometers in response to a single disturbance incident. Behavioral changes may last up to 60 minutes after the disturbance has left the area or the whales have passed....Some bowhead whales could be exposed to spilled oil, resulting primarily in temporary, nonlethal effects. Some mortality might result if exposure to freshly spilled oil were prolonged; however, the population is expected to recover within 1 to 3 years."

MMC#1 cont.

As noted below, the rationale for these conclusions is not evident. They appear to be based on a number of unstated assumptions which may or may not be valid. They are not, but should be, clearly supported by data, analyses, or bibliographic references in the text.

The DEIS does a reasonably good job of (a) summarizing what is known about marine mammals in the Beaufort Sea; (b) identifying the possible effects of the proposed action on marine mammals; and (c) noting some significant uncertainties. However, as noted above, many of the statements and conclusions in the DEIS are not well supported by data, analyses, or bibliographic references. Consequently, it is not possible to assess whether **MMC#2**

certain statements and conclusions are valid. For example, little information is provided on the feeding habits and food requirements of the various marine mammal species that occur in and near the proposed lease sale area and how essential prey species might be affected by the proposed activities. Therefore, it is not clear that marine mammals could not and would not be affected adversely by possible second order food-chain effects. Also, the DEIS does not identify many of the critical uncertainties concerning the natural history, demography, and essential habitats and habitat components of the marine mammals that could be affected or how they might be affected, both directly and indirectly. For example, long- and short-term effects of exposure to toxicants on marine mammal reproduction, longevity, and other aspects of their biology are poorly understood. Both the uncertainties and what the Service is doing or plans to do to ensure that they do not lead to significant unforeseen adverse effects on marine mammals or other components of the Beaufort Sea ecosystem should be described in the Final Environmental Impact Statement (FEIS). **MMC #2 cont.** **MMC #3**

In this same regard, it is not clear how the anticipated levels of mortality or the stated recovery times were determined. Without information on the natural history, population dynamics, and productivity of the various species it is not possible to judge if the estimated recovery times are reasonable. **MMC #4**

Also, the sections assessing potential cumulative impacts identify the various possible sources of impacts in addition to the proposed action. However, they do not provide assessments of the possible additive and synergistic effects of the combined sources, including the possible effects of repeated exposure to disturbance from the proposed activities that would follow if the proposed leasing occurs. **MMC #5**

The FEIS should provide a more complete assessment of what is known about the demography, habitat requirements, and status of the marine mammal species that occur in the Beaufort Sea and adjacent waters and how they could be affected directly, indirectly, and by repeated exposures to oil and gas activities in and near the proposed sale area. **MMC #6**

The Marine Mammal Commission recognizes that it could be prohibitively costly, if not impossible, to obtain all of the information necessary to accurately predict the possible direct and indirect effects of the proposed action on every species and population that could be affected by it. Consequently, some requirements of the Marine Mammal Protection Act and other relevant legislation, such as the Endangered Species Act, might best be met by designing and conducting post-lease sale monitoring programs to detect possible unforeseen adverse effects before they reach significant levels. In this regard, we note that section 20 of the Outer Continental Shelf Lands Act, as **MMC #7**

amended, requires that the Service conduct post-lease monitoring to detect and determine the cause of environmental change possibly resulting from oil and gas exploration and development. The design and the results of the monitoring program(s) should be peer reviewed. Power analyses should be done at the design stage to ensure that the monitoring programs will be capable of detecting possible unforeseen adverse effects. **MMC #7 cont**

Specific Comments

Page I-7 (Alternatives, (2) Delete All Blocks Within a 50-Mile Radius of Barter Island): This section describes a suggested alternative to the preferred alternative which involves removing from consideration all blocks near Barter Island. The DEIS states (page 1-7) that --

> "[t]his deferral option was requested by the City of Kaktovik and was supported by the NSB [North Slope Borough]....The MMS adopted a number of mitigation measures for monitoring and protection of biological and subsistence resources; these stipulations are attached to the Sale 144 leases. These stipulations are considered part of the proposed Sale 170 area, and will be analyzed to determine whether sufficient protection is afforded to biological and subsistence resources" [emphasis added].

However, the DEIS does not indicate how, when, or by whom the stipulations will be analyzed; neither does it identify the criteria that will be used to determine if biological and subsistence resources are adequately protected. This section should be expanded in the FEIS to more fully explain how the stipulations will be analyzed to determine if they afford sufficient protection to biological and subsistence resources and, if they do not, describe the steps that will be taken to ensure that the biological and subsistence resources are adequately protected. **MMC #8**

Pages II-2 through II-8 (Mitigating Measures that are Part of the Proposed Action and the Alternatives, No. 5 Information on Bird and Marine Mammal Protection): The DEIS states (page II-2) that "[t]his report details the laws and regulations under which the MMS OCS leasing program operates; the report also outlines permit requirements, engineering criteria, testing procedures and information requirements." However, the information provided is incomplete. The FEIS should provide a more complete description of the intents and provisions of the Marine Mammal Protection Act, the Endangered Species Act, the Outer Continental Shelf Lands Act, and other statutes relevant to the activities described in the DEIS. **MMC #9**

Page III-C-6 (Table III.C.2-3): This table provides information (in percentages and total weight) on the relative importance of various species to Native subsistence users in three Beaufort Sea communities. Some of the information provided in the table is confusing and might be inaccurate. For example, the information in the table suggests that the total subsistence harvest in Kaktovik was roughly five times greater in 1992 than it was for the years 1962 through 1982 (170,939 lbs for 1992 versus 32,408 lbs for 1962-1982). Also, Table III.C.2-3 indicates that the total harvest of polar bears in Nuiqsut in 1985 was zero percent, whereas Table III.C.2-5 (page III-C-14) indicates that the people in Nuiqsut harvested at least one and possibly as many as five polar bears in 1985. These may be typographical errors. If not, explanations for these entries would be useful.

MMC #10

Pages IV-A-14 through IV-A-18 (Aspects of Spill Prevention and Response, In Situ Burning): On page IV-A-15 the DEIS states that --

> "[b]ecause of the high removal rate and efficiency of [in situ burning], it is becoming more widely accepted as a response technique. In situ burning also has been demonstrated to be an extremely useful spill-response tool in open water with the use of fire-resistent containment boom. The effectiveness of the technique has been demonstrated in the laboratory, test tanks...and in the field during the Exxon Valdez spill. Because of the validity of this response tool, the Alaska Regional Response Team (ARRT) has provided conditional preapproval for the Federal On-Scene Coordinator (FOSC) to approve in situ burning in Cook Inlet, Prince William Sound, and the Beaufort Sea."

The Commission understands the potential value of burning oil spilled in the marine environment. However, the technique is still largely experimental and the effectiveness and the possible ecological consequences of using such a technique have not been fully evaluated. In this regard, the DEIS does not describe the possible by-products that would likely enter the air and water column as a result of a burn, or how the by-products would affect air and water quality. Also, inasmuch as there have been few at-sea trials involving actual spills, particularly in cold, ice-covered waters, the Commission believes that there are significant uncertainties about how various weather, sea, and ice conditions would affect the efficiency of the burn, how efficiently various grades of oil are likely to burn under different environmental conditions, and whether the oil would burn efficiently if it is not ignited soon after the spill occurs and before weathering and evaporation have occurred.

MMC #11

Also, it is not clear what is meant by "conditional preapproval" in the above quote. Likewise, it is not clear what conditions must be met to make the determination that in situ burning is the most appropriate response to a spill.

Therefore, the Marine Mammal Commission recommends that this section of the FEIS be expanded to identify and more completely describe the range of possible environmental consequences of burning spilled oil, including a description of the by-products of burns which enter the air and water column, and their potential adverse effects on air and water quality, the Arctic marine environment, and its biota, including marine mammals and key marine mammal prey species. If there are uncertainties in these regards, they should be identified clearly.

MMC #11 cont.

Pages IV-B-17 through IV-B-18 (Endangered and Threatened Species): Among other things, this section provides an analysis of the effects of a possible oil spill on species along transportation routes outside Alaskan waters. On page IV-B-17 the DEIS states that --

> "[t]he analysis of oil-spill risk on species along transportation routes south of the proposed sale area particularly the Southern sea otter and the marbled murrelet, can be found in the Cook Inlet Planning Area Oil and Gas Lease Sale 149 FEIS which is incorporated by reference. That FEIS discusses potential effects of an oil spill on these species as a result of tankers transporting oil from the Cook Inlet sale area to California ports."

Later in the same section (page IV-B-18, end of the first full paragraph) the DEIS states that --

MMC #12

> "[s]everal species of endangered whales also occur in waters adjacent to the route, but they are not likely to experience any mortality from exposure to spilled oil...the effects on the listed species are expected to be minimal."

The Commission commends the Service for providing an assessment of the potential environmental effects of an accidental spill along the routes where oil will be transported by tanker. The DEIS provides a reasonably good analysis of the possible effects of such an event on sea otters and some pinniped species. However, it provides no rationale for the statement that endangered whale species exposed to such a spill are not likely to experience mortality; nor does it explain why the effects on those species are expected to be minimal.

In this regard, the Commission notes that transport of oil from Alaska will require the ships to pass near areas in Alaska,

MMC #13

British Columbia, and elsewhere that include pinniped rookeries and haul-out sites, including those of threatened and endangered Steller sea lions, and important feeding areas and migration routes for gray, humpback, and other whale species. Should a spill occur at any location along the transport route a number of pinniped and whale species could be directly or indirectly affected. Therefore, this section of the FEIS should be expanded to provide (1) a more thorough explanation as to why the adverse effects of an oil spill on endangered whale and other species are expected to be minimal, or (2) an analysis of the possible direct and indirect effects of an oil spill on, among other things, the demography and productivity of marine mammals and other marine organisms along the transport routes.

MMC #13 cont.

Pages IV-B-7 through IV-B-25 (Effects of Oil, Effects on the Bowhead Whale): Here and elsewhere, the DEIS makes a number of statements that are not clearly supported by data and analyses or references to appropriate literature. For example, the second full paragraph on page IV-B-20 states that --

> "[g]enerally, most bowheads exhibit avoidance behavior when exposed to sounds from seismic activity at a distance of a few kilometers but rarely show avoidance behavior at distances >7.5 km (4.7 mi). Bowheads' surface-respiration-dive characteristics appeared to recover to pre-exposure levels within 30 to 60 minutes following the cessation of the seismic activity."

and the third full paragraph on page IV-B-21 states that --

> "[i]n general, bowheads may exhibit avoidance behavior if approached by vessels at a distance of 1 to 4 km (0.62-2.5 mi). Fleeing from a vessel generally stopped within minutes after the vessel passed, but scattering may persist for a longer period. In some instances, bowheads returned to their original locations."

MMC #14

These statements may be accurate. However, without the relevant data and analyses or references to the sources of the information it is not possible to judge their validity. Also, these statements do not reflect the fact that effects and the distances at which effects occur may vary depending upon such things as the frequency composition of the sound, water depth, bottom type, and bottom contour. In addition, marine mammal responses to underwater noise will vary in some cases depending upon what the animal is doing. That is, individuals engaged in essential functions such as feeding or breeding may react to a stimulus at a higher threshold than resting or milling animals. Therefore, this section in the FEIS should be expanded to at least note these variables.

On a related point, this section concludes (on page IV-B-25) that --

> "[s]ome bowhead whales could be exposed to spilled oil, resulting primarily in temporary, nonlethal effects. Some mortality might result if exposure to freshly spilled oil were prolonged; however, the population is expected to recover within 1 to 3 years."

MMC #15

As noted above, it is not clear how the stated recovery time was determined. Also, it is not clear what is meant by "some mortality." If relatively few adult females in their prime reproductive years were killed incidental to oil and gas exploration- and production-related activities, the effects on the demography and productivity of the population could be profound and long-term. Therefore, the rationale for the conclusion regarding recovery time should be explained.

This and other sections of the DEIS cite studies by Geraci, St. Aubin, and others which suggest that contact with oil, and consumption of oil and oil-contaminated prey, are unlikely to have serious direct effects on cetaceans. However, the results of studies of the effects of the Exxon Valdez oil spill on seals, sea otters, and other marine mammals[1] suggest that oil spills may have substantially greater acute and chronic effects on marine mammals, including cetaceans, than indicated by the studies cited. Therefore, the Marine Mammal Commission recommends that the Minerals Management Service, if it has not already done so, consult with the National Marine Fisheries Service, the Fish and Wildlife Service, the Environmental Protection Agency, the Alaska Department of Fish and Game, and other organizations, as appropriate, to obtain the best available information concerning both the direct and indirect effects of the Exxon Valdez oil spill on cetaceans and other marine mammals.

MMC #16

Pages IV-B-32 through IV-B-37 (Effects of Alternative I - The Proposed Action On: Pinnipeds, Polar Bears, and Belukha Whales): As noted earlier, the DEIS states (page IV-B-32) that "[n]oise and disturbance, alteration of habitats, and oil pollution could adversely affect some portion of these marine mammal populations found in the proposed Sale 170 area." A number of other activities or factors not identified also could have deleterious effects on marine mammals. They include platform removal, discarded trash and debris from service vessels and drill platforms, and vessel operations and other activities required to contain and clean-up oil spills.

MMC #17

[1]See for example, Loughlin, T. R. (ed). 1984. Marine Mammals and the Exxon Valdez. Academic Press, San Diego, CA. 395 pp.

In addition, the analysis in this section does not identify or consider the full range of possible direct and indirect effects of contact with spilled oil, many of which were illustrated by the Exxon Valdez oil spill. For example, oil spills also could cause (1) starvation or nutritional deficiencies by reducing the abundance or productivity of important prey species; (2) stress making animals more vulnerable to disease, parasitism, environmental contaminants, and predation; (3) animals to abandon or avoid feeding areas or other areas of similar importance; and (4) animals to be attracted to prey debilitated by the oil, making them more vulnerable to contact with oil and ingestion of contaminated prey.

MMC #18

The FEIS should be expanded to provide a more complete assessment of how marine mammals possibly could be affected, both directly and indirectly, by offshore oil and gas exploration and development activities and related possibilities, such as oil spills, in the lease sale area. The various ways that marine mammals possibly could be affected by oil and gas exploration and development are outlined in the attachment to this letter. This outline can be used as a checklist for determining whether the FEIS has assessed all reasonable possibilities.

On a related point, this section contains some apparent inconsistencies and points that require clarification. For example, in the fourth full paragraph on page IV-B-37 it is stated that --

> "[r]inged seal pups and polar bears are the species most likely to suffer direct mortality from oil spills in the sale area. A small number of ringed seals -- perhaps 75 to 100 pups and highly stressed adults -- and a small number of polar bears (no more than perhaps 20-30 in a severe case) could die if a spill occurred. This would represent no more than a short-term (<1 generation) effect on the Beaufort Sea populations, with losses within the populations replaced within about 1 year."

MMC #19

However, two paragraphs later the DEIS concludes that --

> "[t]he effects from activities associated with the Proposal are estimated to include the loss (due to an oil spill, 46-70% chance) of small numbers of seals (200-300), walruses (<100), polar bears (perhaps 20-30), and belukha whales (<10), with populations recovering (recovery meaning the replacement of individuals killed as a consequence of the Proposal) within about 1 year."

One statement indicates that 75 to 100 ringed seals might be killed, the other indicates that mortality levels in seals might

be as high as 200-300 individuals. Also, it is not clear how the estimates of mortality levels were derived or why they are considered "small numbers." Nor is it clear why the affected marine mammal populations would be expected to replace 200-300 individuals within one year.

MMC #19 cont

Pages IV-CJ-13 through IV-CJ-28 (Effects of the Cumulative Case): This section states (page IV-CJ-13) that --

> "[t]he analysis for the cumulative case is based on the potential effects associated with (1) exploitation of known or estimated resources from onshore and offshore State and/or Federal leases, (2) major potential and ongoing resource-development projects, (3) major potential and ongoing construction projects, and (4) other facilities whose activities may affect the proposed sale area."

With regard to bowhead whales, the DEIS concludes (page IV-CJ-21) that --

> "[b]owheads may exhibit avoidance behavior to vessels and activities related to seismic surveys, drilling and construction during exploration and development and production. Some bowhead whales could be exposed to spilled oil, resulting in temporary, nonlethal effects, although prolonged exposure to freshly spilled oil could result in lethal effects to a few individuals, with the population recovery to prespill population levels within 1 to 3 years. Overall, bowhead whales exposed to noise-producing activities and oil spills associated with the Proposal and other future and existing projects within the Arctic region -- combined with other activities within the range of the migrating bowhead whale -- most likely would experience temporary, nonlethal effects. The overall contribution of the proposed action to the cumulative effect is expected to be of short duration and to result in primarily temporary, nonlethal effects."

MMC #20

As noted earlier, although exposure to individual sources of disturbance may result in temporary avoidance behavior, cumulative effects may not be temporary. The DEIS does not, but should, consider the possible cumulative effects of repeated exposure to such activities. Repeated disturbance could result, for example, in abandonment of important feeding areas or migration routes. Also there is no discussion in this section of other sources and levels of human-related mortality and injury (e.g., hunting of polar bears, belukha whales, and seals) either within the proposed lease sale area or in other areas where marine mammals from the sale area may occur at different times of the year.

The Marine Mammal Commission recommends that this section of the FEIS be expanded to provide a more thorough assessment of how the proposed action, by itself and in combination with other sources of human-caused mortality, injury, and habitat degradation, might affect the marine mammal populations in the Beaufort Sea. If there are uncertainties regarding possible cumulative effects, they should be identified. Also, steps that will be taken to resolve critical uncertainties and to detect possible cumulative adverse effects should be described. **MMC #20 cont.**

Pages IV-CJ-50 through IV-CJ-55 (Effects of a Low-Probability, High-Effects, Very Large Oil Spill Event): This section provides a description of the possible effects of a large oil spill (160,000 bbl) on each of the marine mammal species that commonly occur in the Beaufort Sea Planning Area. It does not, but should, provide assessments of the possible indirect food-chain effects if a large spill occurs and contacts important marine mammal feeding areas. If there are uncertainties concerning the distribution, abundance, seasonal movement patterns, food habits, food requirements, etc. of the various species, or how important prey species or other components of the food web of which marine mammals are a part might be affected by oil spills, the uncertainties should be identified clearly. **MMC #21**

Summary

In summary, the DEIS provides a generally thorough overview and assessment of the possible direct effects of oil and gas activities in the proposed lease sale area on marine mammals. It does not, however, provide a thorough or objective assessment of all possible effects on marine mammals and their habitat in the Beaufort Sea Planning Area. In this regard, there is little discussion or consideration given to the possible indirect effects of the proposed action on marine mammals through impacts on important prey species and feeding areas. Likewise, there is little discussion of the possible cumulative or synergistic effects of repeated or chronic exposure to contaminants or disturbance that could occur if the lease sale occurs as proposed. In general, the DEIS makes, but does not adequately support, conclusions regarding both effects and recovery times, a deficiency that raises questions concerning the validity of the conclusions.

The Commission believes that the Minerals Management Service can and should expand the FEIS to provide a more thorough assessment of both the possible indirect food-chain effects and the possible direct effects of the proposed action on marine mammals. If available information is insufficient to accurately predict the possible effects of the proposed action, the FEIS should identify the uncertainties and describe the additional

studies being conducted or planned to resolve the uncertainties and the monitoring programs that are being or will be conducted to verify that oil and gas exploration and development in the Beaufort Sea do not have unacceptable adverse effects.

* * * * *

I hope that these comments and recommendations are helpful. If you or your staff have questions about any of them, please let me know.

Sincerely,

Robert J. Hofman, Ph.D.
Scientific Program Director

Enclosure

cc with enclosure: Ms. Cynthia Quarterman

POSSIBLE EFFECTS OF OFFSHORE OIL AND GAS DEVELOPMENT ON MARINE MAMMALS[1]

I. Disturbance/noise from ship and aircraft operations, seismic profiling, platform construction, drilling, etc., may--

a. interfere with or disrupt vocal communications, feeding, breeding, or other vital functions;

b. cause animals to avoid or abandon important feeding areas, breeding areas, resting areas, or migratory routes;

c. cause animals to use marginal habitat or to concentrate in undisturbed areas which in turn may result in crowding, over-exploited food resources, increased mortality, and decreased reproduction;

d. stress animals and make them more vulnerable to parasites, disease, environmental contaminants, and/or predation;

e. attract animals making them more vulnerable to oil spills, hunting, harassment;

f. alter the distribution, density, movements, or behavior of important prey species.

II. Dumping, dredging, drilling, and platform, pipeline, support facility and storage facility construction may--

a. damage or destroy haul-out sites, feeding areas, or other areas of similar importance; and

b. adversely affect the distribution, abundance, behavior, or productivity of important prey species.

III. Oil from well blow-outs, pipeline breaks, tanker accidents, and chronic discharges associated with routine operations may--

a. kill or debilitate marine mammals by: matting and reducing the insulating quality of fur, acute or chronic poisoning due to inhalation or ingestion of toxic hydrocarbon components or ingestion of contaminated food; irritation of skin, eyes, or mucous membranes or fouling of baleen;

[1] Prepared by the Marine Mammal Commission.

b. kill, debilitate, or otherwise reduce the abundance or productivity of important prey species and/or species lower in the marine food web resulting in acute or chronic nutritional deficiencies including starvation;

c. stress animals making them more vulnerable to disease, parasitism, environmental contaminants, and/or predation;

d. interfere with formation of mother/pup bonds and cause mother's (particularly colonial breeding pinnipeds) to abandon pups;

e. cause animals to abandon or avoid contaminated breeding areas, feeding areas, etc. and/or to concentrate in unaffected areas; and

f. attract animals to debilitated prey making them more vulnerable to contact with oil and ingestion of contaminated prey.

IV. Contaminants in drilling muds, waste discharge, etc. may--

a. kill or debilitate animals that are exposed to these contaminants;

b. contaminate, accumulate in, and kill or debilitate important prey species or species lower in the marine food web.

V. Increased ship traffic may--

a. increase the probability of collisions between ships and marine mammals.

MMC-01
Assumptions about the amount of industrial activity to which nonendangered marine mammals are assumed to be exposed include (1) number of exploration and development platforms, (2) miles of offshore pipeline, (3) seismic lines shot, and (4) number of oil spills estimated to occur. These and other assumptions are discussed in Section IV.B.6.a, b, and c on nonendangered marine mammals. The rationale for conclusions on the bowhead whale was contained in the numerous references cited and discussed in the Beaufort Sea Sale 144 FEIS, which was incorporated by reference in the Sale 170 DEIS. The discussion on the bowhead whale in the Sale 170 FEIS has been expanded to include most of the discussion and references from the Sale 144 FEIS.

MMC-02
Effects on the food chain and prey of marine mammals from the assumed 7,000-bbl spill are expected to be short-term and local and not to significantly affect the overall availability of prey for marine mammals in the Sale 170 area (see Sec. IV.B.2). More information on the feeding habitats and food requirements of marine mammals is summarized and incorporated by reference from previous OCS lease-sale EIS's (Sales 87, 97, 124, and 144) in Section III.B of this EIS. As noted in Response MMC-01 with respect to the bowhead whale, the rationale for the statements and conclusions is contained in the numerous references cited and discussed in the Beaufort Sea Sale 144 FEIS, which was incorporated by reference in the Sale 170 DEIS. The discussion on the bowhead whale in the Sale 170 FEIS has been expanded to include most of the discussion and references from the Sale 144 FEIS. Information on the feeding areas and prey species of bowhead whales is summarized from the Sale 144 FEIS in Section III.B.

MMC-03
The commenter suggests that uncertainties about the natural history, demography, and habitats, etc., of the various species of marine mammals should be identified. Considerable information on these topics was presented in Section III.B of this EIS and in past Beaufort Sea lease sale EIS's as well as the scientific reports and synthesis reports referenced in this EIS. Although there is always a need for more scientific information, because scientific investigations bring up more questions than answers, much of the "uncertainty" about marine mammal natural history, demography, and habitats, etc., is representative of the high degree of natural variability in the environment rather than the uncertainties in the scientific information. The DEIS included mitigating measures in Section II.D, specifically Stipulations 4 and 5 and ITL's 4, 5, 7, and 10, which are expected to address uncertainties about the exposure of marine mammals to the potential effects of OCS activities through required monitoring programs that are reviewed by the MMS and the NMFS.

MMC-04
The estimated levels of mortality and recovery times are based on the assumptions about levels of industrial activity and numbers and sizes of oil spills assumed to occur under Alternative I described in Section IV.A in the DEIS. Also, estimated recovery times for bowhead whales take into account the current best estimate of the bowhead whale population and annual recruitment to the population, as discussed in Section III.B.

MMC-05
There is no evidence that synergistic effects have occurred as a result of past OCS oil-exploration activities in the Beaufort Sea on marine mammals as indicated by required monitoring studies conducted in association with exploration activities. Repeated exposure to sources of noise and disturbance (other than hunting) is expected to result in habituation to the source of disturbance, if it is not harmful to the marine mammal. Denning polar bears exposed to repeated disturbances were reported to tolerate exceptional levels of seismic activity and ice road traffic; near occupied dens (Amstrup 1993). Continuation of monitoring studies on bowhead whales and other marine mammal populations will help to identify the presence of potential future "additive/synergistic effects". The DEIS included estimates of Alternative I's contribution to the cumulative case (see Sec. IV.E.6.e and Conclusion).

MMC-06
A more complete assessment of the demography, habitat requirements, and status of marine mammals is described in the Sale 144 EIS and previous Beaufort Sea lease-sale EIS's that are summarized and incorporated by reference in Sections III.B.3 and III.B.5.

MMC-07
The MMS agrees with these comments. The MMS presently conducts postlease-monitoring studies either through site-specific studies required of industry or through the Alaska Region Bowhead Whale Aerial Survey Project. Enhanced stipulations increase the level of peer review on certain of our monitoring plans and monitoring reports. We are working to facilitate closer coordination between industry, the whalers, and involved State and Federal agencies to ensure that monitoring addresses all of the issues. Our monitoring studies typically include power analyses, e.g., in our ongoing cooperative ringed seal-monitoring study. For Sale 170, Stipulation 4 (Industry Site-Specific Bowhead Whale Monitoring Program) requires lessees to conduct a site-specific monitoring program on their activities in consultation with the NSB, the AEWC, and the State of Alaska.

MMC-08
Stipulations are assumed to be in place and are an inherent part of the overall analysis of the resources as they are affected by the various alternatives. During exploration and development (if any), these stipulations will be administered by MMS's Regional Supervisor for Field Operations (RSFO). The RSFO is responsible for implementing the stipulations and coordinating with those other governmental and private organizations that are identified in the stipulation as having a legitimate interest.

Regarding the proposed deferral of all blocks within 50 mi of Kaktovik, Alternative V (Area Offshore the ANWR) has been added to the FEIS. This alternative is divided into two subalternatives. Alternative V.a analyzes a potential deferral that encompasses blocks from the eastern boundary of the sale area to a point west of the Canning River. Alternative V.b incorporates three special mitigating measures (Stipulations. 7, 8, and 9) that are analyzed for effectiveness in lieu of deferring this area. In Alternative V.b, each resource category is analyzed with these special mitigating measure assumed to be inplace.

MMC-09
Referenced OCS Report MMS 86-0003, *Legal Mandates and Federal Regulatory Responsibilities* (Rathbun, 1986), provides a detailed description of the provisions of a variety of legislation affecting OCS oil and gas activities. This report is incorporated by reference in the FEIS. The report has been updated and is presently undergoing a detailed peer and editorial review for publication in 1998; however, it will not be available prior to issuance of the Sale 170 FEIS. Nevertheless, the FEIS describes relevant legislative and regulatory authorities (with citations), limitations, and effects of proposed oil and gas exploratory activities in Sections III and IV under the resource potentially affected, as well as mitigation to reduce potential impacts. For example, Section III.B.3 provides a detailed discussion of the ESA requirements, and Section IV.B.4 analyzes the potential effects on endangered and threatened species.

MMC-10
A footnote has been added to Table III.C.2-3 to address the referenced discrepancy. These data from Stoker (1983, as cited by ACI/Braund, 1984) are averaged over a period when data for particular species in a given harvest season were commonly unavailable, incomplete, or underestimated. Stoker noted that harvests may have been "somewhat" higher because of these factors. Other considerations are reporting, recording, and conversion errors that were not remedied until ADF&G subsistence surveys for the Community Profile Database established a standard. Another consideration is the per capita harvest in pounds for bowhead whales. In years when the bowhead whale hunt is unsuccessful, the total harvest in pounds is much less than in years when whales are harvested. The data for 1962 to 1982 average these good and bad years, setting up a very skewed comparison for the 1-year harvest data for 1992, when the bowhead harvest was three whales. As a final note, for the years 1962 to 1972, Kaktovik harvested only two whales.

Table III.C.2-3 has been changed to indicate the five polar bears harvested in the 1984-1985 and 1985-1986 seasons.

MMC-11
The effects of burning spilled oil are analyzed in Section IV.B.12 (Air Quality). "Conditional preapproval" is established to assist contingency planners with preparedness and preplanning activities in developing response scenarios.

MMC-12
The discussion of potential effects of spilled oil on species along the transportation routes was included in the Cook Inlet Sale 149 FEIS and summarized and incorporated by reference in the Sale 170 EIS. A more detailed discussion was provided for southern sea otters and marbled murrelets, because those species were considered to be most affected by an oil spill. See the Cook Inlet Sale 149 FEIS for a more detailed analysis of the effects of spilled oil on endangered whales. The Sale 170 FEIS has been expanded to include discussions and references from the Sale 144 FEIS. The revised text includes studies that reference effects of spilled oil on various whale species, including fin and humpback whales. Conclusions regarding endangered whales were drawn from references in the revised text.

MMC-13
The effects of potential tankering of Sale 170 oil are discussed in Section IV.E.6.c(2) (Arctic Oil Transportation through Prince William Sound and Gulf of Alaska). Although an oil spill could occur anywhere along the tanker routes in the Pacific Ocean and through the Panama Canal to Atlantic routes and potentially affect any biological population in the world, such an analysis would be endless. The EIS focuses on the cumulative effects on Beaufort Sea populations and endangered species in the region. For Steller sea lions, see the Cook Inlet Sale 149 FEIS. For endangered whales, see Response MMC-12.

MMC-14
The conclusions concerning the bowhead whale are contained in the numerous references cited and discussed in the Beaufort Sea Sale 144 FEIS, which was incorporated by reference in the Sale 170 DEIS. The Sale 170 FEIS has been expanded to include most of the discussion and references in the Sale 144 FEIS.

MMC-15
The rationale for the conclusion was based on the current population, estimated recruitment rates, expected industrial activity, assumed numbers and sizes of oil spills based on the Oil-Spill-Risk Assessment (OSRA), and expected effects of spilled oil on bowhead whales, etc., and pertains to recovery of the population to prespill levels. The rationale for the conclusions on the bowhead whale also is contained in the numerous references cited and discussed in the Beaufort Sea Sale 144 FEIS, which was incorporated by reference in the Sale 170 DEIS. The discussion on the bowhead whale has been expanded in the Sale 170 FEIS to include most of the discussion and the references in the Sale 144 FEIS.

MMC-16
The MMS wildlife biologists continue to consult with the NMFS, USEPA, FWS, and ADF&G on the best available information concerning the effects of the *Exxon Valdez* oil spill (EVOS) on cetaceans and other marine mammals. The results of studies on the effects of the EVOS on marine mammals, as summarized in Loughlin (1994: "Marine Mammals and the *Exxon Valdez*"), generally suggest that oil spills have acute and lethal effects on sea otters, sublethal to lethal effects on heavily oiled seals, and possible lethal effects on cetaceans that might have prolonged and acute contact with a large, highly toxic oil spill. The overall findings of these studies support the analyses on marine mammals in Sections IV.B.4 and IV.B.6 of the EIS. The conclusion on the effects of the EVOS on killer whales by Dahlheim and Matkin (1994, as cited in Loughlin, 1994) states that the disappearance of 14 killer whales was correlated spatially and temporally with the EVOS; but there was no clear cause-and-effect relationship; and some of these missing whales may have died from natural causes or a combination of interactions with fisheries or the EVOS. Even if it is assumed that all 14 whales were killed by the spill (a much larger spill than assumed in the Sale 170 EIS analysis), this loss is comparable to the estimated loss of belukha whales in the Section IV.B.6 conclusion. The estimated losses of harbor seals to the EVOS (302 animals) reported by Frost et al. (1994, as cited in Loughlin, 1994) were comparable to the estimated losses of seals in Section IV.B.6 of the Sale 170 EIS, even though the Sale 170 analysis assumed much smaller spills over the life of Alternative I.

There was no evidence given in Loughlin (1994) of any food-chain effects on marine mammals evident from the EVOS. Even studies on the effects of the EVOS on sea otters—the marine mammal species most impacted by the spill—showed no clear evidence of food-chain effect. The study on sea otter foraging behavior and hydrocarbon levels in prey showed no significant differences in hydrocarbon content in bivalve prey of sea otters between oiled and unoiled habitats (Doroff and Bodkin 1994, as cited in Loughlin, 1994). Dahlheim and Loughlin (1990); Ziegesar, Miller, and Dahlheim (1994); and Loughlin (1994) also investigated the potential effects of the EVOS on humpback and gray whales. Dahlheim and Loughlin (1990) stated that no effects on the humpback whale population were documented. Ziegesar, Miller, and Dahlheim (1994) observed temporary displacement of humpback whales from some areas of Prince William Sound but found no indication of a change in abundance, calving rates, seasonal residency of female/calf pairs, or mortality. They noted that it was difficult to determine whether the EVOS had any measurable impact on the number of humpback whales occurring in Prince William Sound. They also noted that long-term physiological impacts on whales would not have been detected during this study. Loughlin (1994) determined that the cause of death on three gray whales, one minke whale, and three harbor porpoises could not be directly linked to the EVOS. The large number of gray whales was attributed to the timing of the search effort coinciding with the northern migration, augmented by increased survey effort in the study area associated with the oil spill. The results of these three studies are included in the revised text of the Sale 170 FEIS.

MMC-17
Section IV.B.6 of the EIS discusses the significant types of effects and effect factors that may be associated with Alternative I with regard to pinnipeds, polar bears, and belukha whales. Platform removal, discarded trash, and debris from service vessels and platforms are expected to have negligible effects on marine mammals. The dumping of trash from service vessels and platforms is prohibited under OCS operating orders and USEPA regulations.

MMC-18
With regard to other types of oil-spill effects that the commenter suggests as examples from the EVOS:
1. "Oil spills cause nutritional deficiencies or starvation": This concern is discussed in the Sale 144 FEIS and is incorporated by reference under Effects of Oil in Section IV.B.6 of the Sale 170 EIS.
2. "Cause stress, making animals more vulnerable to disease," etc.: This concern is addressed under Direct Effects of Oil in Section IV.B.5 of the Sale 144 FEIS.
3. "Cause animals to abandon or avoid feeding areas": This concern is discussed under Oil-Spill Avoidance in Section IV.B.5. of the Sale 144 FEIS.
4. "Cause animals to be attracted to prey debilitated by the oil": This concern is discussed under Oil-Spill Avoidance in Section IV.B.5 of the Sale 144 FEIS and incorporated by reference under Effects of Oil in Section IV.B.6 of this EIS.

MMC-19
The text of the FEIS has been revised in response to this comment.

MMC-20
The cumulative analysis focuses on the known effects of cumulative oil and gas exploration and development, namely direct effects of oil spills, noise and disturbance, and, to a lesser extent, habitat alteration and the known effects of other activities such as commercial fishing and harvest. Other types of oil-industry-related effects, such as effects on the food chain, that possibly could be proven to affect marine

mammals have not been demonstrated in the case of the EVOS (with the possible exception of sea otters) or other studied oil-spill events. Repeated exposure to sources of noise and disturbance (other than hunting) is expected to result in habituation to the source of disturbance if it is not harmful to the marine mammal. Denning polar bears exposed to repeated disturbances were reported to tolerate exceptional levels of seismic activity and ice road traffic; near occupied dens (Amstrup 1993). Regarding exposure to multiple oil-spill-disturbance events, these events are likely to be very infrequent over the 20 to 40 or more years of cumulative oil development in the Arctic. It is unlikely that the same individual marine mammals exposed to disturbances from one event would be exposed to disturbances from the next spill event. Potential direct effects of the spill are likely to be more of a concern. Although there are many uncertainties about the cumulative effects, the analysis focuses on known or anticipated effects in order to come to a conclusion rather than give the reader a list of all possible or conceivable effects.

MMC-21
See Response MMC-20.

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REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Mr. John Goll
Regional Director
U.S. Department of the Interior
Minerals Management Service
Alaska OCS Region
949 E. 36th Ave.
Anchorage, AK 99508-4302

RE: Comments on Draft EIS for Beaufort Sea Sale 170

Dear Mr. Goll:

I wish to voice my opposition to Beaufort Sea Sale 170 and urge the Minerals Management Service to permanently delete all of the Federal offshore waters located off the coast of the Arctic National Wildlife Refuge from any future lease sales.

Both professionally and personally, I am familiar with this area from having conducted biological surveys as a former biologist of the U.S. Fish & Wildlife Service. I have flown the Arctic Refuge coastline repeatedly for aerial waterfowl surveys of the lagoons and offshore coastal waters, traveled by boat for oldsquaw feeding studies, counted common eider and black guillemot nests on barrier islands, traversed lagoons and the coast by snowmachine in spring, and conducted a variety of bird habitat and environmental contaminant studies on the refuge. As well, I have boated the area from Prudhoe Bay to the refuge for marine sampling, including studies in the mid-Beaufort of the persistence of drilling muds from exploratory wells in sediments in the shallow coastal zone. I am quite familiar with Prudhoe Bay from conducting monitoring studies, contaminant sampling, and wetland permitting reviews in the oil fields over the course of many years.

Today, it is hard to keep up with all of the oil development activity proposed for the Beaufort Sea and the North Slope generally. It is a burst of expansion, but unlike earlier exploration boom in the early 1980's in the Arctic OCS, this time it is unprecedented development for production of oil. There are so many new projects for which critical new information regarding environmental risk and impacts is being generated -- but we will not have the advantage of knowing more about what's in store as old OCS leases are developed prior to another 1.7 million acres of the OCS being auctioned off.

There's British Petroleum's Northstar EIS process underway (but little information is out for review yet to the public concerning the untested subsea pipeline technology) and the Liberty oil field proposal to the west, and myriad onshore projects (Alpine, Badami, Schrader Bluff, West Sak) which all contribute to the piecemeal spread of the oil fields. They also may affect the economic likelihood of other development projects for already known oil fields (Kuvlum, Hammerhead, Sandpiper, etc.). Offshore, the public struggles to keep abreast of each permit for projects like the controversial Warthog well and the Camden Bay Unit. Then to the west, there's the planning process for the National Petroleum Reserve-Alaska which could also result in increased impacts from OCS activity if coastal areas are leased. MMS should cancel this lease sale because the public needs the chance to review the environmental information for all the already on-going development projects which have dramatically new features like the subsea

MILLER #1

pipelines and placement of permanent industrial zones, like Northstar, in prime subsistence areas. Also, this new information about offshore development projects needs to included in this Lease Sale EIS.

MILLER #1 cont, Miller #2

I am gravely concerned about the potential effects of Sale 170 and more offshore oil exploration and development on the Arctic National Wildlife Refuge. The wildlife and wilderness of this protected area will be degraded and threatened from the oil and gas exploration and development activities located in Federal OCS and state leases -- spills, noise, drill rigs, seismic vessels, helicopter flights. The refuge is also threatened because there would be pressure to open it to pipelines, roads, support facilities in the future. This is because building a subsea pipeline, whether 5-miles, or the 60-70 miles from the east end of the Sale 170 area to the state lands west of the refuge, is currently technically infeasible. Such an oil transportation method is also economically infeasible.

Miller #3

If a subsea pipeline is not built, then oil tankers will be needed in the ice-infested waters because the refuge lands are closed to building pipelines (and they should remain that way because roads, pipelines, pump stations, airports, staging areas, and industrial facilities are incompatible with the purposes of the Arctic Refuge -- to protect wilderness and wildlife, to maintain wildlife habitats and populations in their natural diversity, to uphold international treaty obligations, to protect fresh water quality and quantity, and to protect subsistence). The DEIS fails to adequately address the infeasibility of the subsea pipeline, the risks of tankers, and the pressure there would ultimately be to go onto the refuge lands and the worst-case consequences of this cumulative effect on the refuge. This must be corrected. Of course a simpler approach would be to cancel the sale and remove all OCS waters off the coast of the refuge from future leasing.

Miller #4

Even now, with just an exploratory well such as Warthog, ARCO sought in the past to use lands within the Arctic Refuge for staging or storage sites. And ARCO's Exploratory Plan for Warthog No.1 well says that in the event of a blowout, if a gravel island were built for drilling a relief well, that "federal permits required would be... a USAF permit for use of the Collinson Point DEW line site for equipment/ material staging. Both of these permits can be obtained within 2 weeks" (p.23). It just so happens that the U.S. Fish & Wildlife Service now owns this land at Collinson Point, and it is within the Arctic National Wildlife Refuge.

Miller #5

The Interior Department has been doing a wonderful job defending the Arctic Refuge from the outright threats by Congress to opening it to drilling, leasing, and development. However, the long term integrity of the entire refuge ecosystem will not be maintained with oil leasing and development off its coast. At this time, the Interior Department should view the risks of Lease Sale 170 in light of the bigger picture of how it can best protect the Arctic Refuge in the long-run. The MMS should not be able to ignore the cumulative implications of its OCS leasing programs on the refuge and dodge this issues by just stating that the refuge is closed to oil leasing and development. MMS erred in not considering the effects on the Arctic Refuge a significant issue raised during scoping. There would major effects from offshore exploration and development, even if there is no construction of infrastructure on land, as I have described. The Interior Department must take this opportunity to take the common sense step of not having any more OCS lease sales off the Arctic Refuge coast.

Miller #6

There should never be any pipelines or roads for offshore oil across the Arctic Refuge lands where they meet the sea -- where the Porcupine herd seeks relief from insects on grounded ice and waters of Camden Bay; the lakes where tundra swans nest; the salt marshes where brant feed in fall migration; the diverse ponds, lakes and, deltas rich with sandpipers, ducks and loons;

the river snow banks where polar bear mothers dig their dens, the bluffs and sandspits used for thousands of years by Native Alaskan hunters.

Since leaving the Service, I have visited the coast of the Arctic Refuge many times on my own and to share with groups of others the unique freedom of this wild land. Phalaropes darting along the water's edge, oldsquaw rafted in a sheltered spot in a lagoon, the fall sunset with icebergs, the quiet that almost rings in your ears, the cries and fanned tail of a ruddy turnstone leading one away from its nest, a seal popping its head up out of a freshwater lake, the cackling of loons, the unbroken landscape from sandspit to lagoon, shoreline to tundra, and south to the highest peaks in the Brooks Range. The coastal plain is a special place because of the diversity of habitats held in the narrow coastal plain band between mountains and coast. Here, the wildlife moves freely, as it has always.

All of this would change with oil development offshore.

Even an exploratory well, like ARCO's proposed Warthog, would be heard from the shore of Camden Bay -- at a place where I have watched birds migrate past the coast-- its diesel fuel will be smelled at the beach when the wind shifts that way, the stray trash will wash up on the beach, the chronic spills from the supply barges will float to the shoreline, deep grinding noise will be heard inland far from the water's edge, there will be the flop, flop, flop of the helicopters and lots more airplanes. There will be all these changes, some small, others may be catastrophic like a crude oil blowout. For the Warthog well, if there was a blowout, ARCO says the crude oil could be flowing for 71-98 days if an ice island was used, or 112 days if a gravel island were built.

Development would be devastating. Even without onshore pipelines within the refuge, a major concentration of processing plants, pumping stations, airport, staging areas, housing, and gravel mines at the "Flaxman Island/ Pt. Thomson" landfall would have major effects on the wilderness solitude and the wildlife habitats of the refuge. Already, the oil companies talk of linking up Badami, then Liberty, perhaps Pt. Thomson or Sourdough next. Then there might be enough infrastructure in place that they might reap profits from bringing Kuvlum or Hammerhead, or perhaps other fields on line that are as yet unknown. There would not be an isolated OCS development off the Arctic Refuge coast, it would be part of the oil complex that lurches west with networks of roads and pipelines, ports at docks or causeways, airports, gravel mines. MMS's DEIS ignores these cumulative features that will be integrally related to their lease sales MILLER #7

My presence at your Anchorage public hearing was not acknowledged in the DEIS, nor were the concerns I raised at that time adequately reflected in the document. I agreed with the comments made at the Kaktovik hearing that the "Kaktovik deletion" alternative should go all the way to the Staines River/ Canning River Delta and that this was necessary in order to protect the Arctic Wildlife Refuge from the future effects of onshore pipelines, roads, and other support infrastructure. MILLER #8

I will reiterate some of the concerns I raised at that meeting: about the effects of exploratory drilling and development off the Arctic Refuge coast on polar bears from oiling and disturbance, as polar bears use the coastal ice as a migratory route to get to denning sites on land (the refuge is the most important onshore denning area for polar bears in the U.S.), MILLER #9

risks to Steller's and spectacled eiders, MILLER #10

and that the seasonal drilling restriction for bowhead whale protection should be reinstated. MILLER #11

I raised scientific concerns about the effects past drilling and seismic activity has had on bowhead whales derived from my review of past monitoring reports and scientific reviews critical of them. MILLER #12

In conclusion, exploration and development of OCS leases in the proposed Sale 170 area would

irreversibly degrade the wilderness qualities of the refuge and jeopardize the important habitats that Congress sought to protect with the creation of the Arctic National Wildlife Refuge in the Alaska National Interest Lands Conservation Act of 1980 (ANILCA). MILLER #13

This lease sale will also irretrievably harm the vulnerable marine ecosystem of the Beaufort Sea. MILLER #14

Furthermore, it will contribute to the production of carbon dioxide from burning of any oil produced which will increase the risks from global climate change which are already been seen in the Arctic. MILLER #15

I urge you to cancel this lease sale and give the public more time to deal with the on-going oil company proposals resulting from past OCS sales.

I appreciate this opportunity to comment.

Sincerely,

Pamela A. Miller

MILLER-01
The purpose of the OCS Oil and Gas Leasing Program has always been to provide an energy source for the Nation. It never was an academic exercise; development for production of oil, in an environmentally acceptable fashion, has been the goal from the start. Unfortunately, high development costs and a steep decrease in the price of oil reduced the Arctic's attractiveness as an exploration area in the late 1980's. The current approach toward development focuses on more efficient development of smaller resource accumulations close to existing infrastructure. Northstar and Liberty are two projects that appear to be economically viable, but they were both discovered in the early 1980's.

The OCS Oil and Gas Leasing Program, 1997-2002, identifies proposed Beaufort Sea Sale 170, scheduled for 1998, as a small, focused sale of nearshore blocks in the center of the planning area, as opposed to the proposed Beaufort Sea Sale 176 planning-areawide sale in 2000. Proposed Sale 170 closely follows Beaufort Sea Sale 144, held in late 1996, and is viewed as an opportunity for industry to focus leasing on a limited number of additional blocks to fill in existing leased areas as new information becomes available from exploration wells or new seismic data. A large industry response is not anticipated for this sale.

More opportunity for involvement exists than ever before—from development of the 5-Year OCS Oil and Gas Leasing Program, through individual lease sales, and finally to specific development projects. Alaskan stakeholders developed the guidelines used to define the areas offered in the current 5-year leasing program. Public participation in the Sale 144 process led to acceptance of the Barter Island deferral and a reduced offering of acreage for lease. In addition to established means of public involvement (public meetings, comments on sale documents, etc.), a special OCS Advisory Committee comprised of stakeholder representatives was formed to offer advice to the Secretary on Sale 170 issues. Leasing alternatives have been identified by this committee for further analysis in the Sale 170 FEIS. Where planning is concerned, subsea pipelines and other infrastructure have been analyzed in EIS's for 20 years; these are not new concepts. The MMS recognizes the need to review and evaluate environmental data being developed for ongoing development projects. The environmental effects of these projects will be evaluated through the guidelines established in the National Environmental Policy Act (NEPA), and mitigation to minimize any cumulative effects of the project will be developed through consultation with Federal, State and local agencies and the public.

Sale 170 offers no lands in the ANWR, which still remains off limits to development. Waters immediately off the ANWR belong to the State of Alaska, which manages leasing and development of those areas.

Existing discoveries in the area, although classified as giant accumulations, have not been sufficient to justify a large-scale pipeline-transportation project. However, it is conceivable that discovery of additional accumulations along a conceptual pipeline corridor could evolve into an economically viable project. The concept is technically feasible, and designs to address known engineering challenges have been considered for years. Execution requires a sufficient resource to justify the expense, just as the Prudhoe Bay field provided the incentive to construct another engineering landmark—the TAPS.

MILLER-02
The Northstar Project lies directly at the mouth of the Kuparuk River in an area repeatedly offered for both Federal and State lease sales. Although potentially a subsistence-harvest area for the bowhead whale, locations other than Northstar—namely Cross Island and the Colville River Delta—have generated far more interest in the preservation of subsistence resources. Currently, a Draft developmental EIS is being completed on the Northstar Project. This document will be released to the public for a thorough review. New offshore development projects are evaluated as part of our cumulative-effects analysis (Sec. IV.G).

MILLER-03
The effects on biological and sociocultural resources found in the ANWR are considered in the EIS. Also, resources (e.g., caribou) are considered for the entire North Slope area, of which the ANWR is a part. This provides the appropriate overall picture for prelease analysis. In addition, a specific alternative (Alternative V, Area Offshore the ANWR) has been added to focus on ANWR concerns. Please also see Response MILLER-04.

MILLER-04
The subsea-pipeline concept is technically feasible; designs to address known engineering challenges have been considered for years. Execution requires a sufficient resource to justify the expense, just as the Prudhoe Bay field provided the incentive to construct another engineering landmark—the TAPS. In terms of risk, the more significant variable would be the burial depth for the pipeline, rather than its length. The appropriate depth would be based on gouge-depth data, with an additional factor to account for a rare event. Normal protections (such as internal and external corrosion protection, internal inspections, computerized pipeline monitoring, etc.) would be in place. (See also Responses TFA-11 and TFA-55 and Appendix C of this FEIS.)

The MMS believes that the tankering of crude oil from an eastern Beaufort Sea production site would be far less preferable than the construction of subsea pipelines. Stipulation 3 limits the use of tankers in the Arctic.

There has been much "pressure" over the years to allow the oil and gas industry to enter the ANWR and construct infrastructure; however, whether the ANWR is entered is beyond the purview of the MMS and is a matter for Congress. (see Response MILLER-05.)

Alternative V.a, which analyzes a potential deferral of submerged lands offshore the ANWR, has been developed for analysis in the FEIS. This alternative would defer all blocks from the eastern boundary of the lease-sale area to a point west of the distributaries of the Canning River. Additionally, within Alternative V.b, three special mitigating measures (Stipulations 7, 8, and 9) that provide additional protection for the coastline of the ANWR have been developed and are analyzed for this Alternative in lieu of area deferral.

MILLER-05
The MMS agrees with the statement that the Collinson Point DEW-Line site is under the control of the FWS. The MMS required that ARCO Alaska, Inc. (AAI) remove all references to using the ANWR from the Exploration Plan and notified AAI that access to the ANWR was under the control of the FWS.

MILLER-06
The MMS has not ignored the cumulative effects of oil and gas leasing. Section IV.G of the EIS discusses the cumulative case, which includes the ANWR area. Within the cumulative case, MMS included a specific analysis of the cumulative effects of North Slope oil and gas development on the ANWR. To protect the ANWR coastline, the MMS has developed Alternative V (Area Offshore the ANWR) and three special mitigating measures (Stipulations 7, 8, and 9) that are analyzed in the context of Alternative V. If adopted, these stipulations may provide additional protection to the ANWR coastline.

MILLER-07
The cumulative effects of foreseeable oil development activities on the North Slope that may affect the ANWR and its coastline are evaluated in Section IV.G. Also, to provide the potential for additional protection for the ANWR coastline, the MMS developed Alternative V (Area Offshore the ANWR) and three special mitigating measures (Stipulations 7, 8, and 9) that are analyzed in the context of Alternative V. If adopted, these stipulations may provide additional protection to the ANWR Regarding the present situation, nly the FWS and the community of Kaktovik have the ability to permit any activity within the ANWR. The FWS has taken control of the former DEW-Line station at Collinson Point (see Response MILLER-05), and the City of Kaktovik recently has permitted drilling on its corporate lands. However, the creation of the level of infrastructure envisioned by the commenter can be allowed only if Congress amends the Alaska National Interest Lands Conservation Act (ANILCA) and allows oil and gas development within the ANWR. This event is unlikely in the foreseeable future.

MILLER-08
Sections I.C.2.b(2) and (3) of the EIS discuss the City of Kaktovik's request for deletion of all blocks within a 50-mi radius of Barter Island and an alternative to delete all blocks within the area eastward of the Canning River. Although not attributed by name, the comment: ". . .by an individual at the Anchorage scoping meeting concerned with leasing off the Arctic National Wildlife Refuge. . ." was referenced in the DEIS along with the rationale for why these options were not selected as alternatives considered. Alternative V of the FEIS analyzes the potential effects of leasing offshore the ANWR. The MMS apologizes for the oversight in not listing the commenter's name in Section VI.C (List of Contacts for Review of the EIS); the commenter's name has been added to the list of individuals who commented on the DEIS.

MILLER-09
See Responses TFA-32, TFA-33, and FWS-17.

MILLER-10
The DEIS recognized that, in spite of mitigating measures, some spectacled and Steller's eiders could be disturbed. However, the numbers of the spectacled eider are very low east of the Canning River and the Steller's eider is rare east of the Colville River; thus, it is unlikely that many would be exposed to the small amount of proposed industrial development. Considering the level of activity associated with Alternative I offshore the ANWR (no more than 3-5 production platforms for the entire lease-sale area), few eiders are expected to be disturbed and/or displaced by Alternative I; and the number of eiders killed due to industrial activities (other than an oil spill) is expected to be insignificant at the population level.

MILLER-11
After reviewing the results from various studies conducted on bowhead whales, the National Marine Fisheries Service (NMFS) concluded in their Biological Opinion for Beaufort Sea Sale 97 that bowhead whale populations were not likely to be jeopardized by oil-exploration activities. The MMS reinitiated consultation with the NMFS regarding earlier biological opinions for the Beaufort and Chukchi Seas and, in November 1988, the NMFS issued the Arctic Regional Biological Opinion (ARBO), which covered all previous lease sales in the Arctic Region. As a result of the ARBO, the seasonal drilling restriction was dropped from mitigating measures and replaced with Stipulation 4 (Site-Specific Bowhead Whale-Monitoring Program) and Stipulation 5 (Conflict Avoidance Mechanisms to Protect Subsistence Activities) to try to prevent unreasonable conflicts. The NMFS has similar requirements under their Incidental Harassment Authorization permits.

MILLER-12
Most scientific studies indicate that whales are not adversely affected by seismic and drilling activities. In some instances whales have been observed to react at substantial distances, but the reaction is one of a temporary change in behavior, such as a change in call rate or dive cycle, etc. The NMFS also has reviewed all of the scientific studies and concluded that bowhead whale populations are not likely to be jeopardized by oil-exploration activities. See Response MILLER-11.

MILLER-13
See Responses MILLER-04, -06, and -07.

MILLER-14
See Responses MILLER-04, -06 and -07.

MILLER-15
See Response TFA-64.

July 18, 1997

Mr. John Goll, Regional Director
US Minerals Management Service
Alaska OCS Region
949 E 36th Street
Anchorage, AK 99508-4302

Mr. Goll:

I understand that you are taking public comment concerning Beaufort Sea Sale 170, a proposed 1.7 million acre federal oil lease sale which includes areas offshore the Colville River delta and the Arctic National Wildlife Refuge. I oppose this action because, among other reasons, the oil corporations have not demonstrated that they can be relied upon to operate in an environmentally safe and responsible manner.

The environmental threats posed by this type of sale to humans, marine life, and wildlife, are many and well documented. I have read your oil spill analysis and, while it appears to be fundamentally sound from the point of view of mathematics and probability it fails to address a real effect that adds significantly to the probability of environmental danger. It is also greatly oversimplified and relies on spill data compiled from drilling operations which operate under vastly different conditions. On the other hand, the main concern is not one of technological capability (although it is hard to understand how you address the effect of under-ice oil spills when this has not been studied). It is the historical fact that oil companies have failed to operate in an environmentally safe and responsible manner. NAGHSKI #1 NAGHSKI #2

Check the reports by the Alaska Forum for Environmental Responsibility http://www.accessone.com/~afersea/. They have collected publicly accessible information, although much of it is not generally reported to the public, about the operation and oil contamination of the Alaskan Pipeline. This danger stems from the fact that the pipeline has NEVER operated at the safety levels originally specified and promised by the pipeline consortium.

With the Valdez oil spill, Exxon provided compelling proof that, at the present time, these companies cannot be relied upon to responsibly manage their actions.

- Exxon assured the public a tanker spill would never happen - It did!
- Exxon assured the public they would be prepared in the event of a spill - They weren't!
- Exxon assured the public they would clean up any oil spill that occurred - Instead they tied up the courts, denied responsibility and forced taxpayer money to be used to clean up their mess!

Until these companies can prove that they can properly manage their existing oil claims, we should not expose any more of our publicly owned, national areas to environmental destruction at their hands.

In conclusion I strongly oppose federal Lease Sale 170 (and any other attempt to lease the coastal waters adjacent to the Arctic National Wildlife Refuge). I favor EIS Alternative 2: NO LEASING.

Thank you
David Naghski
3295 Morrison Ave
Apt #4
Cincinnati, OH 45220
naghskdh@email.uc.edu

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JUL 13 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

1

NAGHSKI-01
Most oil spills are caused by human error rather than environmental factors (Gulf Canada Resources, Inc., 1982). However, a study conducted for the MMS by the Futures Group and World Information System (1982) was unsuccessful in deriving any valid statistical relationships for predicting the occurrence of ≥1,000-bbl spills from a specific cause, including environment. The MMS tanker-spill rates are derived from a worldwide database (polar and temperate) and show a similarity to TAPS tanker-spill rates as well as Cook Inlet spill rates. Although MMS spill rates from platforms and pipelines are derived from OCS regions in temperate climates, they too show a similarity to Cook Inlet spill rates. Because no production has occurred in the Beaufort Sea, no comparisons of temperate versus polar-offshore-spill rates can be made. Onshore spill rates of spills <1,000 bbl for Prudhoe Bay and Kuparuk are similar to offshore spill rates <1,000 bbl in the Gulf of Mexico (USDOI, BLM and MMS, 1997). In addition, MMS spill rates are based on billion barrels of oil produced and transported. The exposure variable can be applied to all areas with the same meaning.

NAGHSKI-02
The historical record in the Arctic has shown that industry operates in an environmentally safe and responsible manner. Given the more fragile ecosystem, the Arctic has always been held to a higher development standard. Twenty-seven exploration wells have been drilled by industry in the Federal Beaufort Sea over a 16-year period without accident or environmental harm. These activities have been conducted in accordance with the MMS's stringent regulatory requirements to prevent potential oil spills and in accordance with specific lease terms and other MMS, State, and other Federal-Agency regulatory requirements developed to protect the environment. No major environmental impacts have resulted from these activities. The MMS will maintain a stringent inspection and oversight program to ensure that activities are conducted in accordance with applicable requirements. The MMS also has enforcement authority in the event of noncompliance, including shutin of the facility and civil- and criminal-penalty authority.

The primary "black eye" for oil and gas development in Alaska has resulted from the EVOS, which occurred in State waters. As a result, the Alaska legislature developed new standards for oil-spill-contingency plans and developed specific compliance measures to prevent spills. Furthermore, a national response resulted in the Oil Pollution Act of 1990 (OPA 90). This Act established national cleanup and prevention measures and mandated conversion to double-hull tankers to reduce spill volumes in the event of a future accident similar to the EVOS. Use of tankers to transport oil is not planned for the Beaufort Sea.

(115)

UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

July 16, 1997

RECEIVED
JUL 2.. 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Regional Director
Minerals Management Service (MMS)
Alaska Region
949 East 36th Avenue
Anchorage, Alaska 99508-4302

Dear Sir:

Enclosed are additional comments from the National Oceanic and Atmospheric Administration (NOAA) on the Draft Environmental Impact Statement (DEIS) for the Proposed Annual 1997 Outer Continental Shelf Oil and Gas Lease Sale 170 in the Beaufort Sea. We hope our comments will assist you. Thank you for giving us an opportunity to review the document.

Sincerely,

Susan B. Fruchter

Susan B. Fruchter
Acting NEPA Coordinator

Enclosure

cc: Director, Minerals Management Service
Department of the Interior
Room 4230
1849 C Street, NW
Washington, DC 20240

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THE ADMINISTRATOR

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

July 9, 1997

MEMORANDUM FOR: Susan B. Fruchter
Acting NEPA Coordinator

FROM: Steven Pennoyer
Administrator, Alaska Region

SUBJECT: DEIS for Lease Sale 170 (Beaufort Sea) Comments

The Alaska Region has reviewed the subject Draft Environmental Impact Statement (DEIS) for Lease Sale 170, currently scheduled for 1998 There have been six previous oil and gas lease sales in this area. Past sales have resulted in the drilling of 28 exploration wells. No individual sites have been determined to be economically feasible at this time. The Minerals Management Service's (MMS) proposed action (also described here as Alternative I) consists of approximately 1.7 million acres within the Beaufort Sea planning area of Alaska. Water depths in the sale area range up to 120 feet. Resource estimates indicate the range of potential oil here to be between 350 and 670 million barrels based on an anticipated life of over 21 years. The DEIS projects 12 to 16 explorations and delineation wells would be drilled for this lease sale, with no more than 2 drilling rigs operating in any one year. Three to five production platforms are projected between 2004 and 2009, from which a total of approximately 87 to 111 wells would be drilled.

The DEIS offers two additional alternatives under Sale 170: Alternative II, the no action alternative and Alternative III, the Kaktovik deferral. We are recommending the adoption of Alternative III, the Kaktovik deferral. This alternative presents small, but potentially valuable, improvements from the proposed action. Alternative III would remove an area of 416,564 acres on the easternmost part of the sale area. Resource estimates for Alternative II would be 13 to 18 percent less than for Alternative I. Alternative III would reduce the estimated number of small oil spills by 11 to 18 percent, while also

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decreasing the probability of a spill greater than 1,000 barrels. The deferral area is used by bowhead whales for migration and possibly feeding, and is within the traditional hunting areas of the village of Kaktovik. The MMS projects that this alternative would reduce potential effects to subsistence harvest patterns when compared to the proposed plan. While exploratory activities adjacent to the deferral area would continue and may present many of the same impacts expected in the proposed plan, the Kaktovik deferral offers meaningful benefit to the protection of fish and wildlife and to locally important sociocultural values (subsistence). We believe support for this alternative is justified.

We remain concerned over the individual and cumulative effects of oil and gas activity on the Western Arctic population of bowhead whales. The MMS has responded to these concerns in its environmental studies program, researching many issues and providing decision makers with important data. The NMFS, through the Marine Mammal Protection Act, has required comprehensive monitoring of oil and gas activities which result in the incidental take by harassment of bowhead whales and other marine mammals. The issue of industrial noise and its impact on marine mammals, especially bowhead whales, remains a subject of debate and concern. Traditional Native experience has found bowheads whales react strongly to such noise, avoiding seismic sources at distances of 35 miles. However, research into this matter has provided data which do not suggest avoidance reactions are strong enough to yield population-level impacts to bowheads. Despite problematical limitations in these studies and their relatively brief duration, we feel they support a decision to allow oil and gas operations supported by a comprehensive monitoring effort. Both MMS and NMFS (through the small take authorization program) have interests here and we are hopeful future monitoring will extend the information gathered through past research.

Specific Comments

Page I-1. A. Purpose, Need, and Description.
There have been six previous oil and gas lease sales in the Beaufort Sea since 1979. The Environmental Impact Statement should present maps depicting these sale areas and all tracts which have been leased. Tracts which have been drilled upon should be indicated.

NOAA #1

Page I-7. (5) Deferral of Bowhead Whale Feeding Areas.
We recommend more discussion be included within this paragraph. It would be helpful to describe and identify these feeding areas, as well as the effect not leasing the areas would be expected to have on bowhead whales.

NOAA #2

Page II-4. Stipulation No. 3. Transportation of Hydrocarbon. We believe proposed Stipulation Number 3, Transportation of Hydrocarbons, should be modified to reflect the MMS's position regarding causeways. This would clarify that no new causeways would be constructed. Extensive causeways have many undesirable impacts on nearshore processes and resources and should be prohibited outright. The DEIS does not adequately assess the potential impacts of additional causeways. Therefore, we would consider the DEIS deficient if the proposed activities include additional causeways.

NOAA #3

Page II-4. Stipulation No. 4.
This Stipulation should clarify that it applies to all drilling and seismic operations, not just those conducted under exploration, during the bowhead whale migration. The range of avoidance behavior should be revised to indicate subsistence hunters' observations of effect out to 35 miles.

NOAA #4

Page II-7. Information to Lessees (ITL) No. 5.
Please delete the words "that specific regulations must be applied for and in place and" in the first sentence of the fifth paragraph. Only authorizations under a Letter of Authorization must apply for specific regulations.

NOAA #5

Page II-10. ITL No. 15.
What is the status of the new superseding regulations concerning financial responsibility? Are the stated "interim guidelines" enforceable? This guidance appears under the MMS's ITL No. 93-1N. How many ITL's exist, and where are they stated? The Oil Pollution Act of 1990 established limits for offshore facilities at removal costs plus $75,000,000, and for onshore facilities at $350,000,000. Where do the figures used here come from?

NOAA #6

Page II-11. ITL No. 18.
What are the standards for pipeline construction which this ITL refers to? Are they specific to arctic construction?

NOAA #7

Page II-12. 1. Effects on Water Quality.
The first sentence should be clarified. Would EPA-permitted discharges actually be set at concentrations which exceed sub-lethal levels? What size mixing zones would be established? What organisms are considered in describing these levels?

NOAA #8

Page II-13. 4. Bowhead Whale.
Section IV B devotes considerable space to traditional knowledge of the whalers; therefore, it would be appropriate in this summary to indicate subsistence hunters believe avoidance behavior may far exceed 7.5 km.

NOAA #9

Page IV-A-4. (A) Seismic Activity.
It would be helpful to estimate the duration of activity required for the suggested trackline distances. Would this work be expected over several consecutive years?

NOAA #10

Page IV-A-15. (2) Broken and Moving Pack Ice.
The potential for an oil spill, and the limitations of response technology, within broken ice conditions is one of the more disturbing and contentious aspects of development in the Alaskan Beaufort. This paragraph states that current technology is limited to a few situations, and that any mechanical recovery soon becomes ineffective. Although it says recovery can be effective within leads, it requires deployment (of skimmers?) from ice-strengthened vessels. Will spill recovery and containment plans be required to have ice-capable response vessels on site?

NOAA #11

Page IV-B-15. (B) Site-Specific Effects. Para. 2.
RE: Thorsteinson (1996); should 600 m^2 be 600 mi^2?

NOAA #12

Page IV-B-18. A. Effects on the Bowhead Whale.
We believe this section presents a very good discussion of the potential effects to bowhead whales. The incorporation of traditional knowledge is effective in highlighting the outstanding differences in observations and conclusions between past research and subsistence users. In section (a), Effects from Seismic Activities, fifth paragraph, the conclusion that aerial surveys do not support an offshore displacement of the migration should be qualified in that the period of observation was relatively brief (6 years), and only some of these years coincide with oil activity. Were the number of observations (60) sufficient for such conclusions?

NOAA #13

Page IV-B-24. 3)Effectiveness of Mitigating Measures.
We feel the conclusion presented at the end of the second paragraph should be re-worded. While these measures may not result in population-level effects, they are likely to benefit individual or smaller numbers of whales.

NOAA #14

Page IV-B-33. Para. 1.
Have the physical and biological effects described here been recorded by Sterling, 1988, or are these theoretical?

NOAA #15

Page IV-B-48. Para. 2.
This section states an oil spill could affect whaling. It may be more realistic to assume any significant spill in the Alaskan Beaufort, particularly in the spring or fall, would result in the end of subsistence hunting for that season, as mentioned in the last sentence here.

NOAA #16

Page IV-C-1. C. Effects of Alternative II, No lease Sale.
What existing leases occur in the Sale 170 area? What are the probabilities for exploration and development on these tracts? To what extent will potential impacts exists with or without Sale 170?

NOAA #17

We appreciate this opportunity to comment on this draft document. Please direct any questions to Brad Smith at (907) 271-5006.

NOAA-01
Currently, the Alaska OCS Region is limited to the use of page-size graphics within its EIS's. Because of this limitation, the graphical presentation of the Federal leasing history in the Beaufort Sea is difficult. Sale areas consistently have overlapped, and many blocks have been leased, relinquished, and leased again. To accurately display the type of leasing information requested, a map much larger than page size is required. Leasing-history maps, however, are available from commercial vendors whose addresses can be furnished on request.

NOAA-02
See Section III.B.3.a of this FEIS and Section III.B.5 of the Sale 144 FEIS for a discussion of bowhead whale feeding areas in the Beaufort Sea. Lowry (1993) identifies two feeding areas, one extending from Barter Island to the U.S./Canada border and the second from Point Barrow east to approximately Pitt Point. The feeding areas identified for Sale 144 are outside of the Sale 170 area considered in this EIS.

NOAA-03
The MMS does not have the primary authority to permit causeways for oil and gas development; causeways would fall under the primary permit jurisdiction of the U.S. Army, Corps of Engineers. The MMS has a "position" on causeways: in the event that a lessee proposed to construct a causeway in association with developing an OCS lease, the causeway would have to be described in a Development and Production Plan. The DPP would be subject to independent NEPA, public, and coastal consistency review at the time it was proposed.

NOAA-04
Stipulation 4 was developed to specifically mitigate the effects of exploratory drilling and seismic noise. The nature and type of noise associated with development and production operations are different from exploration, and the need for specific mitigation for development activities has not been demonstrated at this time. Development activities will be evaluated in relation to a specific proposal and, if needed, appropriate mitigation will be developed.

NOAA-05
The referenced language has been deleted from ITL 5.

NOAA-06
Since 1993, Notice To Lessees (NTL) 93-1N has provided lessees with guidance on the procedures to follow in submitting financial-responsibility documentation and in complying with provisions of the OPA until such time that final rule-making is issued. This NTL is enforceable and is being enforced. It is the only NTL related to financial responsibilities

The MMS issued a draft final rule implementing the financial-responsibility provisions of the OPA on March 25, 1997. Comments are currently being evaluated. A final rule is anticipated by spring 1998.

The OPA established the limits for financial responsibility for offshore and onshore facilities. The MMS final rulemaking will establish the process and conditions under which the appropriate value of financial responsibility will be determined for a specific facility.

NOAA-07
The ITL 18 does not refer to "standards" for pipeline construction. This ITL refers to an administrative MOU between the USDOI and the USDOT that clarifies the regulatory jurisdiction of the two departments for offshore pipelines. The ITL also reflects that each department has regulatory requirements for offshore pipelines that require pipelines to be designed for the environmental conditions in which they will be built. The MMS regulations at 30 CFR 250 Subpart J specifically address Arctic conditions. See Response TFA-11 for additional discussion.

NOAA-08
Section II.E.1 contains conclusions based on the analyses in Sections IV.B.1, IV.D.1, and IV.E.1 and is presented in this format to provide the reader with an opportunity to quickly compare the potential effects of the alternatives. The type of information the commenter requested to be added to Section II.E.1 is presented in Section IV.B.1 along with appropriate references.

NOAA-09
The FEIS has been revised in response to this comment.

NOAA-10
If this sale resulted in commercial discoveries, development is anticipated to occur over a period of years as represented by the development scenario presented in Appendix A, Table A-2. This table shows a base-case development scenario of three platforms set from the year 2004 through the year 2008. It is assumed that three-dimensional seismic data would be collected to determine optimal platform location. The duration of seismic activity would depend on the type and extent of the proposed survey. Duration also would depend on ice conditions over the area to be covered and could require that operations cover >1 year. Generally, this type of seismic program could be completed in 4 to 6 weeks per platform. A rough estimate of the duration of this activity would be 1 month per platform.

NOAA-11
The MMS will evaluate industry-submitted oil-spill-contingency plans to determine their adequacy. Response-equipment needs will be analyzed based on the proposed uses and conditions expected. See Response TFA-55.

NOAA-12
The number has been changed from 600 m^2 to 850 km^2 in the FEIS.

NOAA-13
The author looked at the data over that period of time and drew conclusions on the available data. Six years of data represents a longer period of time than is found in most studies. Many studies, including many conducted by the NOAA, are relatively brief and conducted over a 1- to 2-year period. It is difficult to know whether 60 observations are sufficient for the author's conclusion. Monitoring programs have been conducted on bowhead whales where Federal Agencies (not MMS) and local-government agencies have drawn conclusions based on one whale being disturbed and avoiding an area where exploratory drilling was ongoing.

NOAA-14
The FEIS has been revised in response to this comment.

NOAA-15
Stirling (1988) recorded an increase in numbers of seals and polar bears near drilling platforms that formed cracks and leads in the surrounding ice.

NOAA-16
The FEIS has been revised in response to this comment.

NOAA-17
Existing leases within the Sale 170 area are portrayed in Figure II.A.-2. The effects of developing these presently leased blocks were discussed in the EIS's issued prior to their respective lease sales. Since 1979, the Beaufort Sea Planning Area has been the subject of six FEIS's. The potential impacts that may occur with or without Sale 170 can be understood by reviewing the recently released Beaufort Sea Sale 144 FEIS.

The purpose of the No-Sale Alternative is to analyze a situation in which Alternative I and its resources are not leased.

OFFICE OF THE MAYOR

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July 15, 1997

RECEIVED
JUL 17 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

John Goll
Regional Director
Alaska OCS Region
Minerals Management Service
949 East 36th Avenue, Room 308
Anchorage, Alaska 99508-4363

Dear Mr. Goll:

This letter is a follow up to brief comments made in Barrow at the July 10 public meeting regarding proposed Beaufort Sea Lease Sale 170. As you know, statements were made regarding inadequacies of the Sale 170 Draft Environmental Impact Statement (DEIS).

At that meeting, statements were given by the North Slope Borough (NSB), Alaska Eskimo Whaling Commission (AEWC), Barrow Whaling Captains Association (BWCA), and Native Village of Barrow (NVB).

While preparing ourselves for the July 10 meeting, many of us were moved by relevant and timely statements made recently in Barrow by Interior Secretary Bruce Babbitt. In particular, we were happy to hear him say that, in leasing processes in this remote area, we should all work together to not continue the serious environmental mistakes that have been made in the U.S. over the past 500 years. The Secretary seemed genuinely concerned that resource exploitation activities should not adversely impact what is one of the last subsistence based cultures in the U.S. Those of us who heard the Secretary were heartened by his comments.

It is this spirit, of trying to lessen industry related environmental impacts and in trying to protect our subsistence way of life, that we once again objected to a proposed offshore lease sale. We had hoped after the good progress made regarding mitigating measures seen in the Sale 144 Final Environmental Impact Statement (FEIS), that the Sale 170 DEIS would be a higher quality document. Unfortunately, the Sale 170 DEIS continues many of the problems we have pointed out to Minerals Management Service (MMS) on many previous occasions, as well as during the MMS sponsored March meeting in Barrow regarding seismic noise impacts.

By this letter I wish to call MMS's attention to our major concerns regarding the Sale 170 DEIS and to present a few other general comments as listed below:

1) We oppose offshore leasing.

2) If MMS goes forward with the sale, it should include the Kaktovik deferral mentioned in the DEIS, as well as protections to Cross Island, which is so important to the Nuiqsut people. Regarding our commitment to the protection of Cross Island, see the July 14 statement to Governor Knowles regarding Lease Sale 86 (see attachment). **NSB #1**

3) Any industrial activity occurring in offshore areas during the fall migration must be in accordance with a Conflict Avoidance Agreement between industry and the AEWC. **NSB #2**

4) Any drilling associated with the lease sale should be done from bottom founded structures (not drillships) in order to lessen noise impacts and to reduce chances of an oil spill. **NSB #3**

5) Although we have many specific problems with the DEIS, one of our major concerns is the generally poor level of recognition given to the personal experiences of our subsistence hunters. **NSB #4**

6) We continue to feel that seismic noise can impact approaching fall migrating bowhead whales up to distances of 30-35 miles. We have no faith at all in the 7.5 km (4.7 miles) figure, repeated over and over again by MMS, as the distance at which seismic noise affects fall migrating bowhead whales. **NSB #5**

7) We feel the DEIS unfairly put forward the noise impact data from the *Noise in the Lead Study* without mentioning the severe limitations of that study. This is especially disturbing since MMS assured us at a Barrow meeting before the study was done that study findings would be fairly presented and study limitations mentioned. **NSB #6**

8) As we have pointed out at many meetings, MMS documents such as this DEIS should also include findings from studies that tend to support the observations of our hunters. As an example, I refer to the so called *SWEPI Study* done in 1986 for Shell by LGL Limited that clearly showed whales avoiding an offshore drilling platform. **NSB #7**

9) We continue to feel there is no practical way to deal with a major offshore oil spill in the Chukchi and Beaufort Seas. The DEIS should give full consideration to the clean up difficulties encountered during the Exxon Valdez oil spill. The DEIS should also note that the Exxon Valdez oil spill occurred about 800 miles south of the Beaufort Sea in a much more "logistically friendly" environment. **NSB #8**

   We feel MMS continues to underestimate oil spill impacts to marine life in this DEIS. The DEIS should make full reference to the large amount of oil effects data (including to marine mammals) from the Exxon Valdez spill.

10) As pointed out many times before, we feel all impact assessment type studies associated with offshore exploration and development should be subjected to peer review. This review should involve the study design and the draft final report. Such impact assessment studies should be conducted as long as necessary to obtain the needed data. Short term poorly conducted studies should not be relied upon. A good example of an impact assessment area that needs additional scientific data is concerned with seismic noise impacts to fall migrating bowhead whales. **NSB #9**

This brief listing is to convey our great concern over the inadequacies of the Sale 170 DEIS. Within a week, we will provide you with a more detailed listing of specific areas in the DEIS that deserve attention.

If you choose to respond to our concerns and to revise aspects of the DEIS, I suggest you and your staff come again to Barrow (perhaps later this month) to meet with the BWCA and others to review the proposed changes to the DEIS.

Needless to say, we were all disappointed in the DEIS and we hope a cooperative effort can result in a better document. I look forward to hearing from you.

Sincerely,

Karen Burnell

Karen Burnell
Acting Mayor

Attachment

cc: Benjamin P. Nageak, Mayor, North Slope Borough
Marie Carroll, Chief Administrative Officer, North Slope Borough
Karen Burnell, Director, NSB Planning Department
Charlie Brower, Director, NSB Wildlife Management
Tom Albert, Senior Scientist, NSB Wildlife Management
Tom Lohman, Environmental Resource Specialist, NSB Wildlife Management
John Dunham, Permitting and Zoning Manager, NSB Planning Department
Maggie Ahmaogak, Executive Director, AEWC
Arnold Brower, Jr., President, Native Village of Barrow
Fred Kanayurak, President, Barrow Whaling Captains Association
Van Edwardsen, Vice President, Barrow Whaling Captains Association
Donald Long, President, Inuit Community of the Arctic Slope

Joint Statement to Governor Tony Knowles

on

Lease Sale 86

by

North Slope Borough, Alaska Eskimo Whaling Commission,
Barrow Whaling Captains Association, and Native Village of Barrow

July 14, 1997

The North Slope community opposes any industrial activity within 10 miles of Cross Island during Fall bowhead migration.

We oppose any exploration, development and transportation within state waters surrounding the island, unless there is a conflict avoidance agreement in place between industry and the Alaska Eskimo Whaling Commission.

We urge you to delete any consideration of state waters within 10 miles of Cross Island. This opposition is in support of the whaling community of Nuiqsut which depends on bowhead whaling in waters surrounding this island.

Karen Burnell
North Slope Borough, Acting Mayor

Alaska Eskimo Whaling Commission

Barrow Whaling Captains Association

Native Village of Barrow

North Slope Borough
OFFICE OF THE MAYOR

P.O. Box 69
BARROW, ALASKA 99723
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Benjamin P. Nageak, Mayor

RECEIVED
JUL 31 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

July 25, 1997

John Goll
Regional Director
Alaska OCS Region
Minerals Management Service
949 East 36th Avenue, Room 308
Anchorage, Alaska 99508-4363

Dear Mr. Goll:

This is a follow up to our letter to you of July 15 regarding problems that we are having with the Sale 170 Draft Environmental Impact Statement (DEIS). In the earlier letter were listed some of our major concerns. Also in that letter was noted that we would send additional and more specific comments. This letter includes some specific comments (Attachment 1) regarding the DEIS.

As can be seen in these comments, and has been stated at many meetings in the past, we feel that MMS consistently under represents the views of the hunters and too often fails to mention the limitations of some studies. Recently I have had the opportunity to examine two sections of draft #3 of the Biological Assessment pertaining to the Beaufort Sea Oil and Gas Development/Northstar Project. In particular I refer to the noise impact section of the document (pages 6-1 to 6-28, July 9 version) and the oilspill impact section (pages 7-6 to 7-15, July 7 version). The wording in these two draft sections is the fairest that I have ever seen and I refer them to you as examples as to how we hope your DEIS could be revised.

After you have examined our comments and the two sections of the Biological Assessment I urge you to consider revising the DEIS. When a revision is available I then suggest that you contact the Barrow Whaling Captains Association and arrange for another meeting in Barrow, through the office of the Executive Director Maggie Ahmaogak of the Alaska Eskimo Whaling Commission at 907-852-AEWC.

I hope these comments are helpful and if you wish to help improve the situation we will be pleased to work with you.

Sincerely,

Marie Carroll for

Benjamin P. Nageak
Mayor

Attachment

cc: Marie Carroll, Chief Administrative Officer, Mayor's Office, NSB
Karen Burnell, Director, NSB Planning Department
Charlie D.N. Brower, Director, NSB Wildlife Management
Tom Albert, Senior Scientist, NSB Wildlife Management
Tom Lohman, Environmental Resource Specialist, NSB Wildlife Management
Jon Dunham, Permitting and Zoning Manager, NSB Planning Department
Maggie Ahmaogak, Executive Director, AEWC
Arnold Brower, Jr., President, Native Village of Barrow
Fred Kanayurak, President, Barrow Whaling Captains Association
Van Edwardsen, Vice President, Barrow Whaling Captains Association
Donald Long, President, Inuit Community of the Arctic Slope
Honorable Bruce Babitt, Department of the Interior Secretary
Ken Hollingshead, NMFS, Washington D.C.
Brad Smith, NMFS, Anchorage

Attachment 1

A few comments regarding sections in Lease Sale 170 Draft Environmental Impact Statement (DEIS) that pertain to impacts to; 1) bowhead whales due to noise and spilled oil, and 2) beluga whales and waterfowl

1. DEIS page IV-B-19, first sentence of last paragraph

- The first sentence is not true because the Minerals Management Service (MMS) implies that the hunters question scientific studies in general. The sentence states "The results of many of the scientific studies generally are not accepted by the Inupiat whaling community". Most hunters on the North Slope have confidence in most scientific studies. The major studies that are poorly respected pertain to two areas; 1) industrial noise impacts to bowhead whales, and 2) the MMS sponsored bowhead feeding study reported by LGL Ltd. in 1987. The noise studies held with most disbelief are those that pertain to seismic noise impacts. The seismic noise studies are held in poor regard because; 1) the studies describe reactions to bowhead whales most of which are not actively migrating, 2) the studies do not involve fall migrating whales that are approaching a distant seismic ship, 3) the impact (avoidance) distances reported (7 km or so) are so close that probably not a single hunter believes them, 4) many fall bowhead hunters have direct experience of seismic noise impacts far, far, far beyond 7 km, 5) the hunters know that one of the most cited seismic studies (Ljungblad et al, 1988) was seriously flawed and was criticized by the IWC Scientific Committee, and 6) the hunters know that this flawed study is cited time after time by MMS and industry with no mention of the limitations of the study.

NSB #10

2. DEIS page IV-B-19; last paragraph

The third and fourth sentences in the last paragraph on page IV-B-19 are also misleading and are offensive to us. The 1982-1987 aerial surveys of fall migrating bowhead whales by Ljungblad and his associates (reported in 1988) are presented as "proof" that the years and years of hunters observations are not correct.

MMS cites his studies as evidence of no displacement due to industrial noise, but yet the DEIS does not tell the reader how precise were his studies. If MMS wants to refute the hunter observations with Ljungblad's work, then at least tell the reader the degree of precision of his observations. How many whales did he actually see each fall? How big would the displacement have to have been for the study to detect a displacement? From the very few bowheads seen each fall (about 200) it is likely that such studies had a very low level of precision regarding detection of a displacement of fall migrating whales.

NSB #11

The displacement of whales that impacts hunters does not necessarily extend across the entire length of the Alaskan part of the Beaufort Sea, but rather may be a more localized seaward displacement extending over an east-west distance of 30-60 miles.

NSB #11 cont.

3. DEIS page IV-B-20; second paragraph in column on the right

- Here again is reference to bowheads not avoiding seismic noise much beyond 7.5 km (4.7 miles). We do not believe this.

- From years and years of observations by dozens of hunters we know that fall migrating bowheads can be affected by seismic noise many, many miles away (30-35 miles).

- The few studies that MMS cites have obvious limitations such as: 1) the studies are few in number and only involve a few dozen whales, 2) the study situation is different from the real world. By different we mean that most of the few whales in the study were not actively migrating, and they were being approached by a seismic ship. In some of the instances during the study there was another seismic boat already firing when the "experimental" seismic boat began to fire. In the real world the fall migrating whales are actively moving to the west and they are approaching a distant seismic boat that is firing. As the whales swim toward the distant noise source, we know that many of them are displaced seaward so that by the time they reach the hunters the whales are further offshore and they are more wary and therefore are harder to hunt.

NSB #12

- We know from the personal observations of dozens of whale hunters over many years that fall migrating bowhead whales react to seismic vessel noise at distances far greater than 7.5 km (4.7 miles). As MMS knows, many hunters at the MMS sponsored March 5-6, 1997 seismic workshop in Barrow stated that impacts (such as displacement) can begin at great distances from an operating seismic ship, such as 30-35 miles.

- If MMS wants to keep citing the 7.5 km (4.7 miles) figure, then we demand that MMS also mention the obvious limitations of those few studies. We also want MMS to clearly state, in the same paragraphs as the 4.7 km is mentioned, that the hunters do not agree with such limited data.

- When mentioning hunter comments about seismic impacts, MMS does not clearly mention one of the most offensive instances of interference by seismic noise. This involved a seismic boat (probably the "Arctic Rose") and its seismic noise interference with the fall hunt off Point Barrow during 1989. This was mentioned at many meetings and again at the recent Barrow meeting (March 5-6, 1997) on seismic noise. In reference to this disturbance MMS should cite the report by Harry Brower, Jr. (NSB Department of Wildlife Management) which documents the great distance from Point Barrow for the fall 1989 harvested

whales. Copies of Mr. Brower's report were available at the March 5-6 meeting in Barrow.

- In another MMS sponsored report (Reeves et al., 1983) is mentioned, "the most significant result of our analysis is that surface times for the aggregate sample of adults increased in the presence of seismic sounds". On page 23 of the report data for 20 whales on September 24 show the blow frequency per surfacing and the time at surface were greater during shooting that before shooting. This effect was when the seismic ship was about 155 km (96 miles) from the whales. This is a long distance impact that should be mentioned.

NSB #12 cont.

4. DEIS page IV-B-21 (last paragraph) and page IV-B-22 (first three paragraphs)

   - These paragraphs mention the "Noise in the lead study" that was done for MMS by LGL Limited.

   - As we have feared, this very modest study is being over interpreted by MMS and its severe limitations are being ignored.

   - The DEIS when referring to the study findings refers to bowheads "often" tolerating sounds, and "some" bowheads were diverted, and "not all" were diverted, and that a "minority" of whales diverted. Use of such words in this instance is very misleading. A reasonable reader would likely conclude that this was a rather large study with few limitations. In reality this was a very small study with severe limitations.

   - Rather than using such terms ("often", "some", "not all", "minority") the actual numbers should be used because it will be more precise and it will show the reader that the number of animals in the study was very, very small.

NSB #13

   - The major limitations of this study were :1) the number of bowheads exposed to noise playbacks was very, very small, and 2) there are very great differences between noise from a real icebreaker and noise played back from a recording of an icebreaker. The difference in the noise not only involves "loudness" but also differences in the range of frequencies of the noise (ship compared to recording).

   - Only 93 bowheads were observed during playback of recorded icebreaker noise.

   - If this modest study is going to be cited in the DEIS, then the reader must be told the severe limitations of the study. MMS promised us they would do this and we expect MMS to keep its word.

5. DEIS pages IV-B-21and IV-B-22 (Effects from Drilling Activities)

NSB #14

   - The section on impacts to fall migrating bowheads due to drilling activities does not seem to mention the very good study done for Shell by LGL Limited. The report is dated November 15, 1987 and concerned a study done in 1986. The study documented impacts to fall migrating bowheads due to a drilling operation.

   - This study, sometimes called the "SWEPI Study", was well designed and is probably the best drilling related study that we have seen.

   - The study showed a virtual absence of whales within 9 miles of the drillship. Their study also shows a single whale that was followed for 6.8 hours that clearly deviated around the drillship, staying about 12 miles from the drillship. A figure from their report (page 42 of the Integration and Summary chapter) shows the path of this whale around the drillship.

   - In the conclusions section (pages 47-48) of the Integration and Summary chapter of the 1987 LGL report is stated "The principal finding of this study was that migrating bowheads appeared to avoid the offshore drilling operation in fall 1986. No bowheads were detected closer than 9.5 km from the drillship and few bowheads were sighted closer that 15 km".

NSB #14 cont.

   - In this section of the DEIS MMS presents information from studies and from subsistence hunters. It seems that MMS is trying to balance the views and this is good. In most readers minds the scales will be tipped in favor of the scientific data. In this instance the "contest" between the two viewpoints is not fair because the serious shortcomings of the scientific studies are not presented to the reader. The reader should be provided with the limitations of the studies and with data from other relevant studies (such as the "SWEPI study" reported in 1987 for Shell by LGL Limited) that are left out of this section.

   - The "SWEPI study" report also contained information showing seismic noise impacts to bowheads at long distances. There are two long distance seismic noise impacts presented in the report of the "SWEPI study" that was prepared in 1987 by LGL Ltd. In this instance refer to; 1) 4-7 whales showing behavioral changes at 14 miles ((24-22 km) from a seismic ship (see page 107 of the "behavior" chapter of the report), and 2) whale vocalization rate changing (increasing calling) with cessation of seismic noise when the ship is about 66 miles (110 km) away (see page 116 of the "behavior" chapter of the report). To be fair MMS should cite these studies as supporting the views of hunters who feel that impacts occur at distances far, far beyond 7 km.

6. DEIS pages IV-B-22 and IV-B-23 (potential effects from an oil spill)
   - A major deficiency of the section is that there is insufficient mention of the oil effects information already existing regarding marine mammals.

NSB #15

- There is no mention of the experimental exposure of polar bears to oil in Canada that was reported in 1981 by N. Oritsland. This study clearly shows the toxic effect of swallowing oil.

- There is no mention of the large amount of information as to impacts from the Exxon Valdez oil spill. Information on marine mammal impacts is contained in the 1994 book "Marine Mammals and The Exxon Valdez." This book and many reports of work done for The Exxon Valdez Oil Spill Trustee Council should be mentioned in the DEIS.

- There is no excuse for the DEIS to ignore the Canadian polar bear study and the Exxon Valdez related studies.

NSB #15 CONT.

7. DEIS page III-B-7, 4. Marine and Coastal Birds. In the second paragraph in this section (which begins on page III-B-5) there is a statement that 373,000 King and 71,000 Common Eiders passed Point Barrow during a recent spring migration. The citation is Suydam, Quakenbush and Johnson 1996; the more appropriate and useful citation should be:

   Suydam, R., L. Quakenbush, M. Johnson, J.C. George, and J. Young. 1997. Migration of King and Common Eiders past Point Barrow, Alaska, in spring 1987, spring 1994, and fall 1994. In; L. Dickson (ed.). Occasional Paper Number 94. Canadian Wildlife Service. Edmonton.

   This reference includes three recent migration counts and points out that the current migration counts are considerably lower than counts from 20+ years ago. King and Common Eiders populations of the Beaufort Sea have declined dramatically.

NSB #16

8. Page III-B-10. C. Belukha Whales. At the end of the first paragraph on belukha whales, it is stated that 2,400 to 3,000 belukha whales summer in the northwestern Beaufort and Chukchi Seas. It should read in the western Beaufort and northwestern Chukchi Seas.

NSB #17

9. Page IV-B-18. In the first sentence of the first complete paragraph of the first column, the word "proposed" should be removed from in front of Steller's Eiders. Steller's Eiders have been listed as threatened.

NSB #18

10. DEIS page IV-B-29. A. Potential Effects of Discharges. This paragraph states that most postbreeding waterfowl occur in dispersed flocks and thus few are expected to be harmed by discharges. This is not true; postbreeding waterfowl in the Beaufort Sea often occur in very large flocks and they can be concentrated in very small areas. This is especially true of eiders and Oldsquaw. There could be a substantial negative effect on eider or Oldsquaw populations if a discharge occurred in an area where these birds were staging or feeding. This is especially worrisome since King and Common Eider populations have decline and there are no reliable data on Oldsquaw populations.

NSB #19

11. DEIS page IV-B-30, (1) Vulnerability to Oil Spills. The above comments about "Potential Effects of Discharges" also apply here.

NSB #20

12. DEIS page IV-B-30 and -31, (2) Potential Site-specific Oil-spill effects. The estimates for the probability of an oil spill affecting waterfowl seem low. As is stated in the paragraph at the top of page -31 in the first column, "the assumed spill may spread over several hundred kilometers" and could cause mortality "ranging from several hundred to several thousand." The later number should be increased to tens of thousands. During spring migration at Point Barrow in 1987 and 1994, more than 100,000 King Eiders passed by in a day. During fall migration at Point Barrow in 1994, it was not uncommon to see 10,000 to 15,000 eiders pass in a day. (See the above mentioned reference.) If an oilspill occurred during these periods of intense migration a large percentage of Beaufort Sea eiders could be killed in a single event.

NSB #21

13. DEIS page IV-CJ-54. 6. Effects on pinnipeds, Polar Bears, and Belukha Whales. The last sentence of this section suggests that few if any belukha whales are likely to be adversely affected by a very large oil spill. Presumably a large oil spill would cover hundreds of square kilometers (as stated on page IV-B-31, first column, top paragraph). The Beaufort Sea population of belukha whales is perhaps as high 42,000 animals. Thus, it is likely that many more than "few, if any" belukha whales would encounter spilled oil and be adversely affected by it.

NSB #22

REFERENCES

Davis, R., C. Green, C. Evans, S. Johnson, and W. Koski. 1987. Responses Of Bowhead Whales To An Offshore Drilling Operation In The Alaskan Beaufort Sea, Autumn 1986. Report from LGL Ltd., King City, Ontario, Canada and Greeneridge Sciences, Inc., Santa Barbara, CA to Shell Western E. & P. Inc., Anchorage, AK.

Lipscomb, T., R. Harris, R. Moeller, J. Pletcher, R. Haebler, and B. Ballachey. 1993. Histopathologic lesions in sea otters exposed to crude oil. Veterinary Pathology 30: 1-11.

Ljungblad, D., B. Wursig, S. Swartz, and J. Keene. 1988. Observations on the behavior of bowhead whales (Balaena mysticetus) to active geophysical vessels in the Alaskan Beaufort Sea. Arctic 41: 183-194.
(The same basic data appeared in a paper (#SC/38/PS1) presented to the Scientific Committee of the International Whaling Commission (IWC) at their 1986 meeting).

Loughlin, T. (Edition). 1994. Marine Mammals and the Exxon Valdez. 395 pages. Academic Press, Inc., San Diego, CA 92101.

Oritsland, N.A., F.R. Engelhardt, F.A. Juck, R.J. Hurst and P.D. Watts, 1981. Effect Of Crude Oil On Polar Bears. Dept. of Indian Affairs and Northern Development Canada. Environmental Studies No. 24, 268 pp.

Reeves, R., D. Ljungblad, and J. Clarke. 1983. Report On Studies To Monitor The Interaction Between Offshore Geophysical Exploration Activities And Bowhead Whales In The Alaskan Beaufort Sea, Fall 1982. Report from Hubbs-Sea World Research Institute San Diego, CA 92109 and Naval Ocean Systems Center, San Diego, CA 92152 for Alaska OCS Region, Minerals Management Service, Anchorage, AK.

Suydam, R., L. Quakenbush, M. Johnson., J.C. George, and J. Young. 1997. Migration of King and Common Eiders past Point Barrow, Alaska, in spring 1987, spring 1994, and fall 1994. In: L. Dickson (ed.). Occasional Paper Number 94. Canadian Wildlife Service. Edmonton.

NSB-01
In response requests by the NSB, the AEWC, and the City of Nuiqsut for protections around Cross Island, the Sale 170 FEIS analyzes a new alternative for the area around Cross Island. Alternative IV is designed to provide a buffer within a defined 10-mi radius around Cross Island to minimize space use and potential noise disturbance conflicts between petroleum activities and subsistence whaling by Nuiqsut residents. The MMS recognizes the NSB's commitment to protection of Cross Island. The FEIS analyzes deferral of this buffer area. Also, in lieu of deferral, the FEIS analyzes the option of the effectiveness of the new Stipulation 6, developed as mitigation to prohibit permanent facilities within the defined area around Cross Island, unless the lessee can demonstrate that such facilities will not preclude reasonable access for subsistence hunting of bowhead whales. This stipulation conforms to a similar measure adopted by the State for Lease Sale 86.

NSB-02
The MMS recognizes the Borough's commitment to protecting Cross Island, as indicated in the NSB's statement to Governor Knowles on State Lease Sale 86 that any industrial activity occurring in offshore areas during the fall migration must be in accordance with a conflict avoidance agreement between industry and the AEWC. The MMS has modified Stipulation No. 5 (subsistence whaling and other subsistence activities) to include reference to such mechanisms as a conflict avoidance agreement in its requirement to lessees on consultation and conflict resolution. This also was requested by the Alaska Offshore Advisory Committee, so that the language of the mitigation-measures in the Sale 170 stipulation conforms to mitigation agreed upon by the Borough and the State for Lease Sale 86.

NSB-03
The selection of a drilling platform is based primarily on water-depth constraints, with reservoir objectives, durability, cost, and rig availability as additional important considerations. Bottom-founded structures are an appropriate option in water depths up to 70 feet. Floating systems are the only available option in water-depth conditions beyond the capability of the bottom-founded structures. Floating systems include drillships and structures such as the Kulluk, a conical-shaped, double-hulled, anchored drilling unit. Recent industry interest generally has focused on Federal acreage adjacent to State waters and reasonably close to existing infrastructure. These areas are more likely to yield a commercial venture because of more favorable economic conditions. Manmade islands or bottom-founded structures would be the likely development alternatives in these shallow waters. The MMS will evaluate other proposed structures or vessels in the event they are considered for use.

NSB-04
The FEIS has been expanded considerably to include traditional knowledge. The EIS does not dispute traditional knowledge over scientific knowledge. Both traditional knowledge and results from scientific studies are included in the conclusions.

NSB-05
The testimony provided by the whaling captains at the Arctic Seismic Synthesis and Mitigating Measures Workshop in Barrow, Alaska, regarding seismic noise affecting whales at distances of 30 to 35 mi was discussed in Section IV.B.4.a of the DEIS. The same statement is included in the FEIS, along with a statement by Dr. Tom Albert that the whaling captains do not believe the 7.5-km distance from several of the scientific studies is the distance at which whales may be affected by seismic noise. The testimony statement also is included in both the summary and the conclusion in the bowhead whale section. For clarification, the conclusions from the scientific studies refer to the 7.5-km distance as the distance at which most whales show avoidance responses to seismic operations. It does not discount that some whales may show avoidance responses at greater distances nor does it discount that whales may show behavioral changes other than avoidance (changes in dive rates, call rates, etc.) at distances much greater than 7.5 km.

NSB-06
The referenced study and its limitations were discussed in the Beaufort Sea Sale 144 FEIS and incorporated by reference in the Sale 170 DEIS. Revised text for the Sale 170 FEIS now includes a detailed discussion of the study and the limitations of the study as described by the author.

NSB-07
The referenced study and its limitations were discussed in the Beaufort Sea Sale 144 FEIS and incorporated by reference into the Sale 170 DEIS. Revised text for the Sale 170 FEIS now includes a detailed discussion of the study.

NSB-08
See Response TFA-55.

NSB-09
Since its inception in 1975, the Environmental Studies Program (ESP) of the Alaska OCS Region has generally had its draft study products peer reviewed. Final products resulting from MMS-sponsored research include over 150 peer-reviewed journal articles. Studies are proposed in the Alaska Environmental Studies Strategic Plan (ESSP). The ESSP is sent out annually or at least biannually for review by a wide range of stakeholders including peers. The mailing list generally exceeds 150 entities. Where appropriate, ESP studies have been peer reviewed at the design stage. For example, peers in the NSB were consulted closely in the design of the study titled *Bowhead Whale Feeding in the Eastern Alaskan Beaufort Sea: Update of Scientific and Traditional Information* in 1996 and 1997. Studies generally are continued until it is determined that sufficient data have been collected. For example, the study titled *Monitoring the Distribution of Arctic Whales* has been conducted annually since 1979 and is planned for continuation through the year 2000. A serious effort is made to select the best consultant or agency to conduct a study through a rigorous selection process. Once a study is under contract or a cooperative agreement, it is managed by a Contracting Officer's Technical Representative who has expertise in the field of the study. This entire ESP system is intended to provide studies of the highest quality available for environmental assessment and decisionmaking. Regarding seismic-noise impacts on fall-migrating bowhead whales, the MMS organized, in cooperation with the NSB, the Arctic Seismic Synthesis and Mitigating Measures Workshop held in Barrow, Alaska, in March 1997. As a result of concerns about seismic-noise impacts, the MMS proposed the study titled *Reference Manual and Geographic Information System Overlays of Oil-Industry and Other Human Activity (1970-1995) in the Beaufort Sea* in the FY 1999-2000 Alaska ESSP.

NSB-10
In Section IV.B.4.a (2)(a), the sentence has been reworded to reflect studies regarding the effects of seismic noise on bowheads. Section IV.B.4 (Effects on the Bowhead Whale) has been expanded in the FEIS to reflect the concerns outlined in the comment.

NSB-11
The reference to Ljungblad (1988) has been moved to a different location within the text of the FEIS. The number of observations has been included, and we have not tried to determine the degree of precision of Ljungblad's observations.

NSB-12
The studies that MMS cites in Section IV.B.4.a(2)(a) also were reviewed and synthesized by Richardson and Malme, 1993. The conclusion reached in this synthesis supports the referenced distance. The text has been revised and expanded to include additional references. The statement from the whaling captains at the seismic workshop in Barrow was included in the DEIS. Where the author of the study identifies limitations to the studies, those limitations have been included in the text. In the paragraph where the synthesis by Richardson and Malme was discussed, it is also stated that the hunters don't believe the data. Several statements by whaling captains regarding the *Arctic Rose* activities in 1989 have been included in the text. Both the Harry Brower, Jr., 1996, report and the Reeves et al., 1983, report also are cited.

NSB-13
Section IV.B.4.a of the FEIS has been expanded and includes more information on the referenced study. Limitations of the study, as identified by the author, are included in the revised text. The revised text includes information on the number of whales observed during the study.

NSB-14
Reference to the SWEPI study has been included in the text of the FEIS.

NSB-15
Information on the effects of the EVOS study on cetaceans has been included in the revised text of the FEIS. Information on polar bears has not been included in this section, because it would be inappropriate to compare polar bears with bowhead whales. General information on oil effects on marine mammals, including experimental exposure of polar bears to oil in Canada (Oritsland et al., 1981), is discussed in detail in the Sale 144 FEIS and in OCS Reports MMS 85-0031 and MMS 92-0012, which are referenced in Section IV.B.6.c.

NSB-16
The supporting citation has been changed, as recommended, and the text revised to reflect information contained in the new citation.

NSB-17
The text of the FEIS has been revised in response to this comment.

NSB-18
The text of the FEIS has been revised to reflect listing of the Steller's eider as threatened under the ESA.

NSB-19
There is no evidence that waterfowl would be harmed significantly by drilling discharges (i.e., either directly or through burial of potential benthic prey). Flock size was not noted in the referenced statement; however, it is discussed in Section III.B.5. The referenced text in Section IV.B.5 has been revised for clarification.

NSB-20
See Response NSB-19.

NSB-21
The commenter alludes to a worst-case incident in postulating spill contact with a large proportion of migrant eiders passing Point Barrow in the tens of thousands. While it is possible that a worst-case incident could occur and potentially contact more than a few thousand individuals, it is generally assumed to be a low-probability event because several assumptions would have to be satisfied: (1) the magnitude of the eider migration along the coast, where the probability of oiling is substantial, would have to be proceeding as at Point Barrow; (2) these birds would have to contact the water surface in large numbers at some point; (3) oil in sufficient quantity would have to be released to cover a substantial area of sea surface; and (4) winds would have to move the oil to areas where eiders may rest during migration. This EIS discusses the expected consequences of leasing and development rather than the worst case (but see Sec. J.5).

NSB-22
About half (48%) of the oil from the 160,000-bbl spill is expected to contact land, and the rest is expected to be widely dispersed in the Beaufort Sea. Although many belukha whales may pass through waters with some oil contamination, few whales are expected to be affected by patches of oil on the surface or hydrocarbons dispersed in the water column. Studies on oil-contact effects on dolphins (Geraci and St.

Aubin, 1982) suggest that these cetaceans are not vulnerable or sensitive to transient contact with an oil spill.

Porcupine Caribou Management Board

35 Harbottle Road
Whitehorse, Yukon
Y1A 5T2

July 16, 1997

RECEIVED
JUL 16 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

John Goll, Regional Director
US Minerals Management Service
Alaska OCS Region
949 E 36th Street
Anchorage, AK 99508-4302

Dear Mr. Goll.

LEASE SALE 170

The Porcupine Caribou Management Board is a Canadian co-management board whose mandate is to manage and protect the Porcupine Caribou Herd. The calving grounds of the herd is on the Alaskan coastal plain in the Arctic National Wildlife Refuge. This nutrient rich area is absolutely vital to the survival of the herd Therefore, the Board would like to strongly oppose the sale of any oil leases in the area adjacent to the Arctic National Wildlife Refuge. The Board believes that any development in this area would pose a serious threat to the Refuge and the surrounding coastal waters. In addition, it has not been proved that offshore drilling can be done safely. The damage that could occur from an oil spill under the sea ice is incalculable. **PCMB #1**

On behalf of the PCMB, I urge you to not allow any oil leases in this environmentally sensitive area of Alaska. The repercussions of development could have an impact on the Porcupine Caribou Herd and other wildlife that could never be repaired.

Ma Cee Cho

Joe Tetlichi, Chair
Porcupine Caribou Management Board

Chairman: Joe Tetlichi Secretariat: 35 Harbottle Road, Whitehorse, Yukon Y1A 5T2 Members: Stan Njootli, Old Crow, Yukon • Roy Mayes, Old Crow, Yukon • Ed Kormendy, Dawson, Yukon • Johnny Charlie Sr., Ft. McPherson, N.W.T. • Donald Aviugana,

PCMB-01
Past OCS exploration drilling under Sales 87, 97, and 124 has occurred offshore the ANWR without any significant effects on the PCH or on the refuge's ecosystem. Oil and gas exploration offshore of the ANWR have been done safely without any oil-spill events. If a spill occurred offshore of the ANWR under the sea ice, some effects on marine biota are expected to occur (see Secs. IV.B.2 and 3). The effects on the fauna of the ANWR, including PCH caribou, are expected to be relatively short-term (<1 generation), and the effects on the terrestrial habitats of the ANWR are expected to be minimal.

STATE OF ALASKA

TONY KNOWLES, GOVERNOR

OFFICE OF THE GOVERNOR

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July 17, 1997

Mr. John Goll
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RECEIVED
JUL 21 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Dear Mr. Goll:

Thank you for the opportunity to comment on the draft environmental impact statement for proposed Beaufort Sea Lease Sale 170. The attached page-specific comments represent the consolidated response from the State of Alaska.

I enjoyed the opportunity to attend the June 22 hearing for Lease Sale 170 that your agency held in Nuiqsut. This meeting gave me a clearer understanding of the concerns of facing North Slope residents.

Considering the number of oil and gas activities currently being proposed on the North Slope and the Beaufort Sea, close communication between the state and your agency is important. I have been working with your staff to continue information-exchange meetings between the Minerals Management Service and state agency representatives. These meetings provide an opportunity to compare approaches and to consider opportunities for joint problem solving.

I appreciate the efforts Jeff Walker has made to work closely with the state on projects of mutual concern including the Northstar Development Project, the Warthog Exploration Project, and the Liberty Development Project. This kind of cooperation will ensure early identification of issues and identify opportunities to work together to make project reviews more efficient and effective.

Please contact me if you have any questions about the attached comments on the Lease Sale 170 draft environmental impact statement. The state looks forward to working with you during further state involvement with this sale including development of the Governor's section 19 comments and review of the sale for consistency with the Alaska Coastal Management Program.

Sincerely,

Glenn Gray
Project Analyst

Enclosure

cc: Mayor Benjamin Nageak, North Slope Borough
Marilyn Heiman, Office of the Governor, Juneau
John Katz, Office of the Governor, Washington D.C.
Ken Boyd, Director, Division of Oil and Gas, Department of Natural Resources
Mike Conway, Director, Air and Water Quality, Department of Environmental Conservation
Janet Kowalski, Director, Division of Habitat and Restoration, Department of Fish and Game
Diane Mayer, Direct, Division of Governmental Coordination
Jon Dunham, North Slope Borough
Al Ott, Department of Fish and Game
Eric Decker, Department of Environmental Conservation
Pam Rogers, Department of Natural Resources

State of Alaska
Comments on Beaufort Sea Lease Sale 170
Draft Environmental Impact Statement

July 17, 1997

Much of the sale area for proposed Lease Sale 170 includes areas covered in the 1996 Outer Continental Shelf (OCS) Lease Sale federal Sale 144. While some of our comments are similar to those submitted for Lease Sale 144, other comments are new. These page-specific comments respond to issues in the draft environmental impact statement (EIS) in the order in which they occur.

Page I-10: Information to Lessee (ITL) No. 19

This ITL accurately reflects the state's position on produced water disposal. The Department of Environmental Conservation (DEC) appreciates inclusion of its concerns in the ITL.

Page II-9: ITL No. 10, Information on Polar Bear Interaction

The state recommends ITL No. 10 be expanded to include brown bears. Another option would be to develop a new ITL that encourages lessees to prepare and implement bear interaction plans for brown bears to minimize conflicts between bears and humans that may arise at onshore facilities associated with offshore development. These plans should include sufficient measures to minimize conflicts:

- minimize attraction of bears to facilities;
- organize layout of buildings and work areas to minimize human\bear interactions;
- warn personnel of bears near or on facility pads and the proper procedures to take;
- deter bears from the facility, if authorized;
- provide contingencies in the event bears do not leave the site and cannot be deterred by authorized personnel;
- discuss proper storage and disposal of materials that may be toxic to bears; and
- provide a systematic record of bears on the site and in the immediate area.

SOA #1

Page II-12: Effects on Water Quality

While the narrative correctly states that the state has a 0.015 ppm (15 ug/liter) criterion, it is important to note that the following three criteria exist for petroleum: 1) no visible sheen, 2) 0.015 ppm (15 ug/l) for total aqueous hydrocarbons (TAqH), and 3) 0.010 ppm (10 ug/liter) for total aromatic hydrocarbons (TAH). All three criteria are enforceable standards found in the state water quality standards.

SOA #2

It is also important to clarify that the State of Alaska does not have a 1.5 ppm acute toxic criterion for petroleum hydrocarbons in its regulations. We only have the three criteria listed above. We support MMS using 1.5 ppm for projections, however, for purposes of projecting possible acutely toxic effects.

SOA #2 cont.

Each section of the draft EIS where these criteria are mentioned should be modified as described above. For example, Page IV- B-5 needs to be modified.

Page III-B-2: Description of the Affected Environment, Biological Resources, 2a, Freshwater Species

The note in paragraph (a) is incorrect. Dolly Varden (*Salvelinus malma*) and Arctic char (*Salvelinus alpinus*) both occur within drainage systems on the North Slope. Those fish that occur in rivers, particularly those that spend part of their life cycle in salt water and are likely to be impacted from this sale are Dolly Varden (*S. malma*). Arctic char (*S. alpinus*) in this area occur almost exclusively in lakes.

SOA #3

Page III-B-7: Description of the Affected Environment, Biological Resources, 5a(1), Ringed Seal

Results of ringed seal surveys conducted in May 1996, which include density estimates, are found in the following reference and should be incorporated into the final document.

SOA #4

> Frost, K.J., L.F. Lowry, S. Hills, G. Pendleton, and D. DeMaster. 1997. *Monitoring distribution and abundance of ringed seals in northern Alaska.* Final Interim Report. Coop. Agreement 14-35-0001-30810. Submitted to USDI:MMS, Anchorage.

Page III-B-12: Description of the Affected Environment, Biological Resources, 6, Caribou

The second paragraph on this page states the Central Arctic Caribou Herd (CAH) declined to 18,100 animals in 1994 and continues to decline. Although we agree the CAH declined to 18,100 animals in 1994, there are no data available to support the claim made in this draft that the herd continues to decline.

SOA #5

The last sentence of this paragraph should state the range of the CAH extends from the Beaufort Sea coast south into the Brooks Range rather than to the crest of the Brooks Range.

Page III B-12, Paragraph 5: Description of the Affected Environment, Biological Resources, 6, Caribou

The need for caribou to migrate is not solely an adaptation that prevents destruction of foraging habitat. Migration takes advantage of forage availability and also incorporates predator and insect avoidance. Although overgrazing may be a factor, it is not the overriding factor involved in inducing migration in caribou herds. SOA #6

Page III-C-19: Description of the Affected Environment, Social Systems, C2(3), Kaktovik

This comment concerns paragraph four on this page. Current harvest opportunities for muskoxen on the North Slope have changed since the development of the draft EIS. For the 1997-1998 season, 5 State of Alaska Tier II muskoxen permits will be available for qualified Alaska residents for harvest of muskoxen in Game Management Unit (GMU) 26B (between the Itkillik River drainage and the west bank of the Canning River). In addition, 15 Federal subsistence registration permits are available for rural residents of Kaktovik for the taking of muskoxen in GMU 26C (Canning River to Alaska-Canada border). There is no sport hunting of muskoxen on the North Slope at this time. SOA #7

Page IV-B-2: Produced Waters

The description in this section is excellent. The narrative could benefit from making a clear distinction between EPA's technology-based limits of 42 ppm and 29 ppm oil and grease and the Alaska Department of Environmental Conservation's water quality criteria of 15 and 10 ug/liter, TAqH and TAH, respectively. Not only are the limits different, they also measure different fractions of the petroleum Hydrocarbon spectrum. SOA #8

Page IV-B-38: Effects of Alternative I, Caribou

The displacement of cow caribou and calves reported in the section 7a(1) of this part of the draft EIS (1 to 2 km) is somewhat less than that observed more recently (greater than or equal to 3 km) (K. Whitten, Alaska Department of Fish and Game, pers. comm. with Al Ott). Recent data also suggest large-scale displacement of calving in the Kuparuk/Milne Point area. SOA #9

The effects of disturbance and development on caribou presented in section 7b(1) of this part of the draft EIS do not completely or accurately describe the effects observed or reported. Although some caribou may have developed some degree of tolerance to

repeated exposure to human activities, there is no evidence to support the statement in the draft EIS that most caribou have developed some degree of tolerance.

The effects of disturbance associated with pipelines and oil development extends beyond the 5% of the summer range of the CAH stated in section 7b(2) of this part of the draft EIS. A much larger area, on the order of 25% of the June/July range, has been affected (K. Whitten, Alaska Department of Fish and Game, pers. comm. with Al Ott). The statement that CAH caribou abundance and overall distribution have not been affected should be qualified to note the recently observed decline in numbers. SOA #9 cont.

Sections IV D: Effects of Alternative III, Kaktovik Deferral, and IV E: Effects of the Cumulative Case.

The comments and recommended changes discussed for Sections II, III, and IV above should be incorporated into the appropriate subsections of Sections IV D and IV E.

This concludes the state's comments on the draft EIS for proposed Lease Sale 170.

SOA-01
The ITL 10 was designed to reduce adverse interactions between polar bears and oil workers offshore. Although the measures may be applicable for brown bears, ITL 10 covers lessee requirements under the Marine Mammal Protection Act (MMPA) regarding the taking of polar bears. Brown bears are not covered under this Act; and OCS oil workers are not likely to have any encounters with brown bears in offshore operations. Onshore facilities associated with Alternative I are expected to use existing facilities. If and when a specific development plan is proposed for Sale 170 leases, current measures on brown bear interactions—recommended by ADF&G in their review of development plans—can be implemented.

SOA-02
The information presented in Sections IV.B.1.a (1)(b)2) and IV.B.1.c has been revised to include the suggested State water-quality standards.

SOA-03
The author has noted and agrees with the comment. The appropriate corrections and citations have been made to the text of the FEIS.

SOA-04
The text of the FEIS has been revised in response to this comment.

SOA-05
The text of the FEIS has been revised in response to this comment.

SOA-06
The text of the FEIS has been revised in response to this comment.

SOA-07
The text of the FEIS has been revised in response to this comment.

SOA-08
The text of the FEIS has been revised in response to this comment.

SOA-09
The text of the FEIS has been revised in response to this comment. However, there is no conclusive evidence cause and effect between the decline in CAH numbers and industrial activity. The statement in the DEIS that ". . .CAH overall abundance and distribution has not been affected. . ." does note that the herd recently has declined (see Sec. IV.B.7.b).

COMMENTS TO
MINERALS MANAGEMENT SERVICE
ON THE
PROPOSED BEAUFORT SEA PLANNING AREA
OIL & GAS LEASE SALE 170
DRAFT ENVIRONMENTAL IMPACT STATEMENT

RECEIVED
AUG 1 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Submitted by

ALASKA CENTER FOR THE ENVIRONMENT
ALASKA WILDERNESS LEAGUE
DEFENDERS OF WILDLIFE
GREENPEACE
NATURAL RESOURCES DEFENSE COUNCIL
NORTHERN ALASKA ENVIRONMENTAL CENTER
SIERRA CLUB
THE WILDERNESS SOCIETY
TRUSTEES FOR ALASKA
U.S. PUBLIC INTEREST RESEARCH GROUP

July 31, 1997

TRUSTEES FOR ALASKA

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July 31, 1997

Mr. John Goll, Regional Director
U.S. Department of the Interior
Minerals Management Service
Alaska Outer Continental Shelf Region
949 E. 36th Ave., Room 308
Anchorage, Alaska 99508-4302

RECEIVED
AUG 1 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

Re: Proposed Beaufort Sea Planning Area Oil and Gas Lease Sale 170
Draft Environmental Impact Statement

Dear Mr. Goll,

Trustees for Alaska, on behalf of its members, Greenpeace, Alaska Wilderness League, Northern Alaska Environmental Center, Defenders of Wildlife, The Wilderness Society, Sierra Club, U.S. Public Interest Research Group, Alaska Center for the Environment, and Natural Resources Defense Council would like to take this opportunity to comment on the Draft Environmental Impact Statement for the proposed Beaufort Sea Planning Area Oil and Gas Lease Sale 170 on behalf of our more than 1 million members across the nation.

Proposed Sale 170 encompasses approximately 1.7 million acres located three to twenty-five miles off Alaska's Arctic coast. The estimated oil produced from Sale 170 would provide the small temporary benefit of fulfilling the nation's energy demands for a mere 21-39 days.[1] This small amount of oil does not justify the corresponding anticipated twenty-one years of legal and illegal air and water pollution, disturbance and other related threats to the integrity and beauty of numerous national treasures including the Arctic National Wildlife Refuge, the constant threat of oil spills, actual oil spills, aesthetic harm, psychological harm, harm to subsistence resources, values and cultures, harm to fish and wildlife, harm to recreational values, harm to sustainable economies, and negative effects of adding more carbon dioxide (CO_2) into the atmosphere which increases the threat of global climate change.

Trustees and the other conservation organizations submitting this letter oppose the proposed Lease Sale 170 due to the irreversible adverse impacts of oil and gas development on irreplaceable significant marine mammals, fish, coastal birds, and other wildlife. Our opposition is also due to the fact that direct and cumulative effects of exploration, development, and production will result in permanent harm to the unique wildlife and wilderness values of the Arctic National Wildlife Refuge. We recommend at this time that Lease Sale 170 be canceled because it is not

[1] This is based on MMS's own estimate that the leases can produce between 350-670 million barrels and the nation consumes a minimum of seventeen million barrels of oil a day. Beaufort Focus, (USDOI, MMS Alaska OCS Region) May 1997.

needed to meet the goals of the Federal Outer Continental Leasing Program and in light of the fact that there is major public concern over exploration and development activities proposed for the extensive, already existing offshore leases in the Beaufort Sea. Adequate environmental impact analysis of the unprecedented Northstar and Liberty development projects and the controversial Warthog well in Camden Bay should be addressed prior to consideration of this lease sale because these constitute substantial new pieces of information that should be analyzed in the environmental impact statement.

Trustees et al. also believe that the DEIS is wholly inadequate because it fails to adequately address alternatives, particularly with respect to meeting the energy needs of the nation in a more sustainable way and in view of our nation's obligations to address reductions in the production of fossil fuel emissions that contribute to global climate change. This DEIS also fails to comply with NEPA because of inadequate analysis of the direct, indirect and cumulative effects of the proposed action (including all oil transportation methods) on the integrity of the Arctic National Wildlife Refuge, impacts to key habitats used by polar bears, caribou, fish, migratory birds, bowhead whales, and threatened and endangered species.

The following sections elaborate on our concerns.

I. The Draft EIS Violates The National Environmental Policy Act.

The National Environmental Policy Act, 42 U.S.C. §§ 4321-4370a, is "our basic national charter for protection of the environment." 40 C.F.R. § 1500.1(a). NEPA expressly declares Congress' purpose of promoting efforts "which will prevent or eliminate damage to the environment." 42 U.S.C. § 4321. NEPA accomplishes these environmental protection goals by requiring federal agencies to consider the environmental consequences of their actions and by informing the public, including Congress, of those consequences.

NEPA requires that federal agencies prepare a detailed "environmental impact statement" ("EIS") for all major federal actions significantly affecting the quality of the human environment. When determining whether a project will have a significant impact on the environment, the agency must look at short and long-term effects in the locale, the unique characteristics of the geographic area including proximity to parks and ecologically critical areas, and adverse effects on endangered or threatened species or their habitat. *Id.*, § 1508.27. The agency must also consider direct, indirect, and cumulative effects of its proposal and reasonable alternatives thereto, including effects related to induced changes in the pattern of land uses and related effects on ecosystems. Id. §§ 1502.16(a), 1502.16(b), 1508.8(a), 1508(b),1508.7.

A. The DEIS fails to adequately consider project alternatives.

The heart of the EIS is the consideration of alternatives. 40 C.F.R. § 1502.14. When a large number of alternatives exist, the agency must consider a reasonable number that covers the full spectrum of alternatives. *See* Council on Environmental Quality, "*Forty Most Asked Questions* TFA #1

Concerning CEQ's National Environmental Policy Act Regulations," Question 1, 46 Fed. Reg. 18026, 18027 (1981).

The purpose of the requirement to discuss a reasonable range of alternatives is to ensure that each agency decision maker has before her and takes into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit analysis. Only in that fashion is it likely that the most intelligent, optimally beneficial decision will ultimately be made. *Calvert Cliffs Coordinating Committee, Inc. v. Atomic Energy Comm'n*, 449 F.2d 1109, 1114 (D.C. Cir. 1971). In determining the scope of the alternatives in an EIS, "an agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action, and sufficient to permit a reasoned choice." *Alaska Wilderness Recreation v. Morrison*, 67 F.3d 723, 729 (9th. Cir. 1995). TFA #1 cont.

Sale 170 discusses three alternatives in the DEIS: alternative I, the proposed action offering 363 blocks for lease, Alternative II, the No Lease Sale and alternative III, the Kaktovik Deferral, deferring 85 blocks. The Kaktovik Deferral alternative is not substantially different from the proposed action, according to MMS's own analysis and therefore needs to be modified so that is has substantially less environmental impact than the proposed action. TFA #2

MMS ignored both the request of the City of Kaktovik, supported by the North Slope Borough, and an environmentalist request during the Anchorage scoping meeting to delete all blocks east of the Canning River delta (Staines River). Additional reasons should be added to the rationale for the Kaktovik/Canning River Delta deletion/deferral alternative: major concerns that (a) offshore development would degrade the Arctic National Wildlife Refuge shoreline's wildlife and wilderness values, even if there were not onshore facilities, and (b) it is currently technically (or economically) infeasible to build 60-70 miles of subsea pipeline develop the offshore leases in this area without going onshore, and therefore, leasing this OCS area would greatly increase the pressure to open the refuge to oil development. TFA #3

We are particularly concerned that the DEIS does not adequately consider the "No Lease Sale" alternative's ability to fulfill the nation's energy desires through alternative energy sources. Under Alternative II, the No Lease Sale, it is assumed that oil and gas lost from Sale 170 will be substituted from alternative sources. These other sources are assumed to be additional oil imports (88%),conservation (5%), additional domestic oil production (4%) and fuel switching (3%), primarily to natural gas. These numbers were derived from the report *Energy Alternatives and the Environment* (DOI, MMS 1996). This report is inadequate itself in addressing the nation's ability to use alternative energy sources to power our fuel-consumptive lifestyles. Other alternative energy sources exist and are working. MMS's alternative energy analysis does not calculate how much energy can be saved through clean energy initiatives; instead, alternative energy options to reduce fossil fuel demand are viewed in terms of the potential impacts they may have on the environment. MMS must recognize that at the current consumption rate of 17 million barrels a day, estimated domestic oil and gas is simply not enough. Undiscovered oil from the entire U.S. OCS would meet this demand for only 3.5 years if used all at once. Together, the estimated resources from the Arctic OCS and the Arctic National Wildlife Refuge would meet the demand for less than one year, at best, TFA #4

and more likely for a few months.[2] Even if used gradually over a 20-30 year period this remains a statistically small amount of energy.

The U.S.'s traditional reliance on Alaska for energy security (in the form of fossil fuels) leaves local economies based on non-renewable resource extraction subject to distant market fluctuations and eventual depletion of the resources. More energy can be derived at a lower cost from energy efficient and renewable energy systems than from oil, gas and coal. These alternatives have been successfully applied here in Alaska and elsewhere. For example, considerable wind power now exists in Kotzebue, and wind also powers numerous residents of small communities such as Ferry and Healy, Alaska. [In Arctic Village, Alaska a passive-solar powered community freezer enhances the subsistence economy of the Native Gwich'in village by providing freezer capacity for subsistence foods at an annual savings of $25,000 per year in electricity costs.

MMS recognizes that alternatives to fossil fuels exist and that the possibilities are many, but states that the *Energy Alternatives and the Environment Report* (USDOI, MMS 1996) adequately discusses them. This report looks at alternative energy sources for the *entire* Outer Continental Shelf Oil and Gas Leasing Program 1997 to 2002. The report solely considers environmental impacts associated with production and transportation of alternative energy sources and is itself inadequate under NEPA. The report fails to analyze the viability and future availability of these sources and simply assumes that all oil production lost from a no action alternative would be replaced by onshore production, imports, conservation and switching to gas. The report also fails to point out that the transition to clean energy has been slow not because of technological barriers but because of political resistance. Economic disincentives for the transition to clean energy have dominated policy decisions on national energy planning throughout the 1980's and the 1990's.

TFA #4 cont.

An example of the inadequacy of the *Energy Alternatives* report is readily visible in its brief discussion of solar energy. A mere half page of the 39 page document is dedicated to discussion of solar energy as a replacement for fossil fuels. The report quickly comes to the conclusion that "solar powered electricity will remain a high cost alternative for the foreseeable future and will not make a major contribution to electricity generation because of its cost." *Energy Alternatives* at 34. The accompanying table in the report lists the generating capability of solar thermal energy as 0 and photovoltaic as 4 megawatts (3 million kilowatt hours). (Id at Table 8, pg. 30) Yet, today one million buildings in the U.S. are heated , cooled and lit with solar power.[3] The report's discussion of

[2] Natural Resource Defense Council. 1991. *The Ocean Protection and Arctic National Wildlife Refuge Oil and Gas Estimates.* Figures from MMS, *Draft OCS Natural Gas and OIL Resource Management Comprehensive Program*: Table 4. Department of Interior. 1987 *Arctic National Wildlife Refuge Coastal Plain Resources Assessment*: p. vii. Recent analysis shows that if oil is found in the Arctic Refuge, the most likely estimate (898 million barrels according to the US Geological Survey) would provide only 51 days worth of oil; see Natural Resources Defense Council. 1997. Diminishing Returns: Oil projections meet economic realities in the Arctic National Wildlife Refuge.

[3] Renewable Growth. Winter 1986. Business and Society Review: # 56
Homer, Edith. 1989. *Almanac of the Fifty States.* Palo Alto CA: Information Publications,

wind power is equally inadequate, claiming that the contribution of wind power to U.S. electricity generation is minimal. (Id at table 8, pg. 33) Yet, in reality wind power has become increasingly more competitive over the years. For example, there is enormous potential in 12 mid-western states that could generate more than three times the amount of electricity consumed by the U.S. in 1987[4]-- a far greater amount of energy than proposed to be generated by this lease sale. Already, wind farms in California generate electricity equal to the needs of San Francisco.[5] Yet, MMS dismisses wind generated electricity as minimal and insubstantial in meeting the nation's future energy needs.

TFA #4 cont.

It is MMS's responsibility, not the citizens of Alaska or the public throughout the nation, to present reasonable alternatives to a proposed action in sufficient detail to permit a reasoned decision. MMS has not provided adequate information concerning the ability of renewable energy sources, together with conservation measures, to offset all or part of the energy demand which Sale 170 may satisfy. Instead, MMS has provided only minimal discussion of renewable sources' ability to offset energy production from the entire OCS offshore leasing program. MMS must gather information regarding existing and proposed uses of wind and solar energies in Alaska and elsewhere, and assess the viability of such sources, in addition to conservation, as alternatives to offering Sale 170.

B. The Draft EIS Fails To Adequately Consider The Direct, Indirect, and Cumulative Effects Of The Proposed Action.

The EIS must examine all of the direct effects of the proposed Sale 170. Direct effects are those "which are caused by the action and occur at the same time and place." 40 C.F.R. §1508.8(a). The EIS must also address the myriad indirect effects that Sale 170 will have on the arctic ecosystem. NEPA regulations define "indirect effects" as those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8(b). Indirect effects include "induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." Id.

TFA #5

Finally, the EIS must discuss the "cumulative impacts" of the proposal, which are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.... cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7.

Sale 170 would create irreversible adverse impacts associated with oil and gas development on irreplaceable marine mammals, fish, coastal birds and other wildlife. The DEIS attempts to analyze the highly complex ecosystem these animals rely upon for survival with a simple analysis. Throughout the DEIS, MMS optimistically assumes that animals will habituate to proposed

TFA #6

[4] World Resources Institute, 1992. *World Resources 1992-1993:*22.

[5] Gipe, P. 1989. Wind Energy Comes of Age in California p. 45 in: Brower, Michael 1990. Cool Energy, the Renewable Solution to Global warming. union of Concerned Scientists.