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5. Participation in the Reclamation Fund has directly benefited the western states, except Alaska. The Reclamation Fund is a token mechanism for funding irrigation and impoundment projects in western states. In 1982, for instance, public land revenues to the Fund (mineral leasing, land and timber sales) from the participating western states totalled about $450 million, but expenditures on reclamation projects in the same states were about $800 million (including some general fund payments and revenue from reclamation projects) Through its history the Reclamation Fund has been fortified by large contributions of general fund dollars, in addition to public land and reclamation project revenues. (Attachment Four - Map showing western states Reclamation Fund contributions/receipts for 1982.)

6. Alaska public lands subject to 90% revenue-sharing include ANWR. In the Kenai Moose Range case (1981), the United States Supreme Court held that "(r)evenues generated by oil and gas leases on federal wildlife refuges consisting of reserved public lands...must be distributed according to the formula provided in...the Mineral Leasing Act of 1920." Thus ANWR public lands, if not closed to leasing by ANILCA 1002(i), would be subject to the Mineral Leasing Act of 1920, including the 90% revenue sharing provision.

7. The former Naval Petroleum Reserve No. 4 ("Pet-4") was exempt from the 90% revenue sharing provision; Alaska has never had a 90% entitlement on the Pet-4/NPRA acreage. In his recent speech before the Alaska Legislature, Senator Stevens stated: "Many in Congress remember that reduction of Alaska's share to 50% was part of the price of opening the 23 million acre National Petroleum Reserve-Alaska." In fact, naval petroleum reserves (including the former Pet-4) are specifically exempted from the leasing and revenue-sharing provisions of the Mineral Leasing Act of 1920. The State of

Rep. Cotten - ANWR revenues

Alaska never enjoyed a 90% entitlement to revenues from production on Pet-4/NPRA acreage; thus there was never a "reduction of Alaska's share to 50%." Only if Pet-4 had been turned over to the Department of the Interior without special legislation affecting Alaska's revenue share could NPRA have been public land subject to the usual 90% revenue-sharing arrangement.

8. When Congress established the National Petroleum Reserve - Alaska (NPRA) in 1976, it raised Alaska's revenue share from 0% to 50%. Appearing before the Committee, U.S. Fish and Wildlife Service Alaska Region Director Bob Gilmore said that the Interior Department expects Congress to use the NPRA model (a 50% entitlement for Alaska) as a basis for opening ANWR, and that the Interior Department would use a similar mechanism if it agreed to an overriding revenue retention provision in the pending land trade contracts. In fact, the legislation which opened Pet-4 to oil and gas leasing, including revenue sharing, is a poor example for reduction of the State of Alaska's revenue share from ANWR. The State's revenue expectations for the affected acreage jumped from 0% to 50% with the passage of the NPRA Act in 1976, which removed the land from its exempt status under the Mineral Leasing Act of 1920.

9. If the United States proceeds with land trades affecting Alaska's 90% entitlement, would the State be able to challenge the exchanges on the basis of its prior existing right? In a recent letter to Asst. Interior Secretary Bill Horn, Rep. Cotten asked whether the Interior Department believes that it may trade Alaska's existing right without Alaska's concurrence. No response has been received. However, in the attached opinion, the Attorney General indicates little faith that the courts would accept the argument that the 90% entitlement in the Statehood compact

Rep. Cotten - ANWR revenues

"also constituted an implied promise not to convey federal lands to third parties..."

10. Congress must generally treat the States equally; can it create a new leasing mechanism, or segregate ANWR lands, with the purpose of reducing or eliminating Alaska's rightful share of mineral leasing revenues from ANWR? Rep. Cotten has asked the Attorney General whether there are "foreseeable circumstances under which federal lands in the coastal plain could be considered other than 'public land' subject to the Mineral Leasing Act and the 90/10 federal-state revenue-sharing arrangement."

SUMMARY

The State of Alaska has a strong case to support its contention that the 90% revenue sharing entitlement is part of the Statehood compact and that any oil and gas revenues derived from federal lands in ANWR must be subject to this provision as it exists. If Congress decides to open ANWR, and wishes to do so in a manner that will not be susceptible to legal challenge, Alaska's concurrence will be necessary on any reduction in the existing 90% entitlement.

Attachments

findings and order of the Secretary shall be set aside by such court if they are not found to be supported by substantial evidence as provided in section 706(2)(E) of title 5, United States Code.

(3) If any person fails to pay an assessment of a civil penalty against him under paragraph (1) after it has become final, or after the appropriate court has entered final judgment in favor of the Secretary, the Secretary shall refer the matter to the Attorney General of the United States, who shall recover the amount assessed in any appropriate district court of the United States. In such action, the validity and appropriateness of the final order imposing the civil penalty shall not be subject to review.

(4) The Secretary may compromise, modify, or remit, with or without conditions, any civil penalty which is subject to imposition or which has been imposed under this subsection unless the matter is pending in court for judicial review or recovery of assessment.

(h) Report to Congress.—Not earlier than five years after the enactment date of this Act and not later than five years and nine months after such date, the Secretary shall prepare and submit to Congress a report containing—

(1) the identification by means other than drilling of exploratory wells of those areas within the costal plain that have oil and gas production potential and estimate of the volume of the oil and gas concerned;

(2) the description of the fish and wildlife, their habitats, and other resources that are within the areas identified under paragraph (1);

(3) an evaluation of the adverse effects that the carrying out of further exploration for, and the development and production of, oil and gas within such areas will have on the resources referred to in paragraph (2);

(4) a description of how such oil and gas, if produced within such areas, may be transported to processing facilities;

(5) an evaluation of how such oil and gas relates to the national need for additional domestic sources of oil and gas; and

(6) the recommendations of the Secretary with respect to whether further exploration for, and the development and production of, oil and gas within the costal plain should be permitted and, if so, what additional legal authority is necessary to ensure that the adverse effects of such activities on fish and wildlife, their habitats, and other resources are avoided or minimized.

(i) Effect of Other Laws.—Until otherwise provided for in law enacted after the enactment date of this Act, all public lands within the costal plain are withdrawn from all forms of entry or appropriation under the mining law and from operation of the mineral leasing laws, of the United States.

PROHIBITION ON DEVELOPMENT

16 USC 3143

Sec. 1003. Production of oil and gas from the Arctic National Wildlife Refuge is prohibited and no leasing or other development leading to production of oil and gas from the range shall be undertaken until authorized by an Act of Congress.

WILDERNESS PORTION OF STUDY

Report to President
16 USC 3141

Sec. 1004. (a) As part of the study, the Secretary shall review the suitability or nonsuitability for preservation as wilderness of the

Federal lands described in section 1001 and report his findings to the President.

(b) The President shall advise the Senate and the House of Representatives of his recommendations with respect to the designation of the area or any part thereof as wilderness together with a map thereof and a definition of its boundaries. Presidential recommend. to Congress

(c) Subject to valid existing rights and the provisions of section 1002 of this Act, the wilderness study area designated by this section shall, until Congress determines otherwise, be administered by the Secretary so as to maintain presently existing wilderness character and potential for inclusion in the National Wilderness Preservation System. Already established uses may be permitted to continue, subject to such restrictions as the Secretary deems desirable, in the manner and degree in which the same were being conducted on the date of enactment of this Act.

WILDLIFE RESOURCES PORTION OF STUDY

16 USC 3145

Sec. 1005. The Secretary shall work closely with the State of Alaska and Native Village and Regional Corporations in evaluating the impact of oil and gas exploration, development, production, and transportation and other human activities on the wildlife resources of these lands, including impacts on the Arctic and Porcupine caribou herds, polar bear, muskox, grizzly bear, wolf, wolverine, seabirds, shore birds, and migratory waterfowl. In addition the Secretary shall consult with the appropriate agencies of the Government of Canada in evaluating such impacts particularly with respect to the Porcupine caribou herd. Consultation with Canadi. Government

TRANSPORTATION ALTERNATIVES PORTION OF STUDY

16 USC 3146

Sec. 1006. In studying oil and gas alternative transportation systems, the Secretary shall consult with [illegible] tation and shall consider—

(1) the extent to which environ[illegible] feasible alternative routes could be e[illegible]

(2) the prospective oil and gas prod[illegible] of Alaska for each alternative transp[illegible]

(3) the environmental and econo[illegible] associated with such alternative rout[illegible]

ARCTIC RESEARCH E[illegible]

16 USC 3147

Sec. 1007. (a) The Secretary, the Sec[illegible] Secretary of Energy shall initiate and [illegible] mission, facilities and administration of [illegible] laboratory (NARL), at Point Barrow, Ala[illegible] the historical responsibilities carried out [illegible] bution to applied and basic Arctic resear[illegible] cally address and the Secretary shall mak[illegible] need for redirecting the United States Ar[illegible] role of the NARL facilities in developi[illegible] policy.

(b) The Secretaries shall assess the [illegible]

(1) developing relevant scientific [illegible] environment and utilizing applied re[illegible] unique problems the Arctic presents i[illegible]

(B) minimize the impact of resource d[illegible]

Arctic arch ratory, sment

ATTACHMENT ONE
ANILCA Sec. 1002(h), 1003

...vation of helium gas bearing land on the public domain, see section 167a of Title ... Land National Defense.

Resettlement lands for Navajo tribe, transfer of interests of United States as lessor under ... chapter, see section 640d-10 of Title 25, Indians.

Review of withdrawals in Alaska and in states which closed lands to mineral location under this chap... see section 1714 of Title 43, Public Lands.

Revocation of reservation of certain lands in and around Taquina Head and restoration to pub... lands, except that such lands be withdrawn from entry under this chapter, see section 17... of Title 43.

Status of offers for noncompetitive oil and gas leases and lands conveyed to Alaska nati... corporations or individual Alaska natives, see section 1635 of Title 43.

Steese National Conservation Area, mineral exploration and development, see section 460mm-... of Title 16, Conservation.

SUBCHAPTER I—GENERAL PROVISIONS

§ 181. Lands subject to disposition; persons entitled to benefits; reciprocal privileges; helium rights reserved

Deposits of coal, phosphate, sodium, potassium, oil, oil shale, gilsonite (including all vein type solid hydrocarbons), or gas, and lands containing such deposits owned by the United States, including those in national forests, but excluding lands acquired under the Appalachian Forest Act, approved March 1, 1911 (36 Stat. 961), and those in incorporated cities, towns, and villages and in national parks and monuments, those acquired under other Acts subsequent to February 25, 1920, and lands within the naval petroleum and oil-shale reserves, except as hereinafter provided, shall be subject to disposition in the form and manner provided by this chapter to citizens of the United States, or to associations of such citizens, or to any corporation organized under the laws of the United States, or of any State or Territory thereof, or in the case of coal, oil, oil shale, or gas, to municipalities. Citizens of another country, the laws, customs, or regulations of which deny similar or like privileges to citizens or corporations of this country, shall not by stock ownership, stock holding, or stock control own any interest in any lease acquired under the provisions of this chapter.

The term "oil" shall embrace all nongaseous hydrocarbon substances other than those substances leasable as coal, oil shale, or gilsonite (including all vein type solid hydrocarbons).

The term "combined hydrocarbon lease" shall refer to a lease issued in a special tar sand area pursuant to section 226 of this title after November 16, 1981.

The term "special tar sand area" means (1) an area designated by the Secretary of the Interior's orders of November 20, 1980 (45 FR 76800-76801) and January 21, 1981 (46 FR 6077-6078) as containing substantial deposits of tar sand.

The United States reserves the ownership of and the right to extract helium from all gas produced from lands leased or otherwise granted under the provisions of this chapter, under such rules and regulations as shall be prescribed by the Secretary of the Interior: *Provided further*, That in the extraction of helium from gas produced from such lands it shall be so extracted as to cause no substantial delay in the delivery of gas produced from the well to the purchaser thereof.

(Feb. 25, 1920, c. 85, § 1, 41 Stat. 437; Feb. 7, 1927, c. 66, § 5, 44 Stat. 1058; Aug. 8, 1946, c. 916, § 1, 60 Stat. 950; Sept. 2, 1960, Pub.L. 86-705, § 7(a), 74 Stat. 790; Nov. 16, 1981, Pub.L. 97-78, § 1(1), (4), 95 Stat. 1070.)

Historical Note

References to Text. The Appalachian Forest Act, referred to in the first undesignated paragraph, is Act Mar. 1, 1911, c. 186, 36 Stat. 961, as amended, also known as the "Weeks law" which is classified to sections 480, 500, 513 to 519, 521, 552 and 563 of Title 16, Conservation. For complete classification of this Act to the Code, see Short Title note set out under section 552 of Title 16 and Tables volume.

1981 Amendment. Pub.L. 97-78, in first par., substituted "gilsonite (including all vein type solid hydrocarbons)," for "native asphalt, solid and semisolid bitumen, and bituminous rock (including oil-impregnated rock or sands from which oil is recoverable only by special treatment after the deposit is mined or quarried)", and added, following first par., three paragraphs which defined "oil", "combined hydrocarbon lease", and "special tar sand area", respectively.

1960 Amendment. Pub.L. 86-705 included deposits of native asphalt, solid and semisolid bitumen, and bituminous rock.

1946 Amendment. Act Aug. 8, 1946, reenacted existing par., less three provisos, as first sentence of first par., inserting "potassium" after "sodium", which was also included in the 1927 amendment, and substituting provision for disposition of deposits "in incorporated cities, towns, and villages, and in national parks and monuments, those acquired under other Acts subsequent to February 25, 1920, and lands within the naval petroleum and oil shale reserves" for such disposition "in national parks, and in lands withdrawn or reserved for military or naval uses or purposes" and phrase "associations of such citizens" for "any association of such persons", former third proviso as second sentence of first par., former first proviso, as second par., inserting reservation of ownership provision and deleting "permitted" preceding "leased or otherwise granted"; and former second proviso as proviso in second par.

1927 Amendment. Act Feb. 7, 1927, included deposits of potassium.

Short Title of 1981 Amendment. Pub.L. 97-78, Nov. 16, 1981, 95 Stat. 1070, which generally made provision for a combined hydrocarbon lease through an amendment of this section and sections 182, 184, 209, 226, 241, 351, and 351 of this title and the enactment of provisions set out as a note under this section, is popularly known as the Combined Hydrocarbon Leasing Act of 1981.

Short Title of 1976 Amendment. Pub.L. 94-377, § 1(a), Aug. 4, 1976, 90 Stat. 1083, as amended by Pub.L. 95-554, § 8, Oct. 30, 1978, 92 Stat. 2075, provided that: "This Act [enacting sections 202a, 208-1 and 208-2 of this title, amending sections 184, 191, 201, 203, 207, 209 and 352 of this title, repealing sections 201-1 and 204 of this title, and enacting provisions set out as notes under sections 184, 201, 201-1, 203, and 204 of this title] may be cited as the 'Federal Coal Leasing Amendments Act of 1976'."

Short Title of 1960 Amendment. Section 1 of Pub.L. 86-705 provided that Pub.L. 86-705, which amended sections 181, 182, 184, 187a, 226, 226-1, 226-2, and 241 of this title, and enacted provisions set out as notes under sections 187a and 226 of this title may be cited as the "Mineral Leasing Act Revision of 1960".

Short Title of 1946 Amendment. Act Aug. 8, 1946, c. 916, 60 Stat. 950, as amended, which enacted sections 187a, 187b, 226c, and 236b of this title, amended sections 181, 184, 188, 193, 209, 225, 226, and 285 of this title, repealed sections 223, 226a, and 226b of this title, and enacted a provision set out as a note under section 181 of this title, is popularly known as the O'Mahoney Hatch Act.

Short Title of 1927 Amendment. Act Feb. 7, 1927, c. 66, 44 Stat. 1057, as amended, which enacted sections 281 to 287 of this title, amended sections 181 and 193 of this title, and repealed sections 141 to 152 of this title, is popularly known as the Potash Leasing Act of 1927 and the Potassium Act of 1927.

Short Title. This chapter is popularly known as the General Leasing Act, the Mineral Lands Leasing Act, the Mineral Lands Leasing Act of 1920, the Mineral Leasing Act, the Mineral Leasing Act of 1920, and the Oil Lands Leasing Act.

Saving ... and Pub.L. to be pla... etc., leased Act of title, ... out at Public

Sec... repeal... ing se... title, 209, 2... ing s... shall as it ... ment, law is any ... date ... state... gover... Act is ... to"

Cu... Amer... 97-78 ... "(1... 1981 ... shall

ATTACHMENT TWO
Mineral Leasing Act,
as enacted, Lands

Note 12

on the amount of such taxes, and there was nothing in the language or legislative history of this section to support an assertion that Congress intended to maximize and capture through royalties all "economic rents" from the mining of federal coal, and then to divide the proceeds with the state in accordance with formula. Commonwealth Edison Co. v. Montana, Mont.1981, 101 S.Ct. 2946, 453 U.S. 609, 69 L.Ed.2d 884, rehearing denied 102 S.Ct. 889, 453 U.S. 927, 69 L.Ed.2d 1023.

§ 190. Oath; requirement; form; blanks

All statements, representations or reports required by the Secretary of the Interior under this chapter shall be upon oath, unless otherwise specified by him, and in such form and upon such blanks as the Secretary of the Interior may require.

(Feb. 25, 1920, c. 85, § 33, 41 Stat. 450.)

Cross References

Foreign interests in leases of public lands made under this section, see section 7435 of Title 10, Armed Forces.

Jurisdiction and control over naval petroleum reserves covered by leases granted under this section, see section 7421 of Title 10.

Laws applicable to sections 275 and 285 of this title.

West's Federal Forms

Jurat, see § 1487.

§ 191. Disposition of moneys received

All money received from sales, bonuses, royalties including interest charges collected under the Federal Oil and Gas Royalty Management Act of 1982 [30 U.S.C.A. § 1701 et seq.], and rentals of the public lands under the provisions of this chapter and the Geothermal Steam Act of 1970 [30 U.S.C.A. § 1001 et seq.], notwithstanding the provisions of section 20 thereof [30 U.S.C.A. § 1019], shall be paid into the Treasury of the United States; 50 per centum thereof shall be paid by the Secretary of the Treasury to the State other than Alaska within the boundaries of which the leased lands or deposits are or were located; said moneys paid to any of such States on or after January 1, 1976, to be used by such State and its subdivisions, as the legislature of the State may direct giving priority to those subdivisions of the State socially or economically impacted by development of minerals leased under this chapter, for (i) planning, (ii) construction and maintenance of public facilities, and (iii) provision of public service; and excepting those from Alaska, 40 per centum thereof shall be paid into, reserved, appropriated, as part of the reclamation fund created by the Act of Congress known as the Reclamation Act, approved June 17, 1902, and of those from Alaska, 90 per centum thereof shall be paid to the State of Alaska for disposition by the legislature thereof: *Provided*, That all moneys which may accrue to the United States under the provisions of this chapter and the Geothermal Steam Act of 1970 from lands within the naval petroleum reserves shall be deposited in the Treasury as "miscellaneous receipts", as provided by section 7433(b) of Title 10. All moneys received under the provisions of this chapter and the Geothermal Steam Act of 1970 not otherwise disposed of by this section shall be credited to miscellaneous receipts. Payments to States under this section with respect to any moneys received by the United States, shall be made not later than the last business day of the month in which such moneys are warranted by the United States Treasury to the Secretary as having been received, except for any portion of such moneys which is under challenge and placed in a suspense account pending resolution of a dispute. Such warrants shall be issued by the United States Treasury not later than 10 days after receipt of such moneys by the Treasury. Moneys placed in a suspense account which are determined to be payable to a State shall be made not later than the last business day of the month in which such dispute is resolved. Any such amount placed in a suspense account pending resolution shall bear interest until the dispute is resolved.

(Feb. 25, 1920, c. 85, § 35, 41 Stat. 450; May 27, 1947, c. 83, 61 Stat. 119; Aug. 3, 1950, c. 527, 64 Stat. 402; July 10, 1957, Pub.L. 85-88, § 2, 71 Stat. 282; July 7, 1958, Pub.L. 85-508, §§ 6(k), 28(b), 72 Stat. 343, 351; Apr. 21, 1976, Pub.L. 94-273, § 6(2), 90 Stat. 377; Aug. 4, 1976, Pub.L. 94-377, § 9, 90 Stat. 1090; Sept. 28, 1976, Pub.L. 94-422, Title III, § 301, 90 Stat. 1323; Oct. 21, 1976, Pub.L. 94-579, Title III, § 317(a), 90 Stat. 2770; Jan. 12, 1983, Pub.L. 97-451, Title I, § 104(a), 111(g), 96 Stat. 2451, 2456.)

Historical Note

References in Text. The Federal Oil and Gas Royalty Management Act of 1982, referred to in text, is Pub.L. 97-451, Jan. 12, 1983, 96 Stat. 2447, which is classified generally to chapter 29 (section 1701 et seq.) of this title. For complete classification of this Act to the Code, see Short Title note set out under section 1701 of this title and Tables volume.

The Geothermal Steam Act of 1970, referred to in text, is Pub.L. 91-581, Dec. 24, 1970, 84 Stat. 1566, which is classified principally to chapter 23 (section 1001 et seq.) of this title. For complete classification of this Act to the Code, see Short Title note set out under section 1001 of this title and Tables volume.

The Reclamation Act, referred to in text, is Act June 17, 1902, c. 1093, 32 Stat. 388, as amended, which is classified generally to chapter 12 (section 371 et seq.) of Title 43, Public Lands. For complete classification of this Act to the Code, see Short Title note set out under section 371 of Title 43 and Tables volume.

Codification. "Section 7433(b) of Title 10" was substituted for "the Act of June 4, 1920 (41 Stat. 813), as amended June 30, 1938 (52 Stat. 1252)", which was classified to section 524 of former Title 34, Navy, on authority of Act Aug. 10, 1956, c. 1041, § 49(b), 70A Stat. 640, the first section of which enacted Title 10, Armed Forces.

Provisions of this section which authorized the payment of monies to the Territory of Alaska were omitted as superseded by the provisions authorizing the payment of monies to the State of Alaska.

1983 Amendment. Pub.L. 97-451, § 104(a), struck out "as soon as practicable after March 31 and September 30 of each year" after "Secretary of the Treasury" and "of those from Alaska", and added at the end provisions directing that payments to States be made not later than the last business day of the month in which such moneys are warranted by the United States Treasury to the Secretary as having been received, that warrants be issued by the Treasury not later than 10 days after receipt of the money by the Treasury, that moneys placed in a suspense account which are determined to be payable to a State be made not later than the last business day of the month in which a dispute is resolved, and that amounts placed in a suspense account pending resolution bear interest until the dispute is resolved.

Pub.L. 97-451, § 111(g), inserted reference to interest charges collected under the Federal Oil and Gas Royalty Management Act of 1982.

1976 Amendment. Pub.L. 94-579 substituted provision setting forth determination of

ATTACHMENT TWO, cont.
Mineral Leasing Act,
revenue disposition

ATTACHMENT THREE

Attorney General's opinion on Alaska's 90% revenue entitlement in ANWR

MEMORANDUM

TO: Honorable Bill Sheffield
Governor
State of Alaska

DATE: April 28, 1986

FILE NO: 663-86-0339

TELEPHONE NO: 465-3600

Harold M. Brown
Attorney General

FROM: By: G. Thomas Koester GTK
Assistant Attorney General
Department of Law

SUBJECT: ANWR issues -- federal 90 percent revenue sharing

As part of an overall analysis of potential oil and gas leasing in the Arctic National Wildlife Refuge ("ANWR"), you asked this department to prepare a preliminary analysis of two specific issues: (1) the effect of a possible land trade on the state's 90 percent royalty share of oil and gas production from federal lands in wildlife refuges; and (2) legal arguments which might be raised with respect to possible congressional consideration of a reduction in the state's current 90 percent royalty share.

In brief, we believe (1) a land trade would eliminate the state's 90 percent royalty share of production from the lands traded by the United States to third parties and probably would result in the state receiving no royalty from oil and gas produced on the exchange lands received by the federal government, and (2) there are both legal and policy arguments the state can make against a congressional reduction of the state's royalty share, but we cannot be certain that they would prevail.

I. Background

When the United States issues oil and gas leases for lands within wildlife refuges, distribution of the revenues received by the United States from that leasing depends on whether the refuge lands from which the revenues are derived are acquired lands or reserved public domain lands. "[A]cquired lands are those granted or sold to the United States by a State or citizen and public domain lands were usually never in state or private ownership." Wallis v. Pan American Petroleum Corp., 384 U.S. 63, 65 n.2 (1966).

Oil and gas leasing on acquired lands is governed by the Mineral Leasing Act for Acquired Lands, 30 U.S.C. §§ 351 et seq. Under that Act, revenues from oil and gas leases on acquired lands are to be "distributed in the same manner as prescribed for other receipts from the lands affected by the lease." 30 U.S.C. § 355. As applied to wildlife refuges created from acquired lands, this provision requires that oil and gas revenues be distributed according to the formula contained in the Wildlife

Refuge Revenue Sharing Act, 16 U.S.C. § 715s, which provides that 75 percent of the revenues go to the federal government and 25 percent of the revenues go to the county in which the wildlife refuge is located.

Oil and gas leasing on public domain lands reserved for wildlife refuge purposes, on the other hand, is governed by the Mineral Leasing Act of 1920, 30 U.S.C. §§ 191 et seq. Under that Act, the state is entitled to 90 percent of the revenues from such lands in refuges in Alaska and 10 percent is paid into the United States Treasury. */ See generally Watt v. Alaska, 451 U.S. 259 (1981).

Congress extended the Mineral Leasing Act distribution formula for revenues from public domain lands, including reserved public domain lands in wildlife refuges, to Alaska in section 28(b) of the Alaska Statehood Act. Congress considered this one of the "major provisions" of the Act. H.R. Rep. No. 624, 85th Cong., 1st Sess. 3 (June 25, 1957) ("House Report"). Congress did so, in large part, because so much of Alaska was "tied up in the status of Federal reservations and withdrawals for various purposes," stating that this "practice has been carried to extreme lengths in Alaska." House Report at 7. One result of that "unhealthy situation," id. at 8, is that substantial mineral leasing revenues in Alaska are derived from public lands in federal withdrawals and reservations, including wildlife refuges, a situation unique to Alaska. See Watt, 451 U.S. at 261, n.1.

The Mineral Leasing Act, and its revenue distribution formula under which 90 percent of the revenues are dedicated to the state, represented a historic tradeoff in the history of public land law. In enacting it, Congress terminated its historic policy of disposing of the public lands. Instead, it determined

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*/ States other than Alaska receive only 50 percent of public domain land mineral revenues. However, an additional 40 percent of those revenues are paid into the Reclamation Fund established under the Reclamation Act of 1902. Those funds, in turn, are used to fund reclamation projects in those states. Alaska is not covered by the Reclamation Act and receives no benefits under it. Congress considered it only fair that the additional 40 percent share of public domain land revenues be paid to Alaska "in return for Alaska not being covered by the Reclamation Act of 1902." See H.R. Rep. No. 624 (to accompany H.R. 7999), 85th Cong., 1st Sess. 23 (June 25, 1957).

that the federal government should retain those public lands remaining in the states, but should use most of the mineral revenues from those lands for the states' benefit. The 90-10 revenue distribution formula in the Mineral Leasing Act "was to compensate for the states' inability to tax the lands to pay for governmental services." Fairfax and Yale, The Financial Interest of Western States in Non-tax Revenues from the Federal Public Lands 19, published by the Western Legislative Conference, Council of State Governments, and the Lincoln Institute of Land Policy (1985).

In contrast, the Wildlife Refuge Revenue Sharing Act, under which 25 percent of certain wildlife refuge revenues are shared with the counties in which the refuges lie, was intended to reduce local opposition to federal acquisition of land for refuge purposes. The revenue sharing formula was intended to compensate localities for the loss of property tax revenue when the federal government acquired the land and, as a result, it was removed from the local tax roles. As a general proposition, this rationale would not fit federal acquisition of large tracts of either state land or undeveloped Native corporation land, neither of which currently are subject to local property taxes. See Alaska Const. art. IX, § 4; 43 U.S.C. § 1620(d).

Nonetheless, the distinction between acquired land in wildlife refuges and public domain land reserved for refuge purposes is central to resolution of the first question you asked us to discuss. The fact that Congress extended the Mineral Leasing Act to Alaska in the Statehood Act bears directly on your second question.

II. The Effect of a Land Trade on the State's 90 Percent Royalty Share

We understand that the Department of the Interior is contemplating certain land trades under which federal lands in ANWR would be exchanged for privately-owned Native corporation lands constituting inholdings in other federal conservation system units in Alaska. If such exchanges take place, and the exchanged ANWR lands are offered for oil and gas leasing, the Native corporations would be the lessors entitled to receive the revenues. The revenues would not be received by the federal government as result of leasing under the Mineral Leasing Act, and those revenues would not be subject to the Mineral Leasing Act's 90-10 distribution formula. Accordingly, there would be no basis for the state to claim any portion of the revenues derived. In other words, land trades would totally eliminate the state's 90 percent royalty share from such ANWR lands.

In addition, it should be noted that the state would have no right to any federal oil and gas revenues derived from the lands obtained by the United States from the Native corporations. Those lands would be acquired lands, not reserved public domain lands, and the revenue distribution from federal oil and gas leases on those lands would be governed by the Mineral Leasing Act for Acquired Lands. As noted earlier, revenues from oil and gas leasing of acquired lands in wildlife refuges are governed by Wildlife Refuge Revenue Sharing Act, which provides that 25 percent of any such revenues are to go to the county in which the refuge is located and 75 percent to the federal government. None of the revenues go to the state.

The state could argue that this should not be the result. The rationale for the Wildlife Refuge Revenue Sharing Act distribution scheme -- i.e., compensating municipalities for lost property tax receipts -- does not apply to undeveloped Native corporation lands, which are not subject to local property taxes under the Alaska Native Claims Settlement Act (at least until 1991). See 43 U.S.C. § 1620(d). Moreover, the state can argue that the United States cannot eliminate its 90 percent share of revenues from reserved public domain lands by trading them on the ground that doing so would violate the solemn compact memorialized in the Alaska Statehood Act.

However, we believe both arguments probably would be unavailing in court. The first argument appears to be more of a policy argument than a legal argument, more appropriately directed to Congress and not the courts. The second argument would require the court to find that the extension of the Mineral Leasing Act to Alaska also constituted an implied promise not to convey federal lands to third parties, which simply is not supported by the legislative history of section 28(b) of the Statehood Act.

III. Congressional Reduction of the State's 90 Percent Royalty Share

As noted in section I above, Congress extended the Mineral Leasing Act distribution formula for revenues from public domain lands, including reserved public domain lands in wildlife refuges, to Alaska in section 28(b) of the Alaska Statehood Act. Alaska accepted the provisions of the Statehood Act in article XII, section 13, of the Alaska Constitution. Provisions of a Statehood Act become obligatory on the United States upon acceptance of those provisions by the new state. See, e.g., Cooper v. Roberts, 59 U.S. (18 How.) 173 (1856); see generally 1961 Op. Att'y Gen. No. 3, at 3-5 (April 2). Particularly in light of

Congress' characterization of the extension of the Mineral Leasing Act to Alaska as one of the "major provisions" of the Alaska Statehood Act, the state has a very strong argument that continued application of the Mineral Leasing Act's distribution formula to oil and gas leasing revenues from reserved federal public domain lands in ANWR is required as part of Alaska's statehood compact (at least as long as those lands remain federally-owned).

At the same time, we must point out that the United States might successfully argue that Congress has the plenary authority to modify the distribution formula for oil and gas revenues from ANWR. In Watt v. Alaska, Justice Stevens (concurring in the Court's decision that the Mineral Leasing Act's 90-10 distribution formula applied to oil and gas revenues from the Kenai National Moose Range) stated:

> The question of how to divide the revenues from oil and gas leases on public lands in the Kenai Peninsula is clearly a matter for Congress to decide. If Congress is displeased with the decisions of this Court and the Court of Appeals [i.e., the decisions at Alaska is entitled to 90 percent of the revenues], it may promptly reverse them by revising the relevant statutes.

451 U.S. at 274. We did not make a statehood compact argument in that case and it was not before the Court. Nonetheless, Justice Stevens' comment undoubtedly will be cited by the United States in the event Congress changes the current 90-10 distribution formula in the Mineral Leasing Act or establishes a different distribution formula specifically for revenues from ANWR.

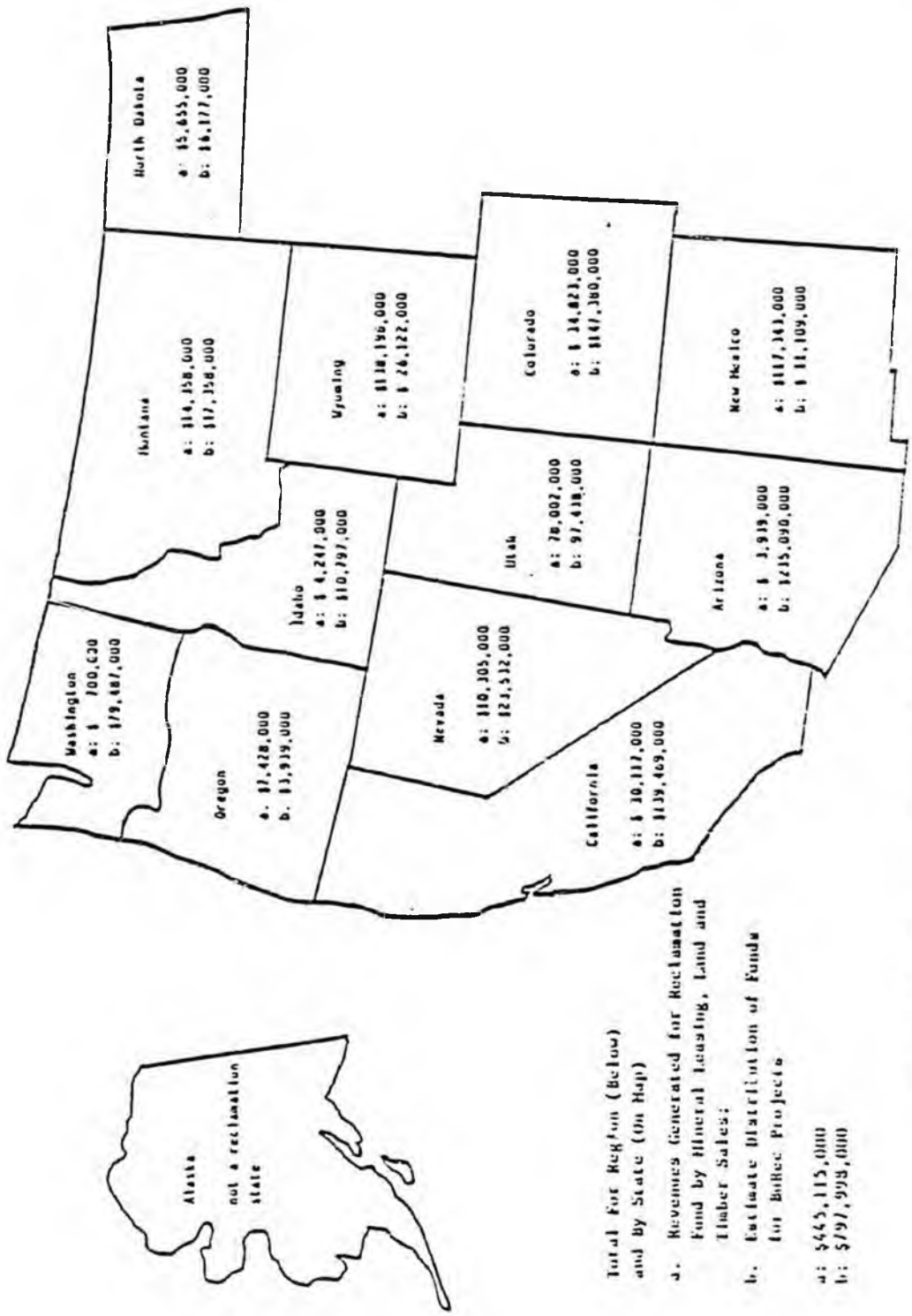
We hope this responds to your request. If we can provide additional information, please contact us at your convenience.

GTK:dlm
cc: John Katz
Office of the Governor
Washington, D.C.

ATTACHMENT FOUR

Reclamation funding for the western states, 1982

From Fairfax and Yale, 1985



Total For Region (Below) and By State (On Map)

a. Revenues Generated for Reclamation Fund by Mineral Leasing, Land and Timber Sales:

b. Estimate Distribution of Funds for BuRec Projects

a: $445,115,000
b: $791,999,000

Figure 11. Revenues Generated for Reclamation Fund, and Estimated Distribution of Funds for Bureau of Reclamation Projects (1982)

OUTLINE OF TESTIMONY

BY

MARK A. FRAKER
STANDARD ALASKA PRODUCTION COMPANY
ANCHORAGE, ALASKA

BEFORE

HOUSE RESOURCES COMMITTEE

FEBRUARY 19, 1987

BASIS OF IMPACT ASSESSMENT

- 2-MILE EXCLUSION AROUND ALL ROADS, FACILITIES, ETC.
- USED TO CALCULATE 'HABITAT LOSS'
- 'HABITAT LOSS' USED TO PREDICT 20-40% POPULATION DECREASE.

WHAT IS BASIS OF 2-MILE EXCLUSION?

- STUDY BY DAU AND CAMERON (ADF&G) IN MILNE POINT AREA
- 4 YEARS BEFORE ROAD (1978-1981)
- 4 YEARS AFTER ROAD (1982-1985)
- FWS MISINTERPRETED POINT AT WHICH LINES CROSSED ($\simeq$3KM $\simeq$2 MILE) AS EXCLUSION DISTANCE (FIG. 1)

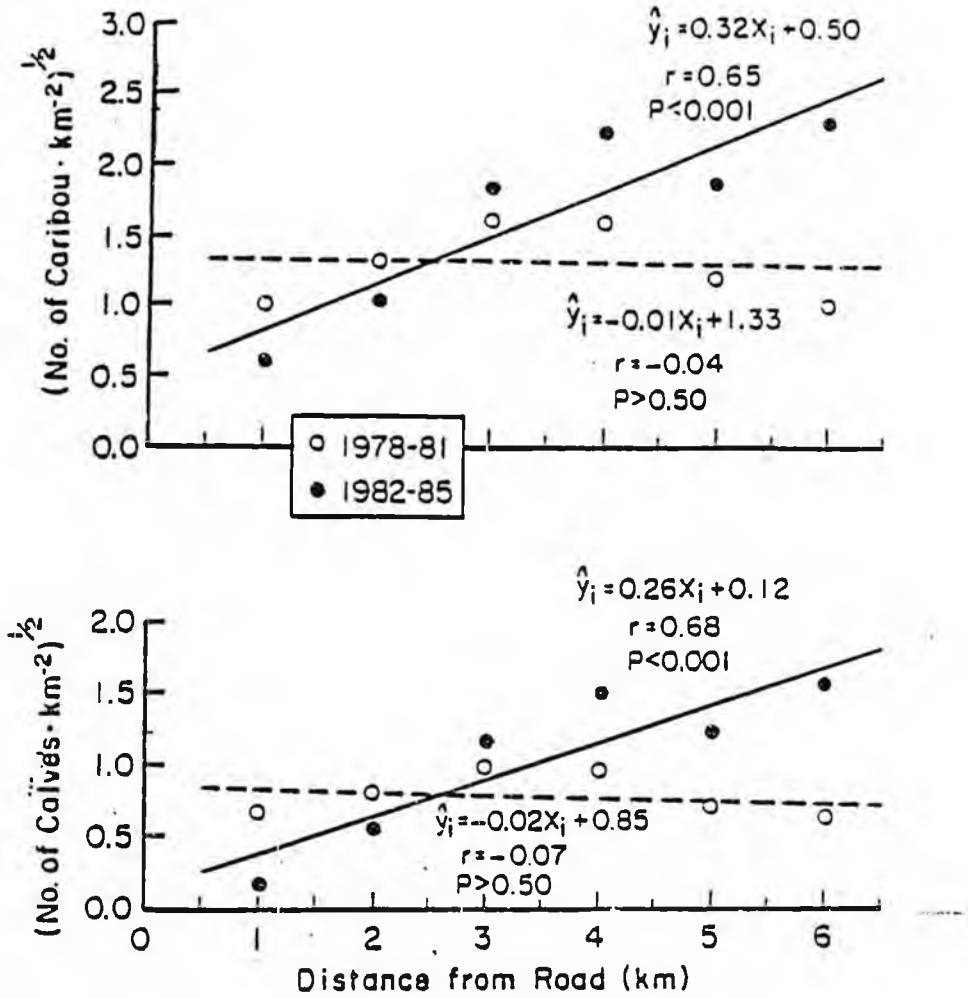


Figure 1. Graphs from Dau and Ca. eron (1985) showing relationship between the square root of the density of caribou to distance from the road leading to the Milne Point oilfield. Data from 1978-1981 were collected prior to construction of the road; data from 198?-1985 were collected after the road had been built. Note that the data points shown are square roots of the four-year means. Values for individual years have not been made available by the authors and consequently, the annual variability is unknown.

THE MILNE POINT ROAD/CARIBOU STUDY

- PLOTTED DENSITY OF CALVING CARIBOU BEFORE AND AFTER ROAD (FIG. 1)
- USED SQUARE ROOT TRANSFORMED DATA
- APPEARS THAT DENSITY WAS SAME THROUGHOUT AREA EVEN BEFORE ROAD (1978-1981)
- APPEARS THAT AFTER ROAD CONSTRUCTION (1982-1985) DENSITY WAS LOW NEAR ROAD, HIGH AWAY FROM ROAD
- ANNUAL DIFFERENCES IN TOTAL CARIBOU NUMBERS NOT SHOWN
- ANNUAL DIFFERENCES IN SNOW AND WEATHER CONDITIONS NOT REPORTED
- AUTHORS DID NOT CLAIM EXCLUSION NEAR ROAD
- FWS MISAPPLIED STUDY

RE-EXAMINATION OF MILNE POINT STUDY

- PLOTTED DENSITY OF CALVING CARIBOU BEFORE AND AFTER ROAD (FIG. 2)
- DATA NOT TRANSFORMED
- RESULTS:
  1. INCREASING DENSITY OF CARIBOU AWAY FROM ROADWAY BEFORE AND AFTER ROAD CONSTRUCTION TO DISTANCE OF 3KM (2 MI)
  2. HIGHER DENSITY 3-6 KM (2-4 MI) AFTER ROAD THAN BEFORE
  3. ABOUT 2X AS MANY CARIBOU IN STUDY AREA AFTER ROAD THAN BEFORE
- STATISTICALLY EXAMINED (WITH THE AUTHORS) DATA AT EACH DISTANCE INTERVAL BEFORE AND AFTER ROAD CONSTRUCTION
- RESULTS:
  1. STATISTICALLY SIGNIFICANT DIFFERENCES ($P < 0.05$) IDENTIFIED IN THE 0-1 KM AND 5-6 KM INTERVALS
  2. NO STATISTICALLY SIGNIFICANT DIFFERENCES IN THE 1-2 KM, 2-3 KM, 3-4 KM AND 4-5 KM INTERVALS

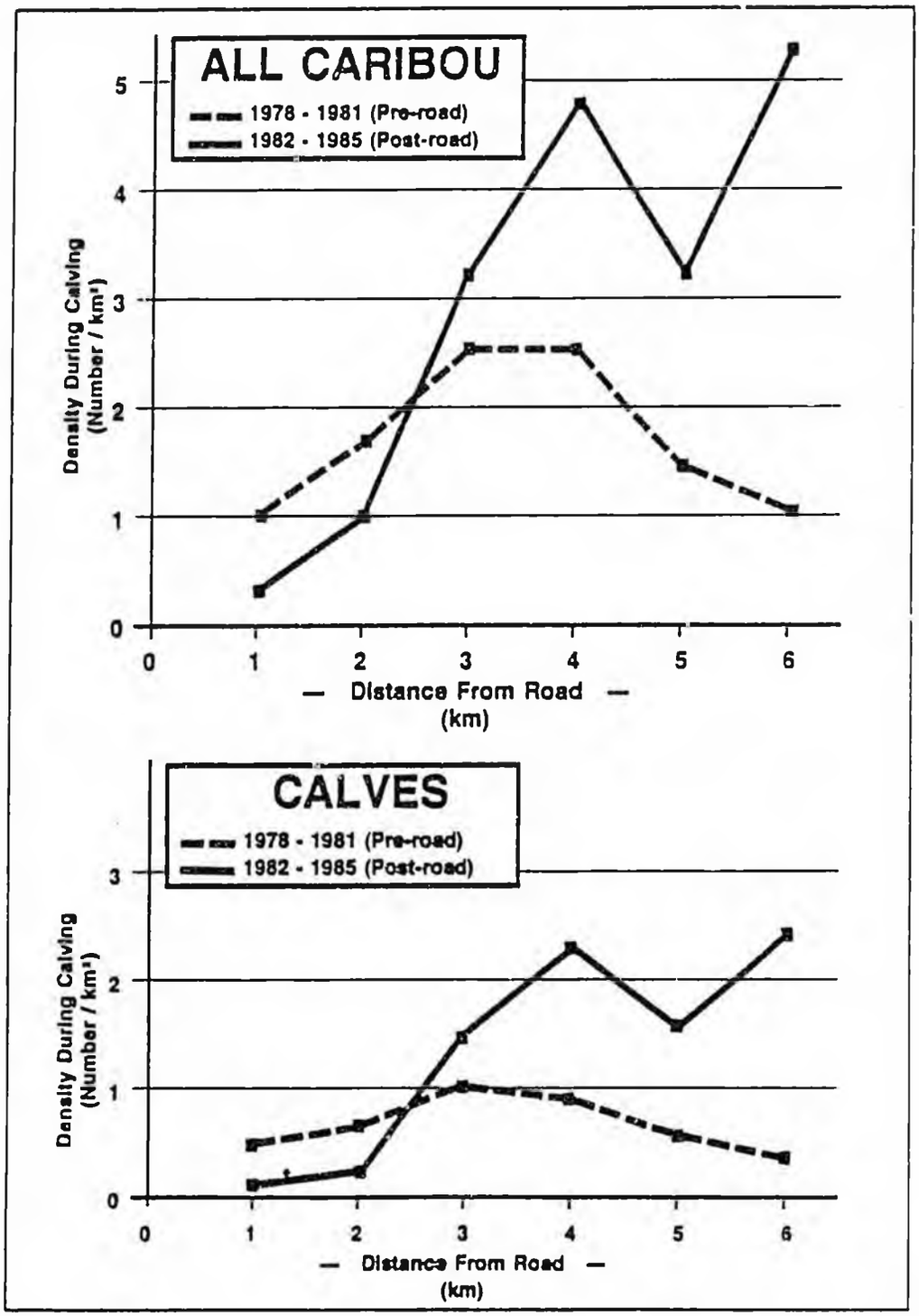


Figure 2. A replotting of the data in Figure 1 to show approximate actual values. Because the authors have not made the original data available, values were obtained by reading the square roots in Figure 1 and squaring them. Shown are the four-year means; variances are not known. [Note added in proof: R. Cameron, Alaska Department of Fish and Game, has provided the actual four-year means. They are not significantly different from those shown in Figure 2.]

CONCLUSIONS

- NO 2-MILE EXCLUSION ZONE
- PARTIAL AVOIDANCE WITHIN 0-1 KM OF ROAD; NOT COMPLETE DISPLACEMENT
- NO EVIDENCE THAT SMALL AMOUNT OF DISPLACEMENT IS HARMFUL TO CARIBOU
- DISTURBANCE CAN BE MINIMIZED BY REGULATING OPERATIONS WHEN CARIBOU ARE PRESENT

The following information is exerpted from "Comments of the Standard Oil Company on the Draft Legislative Environmental Impact Statement for the Arctic National Wildlife Refuge, Alaska, Coastal Plain Resource Assessment" dated 6 February 1987.

G. Response of caribou to oilfield development

The draft report's analysis of potential effects of development on calving caribou are based primarily on conclusions attributed to a study comparing densities of caribou cows and calves before and after construction of an oilfield road on the Arctic Coastal Plain: "Dau and Cameron (1985), in what may be the most systematic study of caribou displacement by oil development, reported that maternal groups showed measurable declines in habitat use within approximately 2 miles on either side of the Milne Point road in the central Alaskan arctic' (p. 107, col. 2, par. 2). However, examination of the cited paper shows that Dau and Cameron (1985) did not refer to decreased habitat use within 2 miles of the Milne Point road, and that their study is so confounded by uncontrolled variables that it is quite impossible to make any conclusive interpretation of their results.

Figure 5 presents graphs from the Dau and Cameron paper showing the relationship between the square root of the density of all caribou and also of calves only, and distance from the road. The data points shown are the means of four years; no information about year-to-year variability is given. The data were collected by helicopter surveys conducted during the four years prior to road construction (1978-1981) and the four years following road construction (1982-1985). The intent, of course, was that the first four years' data would serve as a control against which to compare caribou distribution after the road was in place and development had begun.

Use of the square root transformation and of calculated regression lines (Fig. 5) gives the impression that caribou density was evenly distributed within 6 km of the alignment prior to construction of the road, but afterwards was low near the road and high away from it. If we take the graphs in Fig. 5 at face value, an effect relating to the presence of the road appears to continue out to at least 6 km. However, removing the square root transformation gives quite a different picture (Fig. 6). Examination of the non-transformed data leads to four observations:

1. In both four-year periods, the data from 1-3 km show the same trend, i.e. increasing density away from the road alignment. The fact that this trend existed both before and after the road was constructed suggests that some other factor (e.g., topography) may have influenced the distribution of caribou.

2. The densities shown for the 1-3 km interval are the four-year means; no information on year-to-year variability is given. Assuming that there was a normal amount of variability, it is almost certain that the data from both four-year periods overlap and are not statistically different.

3. The real differences in the data sets appear to be in the 4-6 km interval.

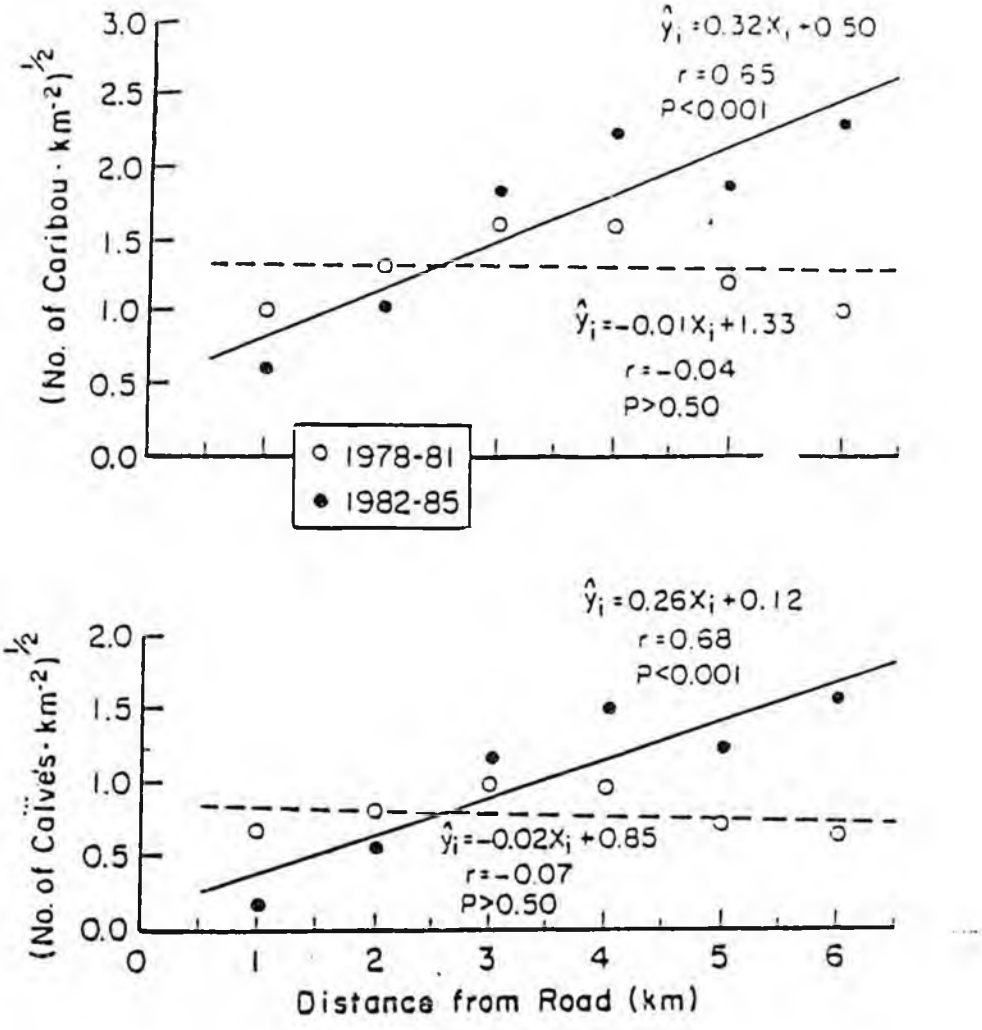


Figure 5. Graphs from Dau and Cameron (1985) showing relationship between the square root of the density of caribou to distance from the road leading to the Milne Point oilfield. Data from 1978-1981 were collected prior to construction of the road; data from 1982-1985 were collected after the road had been built. Note that the data points shown are square roots of the four-year means. Values for individual years have not been made available by the authors and consequently, the annual variability is unknown.

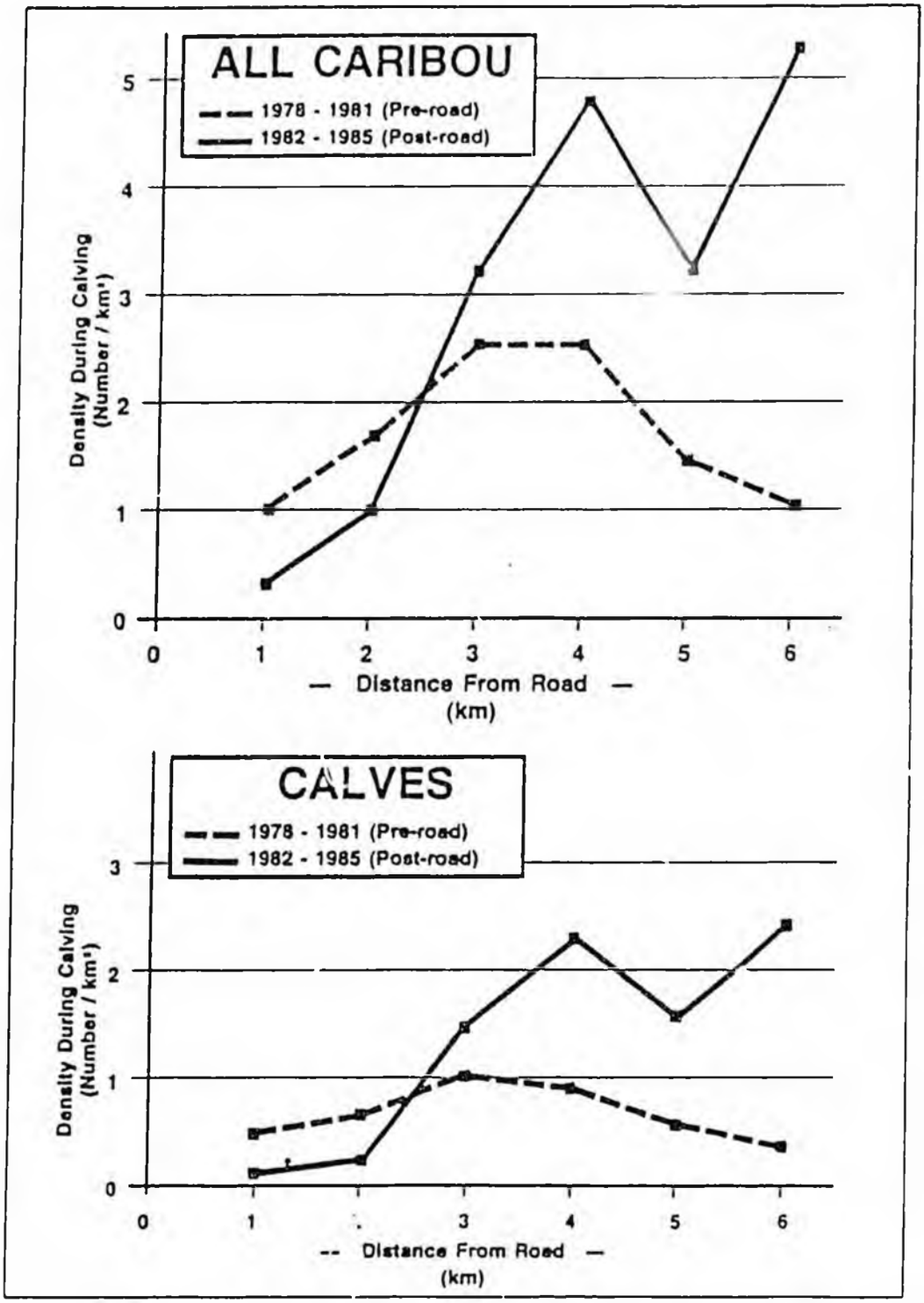


Figure 6. A replotting of the data in Figure 5 to show approximate actual values. Because the authors have not made the original data available, values were obtained by reading the square roots in Figure 5 and squaring them. Shown are the four-year means; variances are not known. [Note added in proof: R. Cameron, Alaska Department of Fish and Game, has provided the actual four-year means. They are not significantly different from those shown in Figure 6.]

4. From inspection of the curves, it is apparent that there were roughly twice as many caribou in the study area (i.e., the 1-6 km zone) following road construction than before.

Finally there are two other factors that confound interpretation of the Dau and Cameron (1985) data. The authors apparently assumed that the density of calving caribou would be the same in both four-year periods. This implies an assumption on their part that 1) the population was constant in size, 2) that the distribution was essentially the same, and 3) that snowmelt and weather conditions were practically identical. In fact, the Central Arctic herd roughly trebled (i.e., from 5,000 to 15,000) in size during the period over which the study took place, and snowmelt and weather conditions differed between years, as did the distribution of calving caribou.

What explains the pattern seen in Figure 6? It is impossible to know. Dau and Cameron's (1985) study is too unclear to permit a conclusion to be drawn, and there is no scientific basis to conclude from their study that any displacement of caribou resulted from the road and associated activity. If the numbers out to 6 km are compared, it is clear that there were about twice as many caribou in the area after the road was constructed than there were before. Clearly, it is inappropriate for the draft report to base predictions of potential caribou displacement from the "core calving area" on the Dau and Cameron study.

During the period 1981-1986 surveys of the calving distribution of the Central Arctic Herd have been conducted (RRCS, 1985; R.M. Jakimchuk 1986, pers. comm.). Figure 7 shows areas of major usuage by calving caribou. It is clear that although calving densities may be lower immediately adjacent to areas of active oilfield operations, caribou continue to calve in the region where they have traditionally done so.

The most important point is that whatever the exact response of the Central Arctic Herd to oilfield activities, the herd has grown rapidly. Clearly, and contrary to many earlier predictions, whatever the effect of oilfield activities on individual caribou, there have been no detectable population-level effects. The herd has more than quadrupled in size since development began in the early 1970s. Nor is this situation unique: several other herds are thriving in the presence of considerable human activity (Bergerud et al. 1984). The only effect of human activity that has clearly been capable of seriously lowering caribou numbers is direct mortality from excessive hunting.

[It should be recognized that traffic in the 1002 area will be appropriately controlled during periods when calving animals are present near oilfield developments, and that construction will be timed to avoid periods when calving and post-calving caribou are present.]

[NOTE: On 13 February 1987, a meeting of Petroleum Industry and Alaska Department of Fish and Game biologists was held to analyse further the data collected by Dau and Cameron (1985). A t-test applied to the data at various distance intervals away from the road showed statistically significant ($p < 0.05$) differences in the 0-1 km and 5-6 km intervals; differences in the other intervals were not statistically significant. (Note added February 18, 1987)]

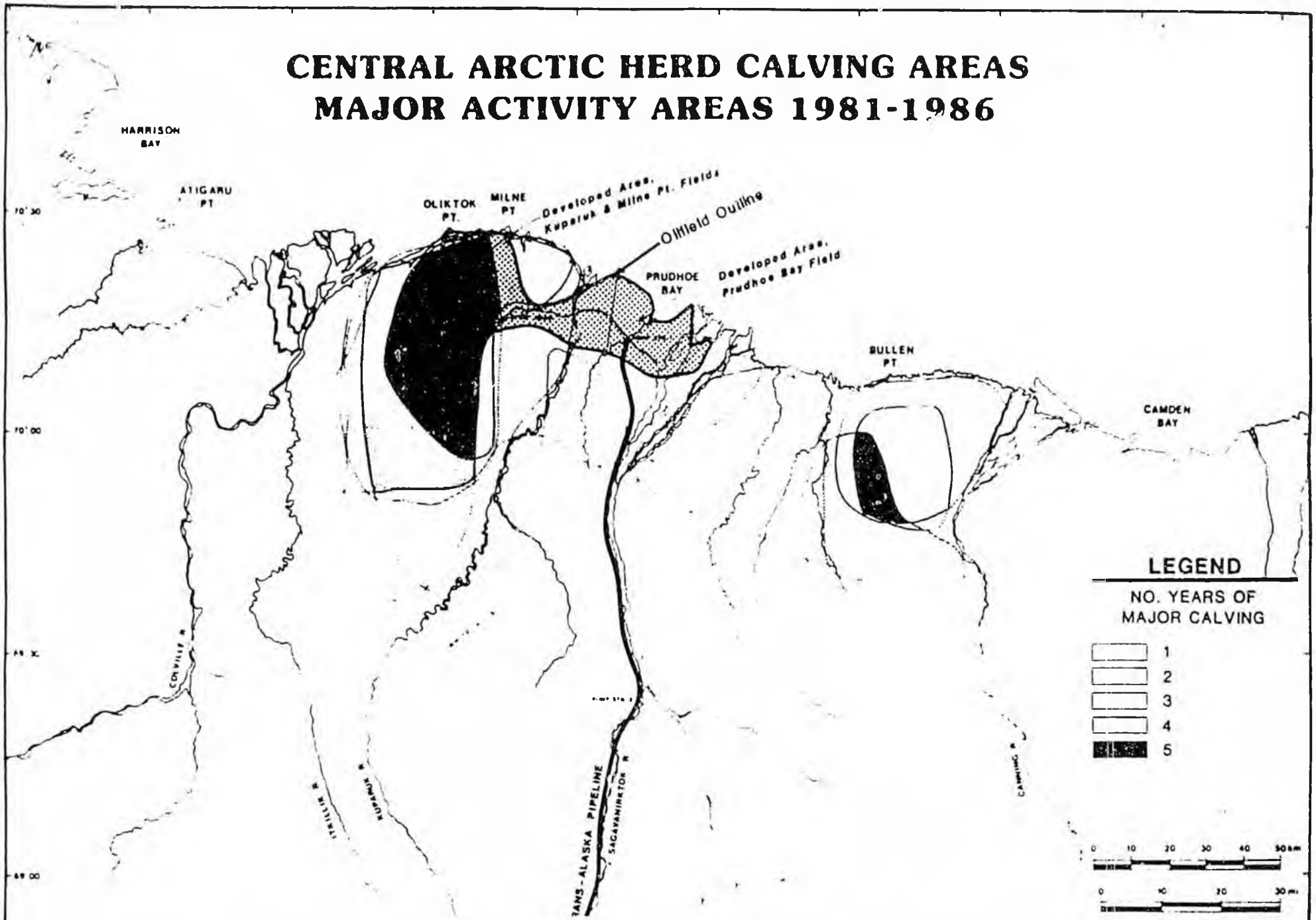


Figure 7. Locations of areas of major calving activity of the Central Arctic Herd, 1981-1986. Note the presence of calving caribou within the general area of the Prudhoe Bay, Kuparuk, and Milne Point oilfields. The Prudhoe Bay Oilfield has never been known to be used often by calving caribou, even prior to development. [Based on data provided by RRCS (1985) and Jakimchuk 1986, pers. comm.].

EL - ANWR environmental

Trustees for ALASKA

TRUSTEES FOR ALASKA'S BRIEFING PAPER ON

THE ENVIRONMENTAL RISKS OF OIL AND GAS DEVELOPMENT

ON THE NORTH SLOPE OF ALASKA

BEFORE THE

SUBCOMMITTEE ON FISHERIES AND WILDLIFE CONSERVATION

AND THE ENVIRONMENT

OF THE

HOUSE COMMITTEE ON MERCHANT MARINE AND FISHERIES

July 30, 1987

Robert W. Adler

Executive Director

725 Christensen Drive, Suite 4 Anchorage, Alaska 99501 (907) 276-1443

INTRODUCTION

Mr. Chairman and Members of this Committee:

My name is Bob Adler. I am the Executive Director of Trustees for Alaska, a nonprofit, public interest environmental law firm based in Anchorage, Alaska. Trustees for Alaska has had a long-standing interest and involvement in issues related to the Arctic National Wildlife Refuge, and in oil and gas development in Alaska in general.

Trustees for Alaska's particular interest in the Arctic National Wildlife Refuge dates back to the passage of section 1002 of the Alaska National Interest Lands Conservation Act in 1980 -- the provision that set forth the chain of events that brings the Arctic National Wildlife Refuge issue before this Committee today. Unfortunately, Trustees for Alaska has had to file four separate lawsuits to ensure that the requirements of section 1002 were met. First, in Trustees for Alaska v. Robbins, we ensured, by consent decree, that the U.S. Fish and Wildlife Service properly regulated helicopter and other air traffic to protect the rich wildlife populations of this area during the section 1002 exploration program. Later, in Trustees for Alaska v. Watt, we sued to prevent the Interior Department from transfering responsibility for the section 1002 program from the Fish and Wildlife Service to the U.S Geological Survey. The public was afforded an opportunity to comment on a draft of the Secretary's section 1002 report only as a result of our victory in Trustees for Alaska v. Hodel, which forced the Department to comply with the National Environmental Policy Act. Most recently, in Trustees for Alaska v. Horn, we challenged the Interior Department's ongoing efforts to negotiate massive land exchanges involving the section 1002 area before the Congress reaches its decision on this important issue. We are currently awaiting a preliminary decision in this case from the Federal District Court in Anchorage.

In addition to these litigation efforts, Trustees for Alaska joined with the Natural Resources Defense Council (NRDC) in a comprehensive evaluation of the following three issues:

1. The environmental consequences of oil and gas development in the arctic;

2. The adequacy of existing environmental laws and regulations to protect the fragile arctic environment from these impacts; and

3. The oil industry's record of compliance with these environmental laws and regulations.

While the results of this study will be presented and documented in

far greater detail in a report that will be published later this year, I will be discussing many of the major findings of this report today.

I have been asked to brief the Committee on two issues -- the environmental impacts of existing arctic oil and gas developments, with particular emphasis on the Prudhoe Bay area which was the focus of the Trustees/NRDC study; and the risks that we see to the biological and physical environment of the Arctic National Wildlife Refuge from oil and gas development. Before addressing these specific issues, however, I would like to put them in the context of the main issue that must be faced by this Committee: whether to allow oil and gas development in the Arctic National Wildlife Refuge, or to designate this area as a unit of the National Wilderness Preservation System.

The issues that must be addressed by this Committee are complex. Indeed, they are far more complex than was recognized in the Interior Department's section 1002 report. Section 1002 required the Interior Department both to catalogue the fish and wildlife and other natural resources of the coastal plain, and to provide a detailed evaluation of the effects of oil and gas development on those resources. Interior spent the vast majority of its research effort in the Refuge, where there is currently no oil and gas development, and virtually no time at Prudhoe Bay where the effects of oil and gas development in an arctic environment can be evaluated. As a result, the report does a fair job of assessing resources, but an atrocious job of weighing potential impacts from such long-term chronic byproducts of major oil and gas production as air pollution, water pollution, and waste disposal. The Congressional Research Service reached the same conclusion in its May 22, 1987 critique of the report:

> . . . while the compilation of background biological data surpasses all previous efforts in the field, the environmental analysis does not relate impacts to the statutory mandates of ANWR.

In short, the section 1002 report does not do what Congress asked in 1980.

The ANWR debate boils down to a complex value judgment. Is it more important for the nation to preserve the last protected stretch of arctic wilderness in Alaska which is not open to oil and gas development, or is it more important to explore every promising geological prospect that may contribute significantly to the nation's energy needs? The merits of the wilderness and energy security arguments will be addressed at length in other hearings of this Committee. It is essential, however, that the decision be made with a complete knowledge of the real risks and effects of oil and gas development in arctic Alaska, and in particular in the coastal plain of the Arctic National Wildlife Refuge. These real risks and effects were not addressed in the section 1002 report.

As a result of Interior's lack of detailed attention to the "on-the-ground" impacts of a major oil and gas development complex in an arctic environment, the oil industry and other proponents of development in the ANWR have perpetuated the following myth: We can have both oil and an essentially unharmed Arctic National Wildlife Refuge. This myth, which lacks inherent credibility, would be tantamount to my arguing that oil and gas development in the Refuge would leave the region a complete biological desert. The oil industry would not allow me to get away with the latter myth, and neither will I allow them to get away with the former.

The short-term and long-term effects of major oil and gas development in an arctic environment are significant, chronic, cumulative, and difficult or impossible to mitigate. If oil and gas development is allowed in the Arctic National Wildlife Refuge, the visible and invisible effects will persist for generations given the current state of pollution control technology and our current inability to reclaim industrial sites in arctic conditions. Perhaps more importantly, the long-term and cumulative effects of oil and gas development in the arctic, and in particular the impacts of industrial waste disposal and habitat alteration, are poorly understood and little studied.

My testimony will address three issues. The first is a summary of the major environmental effects that we have discovered at Prudhoe Bay. Next, I will address some of the implications of these effects for the Arctic National Wildlife Refuge decision. Finally, I will discuss the problem of determining the cumulative environmental impacts of oil and gas development in the Arctic National Wildlife Refuge when considered in conjunction with the massive existing and proposed oil and gas leasing program across the rest of arctic Alaska, both onshore and offshore, as well as similar development in Canada.

MAJOR FINDINGS OF THE PRUDHOE BAY STUDY

The major findings of the Trustees/NRDC Report on Prudhoe Bay are as follows:

1. Industrialization related to oil and gas development on the North Slope has resulted in a wide range of environmental impacts, including pollution of the air and water and the destruction of substantial amounts of habitat.

2. The conduct of oil and gas related industries on the North Slope has ranged from environmentally responsible to irresponsible, and in some instances has involved a serious disregard for environmental impacts. Hundreds of violations of environmental controls have occurred, ranging from minor infractions to at least one conviction on multiple criminal counts.

3. Existing environmental regulations as currently implemented and enforced have not provided adequate protection from significant environmental deterioration resulting from oil and gas activities.

4. The technology to restore developed areas on the North Slope does not appear to exist at this time.

5. Major data gaps exist on environmental impacts and compliance on the North Slope due to a systematic failure by resource agencies to monitor environmental compliance and impacts adequately. Given current monitoring levels, these gaps are unlikely to be filled in the foreseeable future.

Some of these conclusions are supported by the CRS critique of Interior's section 1002 report, as well as comments filed on the 1002 report by the Environmental Protection Agency. Additional information on these effects is contained in various other agency and oil industry reports and studies, many of which will be cited in detail when our report is released. A large portion of the information came from a direct review of monitoring, inspection, and enforcement information in the public files of various resource agencies.

Highlighted below are the major issues of environmental concern that will be addressed in the Report, many of which are also raised in the EPA, CRS, and other comments and reports.

A. Water Pollution

Major sources of water pollution on the North Slope include drilling wastes, oil spills, and domestic wastewater. The disposal of these wastes is of particular concern in an arctic environment, where the ground remains frozen approximately nine months out of every year. During the summer, only the top two to three feet thaw, while underlying permafrost to depths of 2,000 feet blocks all subsurface drainage. Thus, disposal of wastes to the tundra can affect water quality over a potentially wide surface area.

1. Drilling wastes

Drilling fluids or "muds" are used in large quantities in drilling operations to lubricate the drill bit and to serve other functions. Each well generates about 18,000 barrels of waste muds and "cuttings", which are pieces of rock ground up by the drill bit. Disposal of these wastes is a major problem on the North Slope. Drilling wastes may contain toxic components such as heavy metals, hydrocarbons and additives in varying amounts. Many are toxic to a variety of organisms.

Some drilling wastes are stored in large (up to 13 million gallon) reserve pits that regularly escape to the tundra and to the

surface water. Despite a large number of regulations and permit stipulations requiring pits to be impermeable, numerous leaking pits have been documented. Waste fluids also escape due to over-topping or breaching of reserve pit walls. In at least one instance, there is documented evidence of wastes from a breached pit having reached drinking water sources.

Other drilling wastes are disposed of by pumping directly onto the tundra, spreading them on gravel roads which are not designed to be impermeable, and injecting them underground pursuant to state-issued permits. In 1986, 64 million gallons of wastewater were discharged directly to the tundra from reserve pits, and an additional 37 million gallons were applied to roads.

The effects of underground injection of reserve pit fluids on the North Slope environment have not been studied, although CRS noted that "reinjection of muds below permafrost, might . . . pose a long term pollution risk." The Fish and Wildlife Service has, however, begun to study the effects of drilling waste disposal on North Slope surface water. Preliminary studies indicate that tundra ponds associated with reserve pits exhibited elevated levels of toxic metals and hydrocarbons when compared to concentrations in control ponds. Moreover, evidence indicates that these contaminants are dispersing through tundra wetlands to distant ponds. Finally, the preliminary studies found correlations between these elevated pollutant concentrations with declining diversity and abundance of invertabrate species that are important food sources for birds on the North Slope.

The current regulatory system for reserve pit discharges to tundra and to roads appears inadequate in many respects. The state's tundra-discharge permits contain no effluent limits for a number of metals which occur in reserve pit fluids at concentrations that exceed EPA's acute and/or chronic toxicity criteria for freshwater aquatic life. Even those limits that are included in the state permit allow discharges that appear to exceed some EPA aquatic toxicity criteria. Further, according to industry self-monitoring reports, even these inadequate criteria are exceeded much of the time. Discharges from more than one half of the reserve pits dewatered in 1986 violated the state effluent limits. In 1985 and 1984, 85 percent and 100 percent of pits that discharged fluids violated these standards.

2. Spills

In recent years there have been 400-600 reported oil spills per year associated with oil and gas development on the North Slope and the northern portion of the haul road. But spill reports have only been computerized to present a systematic picture for the past few years. According to the Alaska Department of Environmental Conservation (ADEC), even larger numbers of spills were reported during the mid-1970's, a period of heavy construction. The most commonly reported spilled products were diesel and crude oil, which

are highly toxic to vegetation. Plant community stress due to oil spills is apparent at various locations on the North Slope, especially in the Deadhorse lease tract area where many oil field service industries are located.

A study of an oil-contaminated pond at Storkerson Point on the North Slope reported the destruction of all invertebrate and plant life, and concluded that the basin is useless to waterbirds for food; that contaminated sediments contain pollutants which may spread to adjacent wetlands; that petroleum compounds in bottom sediments break down slowly in cold climates; and that repopulation of waters over polluted sediments is unlikely. Another study, of an experimental spill of Prudhoe Bay crude on a tundra pond, eliminated several invertebrate species from the pond for at least six years.

3. Other sources of water pollution

Hundreds of permit exceedences for discharges of domestic wastewater, seawater treatment plant wastes, and other wastewater are documented in self-monitoring reports required by EPA and the state. Cumulative impacts from wastewater discharges, which may include overenrichment of tundra ponds and eutrophication, have not been adequately addressed.

B. Air Pollution

Oil and gas facilities emit large amounts of air pollutants, including oxides of nitrogen (NOx) and sulfur oxides (SOx). The oil industry relies on the fact that current levels of these pollutants are below the national primary air quality standards. But average ambient concentrations reported by industry for 1986 of NOx and SOx -- the main precursors of acid deposition -- have increased 3-10 fold over levels reported by the industry in 1980. These pollutants are of concern due to their potential to acidify sensitive arctic tundra. Both EPA and CRS noted possible acidification of tundra and contributing to arctic haze as potential long-term effects of air emissions on the North Slope.

EPA has raised concerns that acidification of tundra may result even if ambient air quality standards are being met. The U.S. Fish and Wildlife Service also expressed concern about the short-term and long-term impacts of SOx on lichens, which are an important food source for North Slope caribou. The effects of NOx and other pollutants on plant species that serve as forage for caribou and other wildlife are not known, and there are no studies underway to evaluate potential effects.

A second major source of air pollution is black smoke caused by flaring of gas vapors and liquids, the plumes from which have been tracked for 100 miles. Industry has chronically violated state air quality regulations for black smoke emissions. During 1985, the only year for which black smoke reports have been com-

piled in a data base by ADEC, 150 black smoke incidents in excess of air quality regulations were reported.

C. Land and Habitat Impacts

1. Construction

The Committee's trip to the North Slope will demonstrate the sheer magnitude of oil and gas development in an arctic environment. Oil and gas related activities have dramatically altered the face of the Prudhoe Bay landscape. Sixty million cubic yards of gravel have been used to construct over 300 miles of roads and 5,500 acres of gravel pads in the Prudhoe Bay area. Pads and roads are used to support facilities such as drill sites, housing and other facilities. Open gravel mines cover approximately an additional 720 acres.

Gravel roads and pads placed on wetlands act as dams, creating artificial lakes and ponds. An estimated 3,400 acres of habitat have been flooded in this manner in one of the region's oilfields alone. Washouts from gravel roads commonly fill underlying streams with gravel, blocking fish passage. In one instance, gravel extraction sites near Prudhoe Bay were described by the Alaska Department of Fish and Game as resembling a war zone.

Recent studies show that the cumulative impacts of construction in the Prudhoe Bay area have resulted in significant habitat elimination. One study of shorebird density patterns estimated that the overall shorebird abundance on the Prudhoe Bay oil field averaged 18 percent lower than in a control area without development. The study concluded that the habitat lost or altered by the oil filed would have supported an estimated 18,000 birds for the species studied.

2. Disturbance

Use of habitat at Prudhoe Bay has also been eliminated by human disturbance. For example, displacement of the Central Arctic Herd from its historic calving grounds in Prudhoe Bay has been documented. While bulls have demonstrated an ability to adapt to oil and gas activities, maternal groups of caribou have demonstrated sensitivity to development areas which persists beyond the years in which the original avoidance occurred, even if human activities subsequently declined. Maternal groups of caribou avoid the Trans Alaska Pipeline System in all seasons and the Prudhoe Bay oil fields during calving.

3. Site restoration

One of the biggest problems with the notion that we can develop the hydrocarbon resources in the Arctic National Wildlife Refuge and be left with a natural arctic ecosystem is the inability, given current technology, to reclaim and restore developed sites

under arctic conditions. While numerous federal and state permits and leases require such rehabilitation at Prudhoe Bay, very little rehabilitation has been done.

Industry estimates of rehabilitation costs are extremely high. For example, the Alaska Oil and Gas Association (AOGA) estimated that removal of facilities and revegetation of exploration sites would be 1.5 to 2 times the original costs, which are estimated at $4 to $11 million. Chevron estimated that it would cost over $200,000 just to close and revegetate the single reserve pit and exploratory well within the Arctic National Wildlife Refuge. There are hundreds of reserve pits, hundreds of miles of roads, and thousands of acres of gravel pads and open mine sites that will require restoration in the Prudhoe Bay region. Yet, the state only requires lessees to post bonds of $100,000 per lease or $500,000 statewide. Even more disturbing was a recent quote in a newspaper article by one state official indicating that the state does not actually forfeit these bonds when necessary to engage in state-funded cleanups.

Even if large amounts of money to conduct restoration were available, it is questionable whether rehabilitation is feasible in the arctic. Several literature reviews of revegetation in Alaska have concluded that successful rehabilitation techniques have not been developed for areas north of the Brooks Range. The Corps of Engineers commented that:

> [i]n light of industries' reluctance to develop and use compensatory mitigation/restoration techniques, none has been applied on the North Slope of Alaska, except to a very limited experimental extent. The technology has not been developed at present . . .

EPA echoed the Corps' concern:

> EPA's own extensive experience with the major operators at Prudhoe Bay supports [the Corps'] conclusions; rehabilitation technology for the North Slope is particularly lacking.

CRS also noted that successful rehabilitation techniques have not been developed for areas north of the Brooks Range.

D. Hazardous and other wastes

1. Hazardous waste

The hazardous waste situation on the North Slope is complicated by an exemption granted by Congress under which certain wastes uniquely associated with oil and gas exploration, development and production are temporarily exempt from hazardous waste regulations pending an EPA study. The effect of this exemption is to allow industry to bypass requirements for handling, storage, and

disposal and to minimize reporting of these potentially toxic wastes. The temporary exemption was supposed to be closed by 1982, by which time EPA was to have issued its report. EPA had to be forced to initiate this study in a lawsuit filed by Trustees for Alaska on behalf of the Alaska Center for the Environment, and EPA is in the process of preparing the report.

The oil industry nevertheless generates hazardous waste on the North Slope that is not covered by the exemption. Agency files indicate a number of major problems with the handling and disposal of hazardous wastes. In 1983, a major hazardous waste event occurred at the site of North Slope Salvage, Inc., which stored disposed drums from North Slope operators. During the cleanup, over 58,000 gallons of contaminated liquids were recovered. Extensive soil and water contamination was documented and the site was determined to pose a "serious environmental and human health hazard." North Slope Salvage was found guilty of nine criminal counts.

Other hazardous waste problems have been documented. According to ADEC, of 29 hazardous waste inspections performed by EPA and ADEC, 11 revealed violations. In addition, a review of agency files indicated that hazardous waste facilities have been operated without required interim status under RCRA, and without manifesting hazardous waste transportation on the North Slope as required by EPA.

2. Solid waste

Past industry waste disposal practices are not fully known, although industry has illegally used a number of waste disposal sites. ADEC recently required the closure of two unpermitted oily waste pits with histories of leaking or overtopping fluids. Solid wastes generated by oil industry operation include wrecked vehicles, airplanes, used batteries, styrofoam pipeline insulation, tires, prefabricated buildings, scrap construction materials, large quantities of scrap metals, and over 10,000 used drums per year. A review of waste disposal practices in the Prudhoe Bay Eastern Operating Area from the 1960s to the present revealed that five landfills were used to dispose of drums, scrap metal, tires, drilling muds and additives, sewage, vehicles, incinerator ash, helicopters, pipes and engines.

Several dumpsites in the Prudhoe Bay area have been subject to Preliminary Assessments under the Superfund Program because it was suspected that hazardous substances were being released.

IMPLICATIONS FOR THE ANWR DECISION

The issue of whether a core calving ground exists within the Arctic National Wildlife Refuge, and the magnitude of impacts of oil and gas development on the Porcupine Caribou Herd has consumed the vast majority of attention in this debate. Pretty much everyone agrees that there will be impacts on wildlife as a result of major oil and gas development in the coastal plain. Even the section 1002 report, which recommends full oil and gas leasing in the area, acknowledges that some of these impacts will be major. Only the precise magnitude of the impacts can seriously be debated.

While not wishing to minimize the critical importance of these issues, the Trustees/NRDC study, as well as critiques of the section 1002 report by CRS, EPA, and other entities, indicate that the chronic, long-range threats to the integrity of the Arctic National Wildlife Refuge include other far more subtle, less press-worthy, but equally serious issues. The following fundamental questions deserve attention by this Committee. Yet most of them were either not considered or received only cursory treatment in the section 1002 report.

1. How would the massive quantities of drilling wastes related to oil and gas production in the Arctic National Wildlife Refuge be handled? Even assuming that the growing, pervasive pollution of tundra wetlands and ponds that has been allowed in the Prudhoe Bay area is acceptable (which we question), such impacts clearly are not consistent with the purposes of a National Wildlife Refuge.

2. What would be the long-range, cumulative impacts of large numbers of spills of oil, diesel, and other substances on the environment of the coastal plain? While many individual spills are small, some spills at Prudhoe Bay have exceeded hundreds of thousands of gallons, and the total volumes from large numbers of "small" spills can be great.

3. What would be the effects of numerous, highly visible black smoke incidents on the wilderness and other values of adjacent areas of the Arctic National Wildlife Refuge that have already been designated wilderness? Would such events result in long-term visibility impairment?

4. What would be the long-range, chronic effects of acidification from NOx and SOx emissions on tundra vegetation within the coastal plain, and what would the effect be on lichen and other food sources for wildlife?

5. The Interior Report focused heavily on the "net" acreage of oil facilities, e.g. how many acres would actually be covered by roads, drilling pads, etc. They did not, as noted by CRS and other commenters, evaluate many of the secondary effects of these facili-

ties, including indirect habitat modification via ponding, and behavioral impacts. Would habitat alteration in the coastal plain exceed what Interior predicts based solely on the physical number of acres actually affected?

6. Given the lack of any substantial successful reclamation of oil facilities at Prudhoe Bay, what assurance is there that the Arctic National Wildlife Refuge would be restored to its natural state, or close thereto, when development is over? Given the paucity of bonding requirements, even if reclamation is technologically feasible, who would pay for such work if irresponsible operators abandon sites, as has occurred in the Prudhoe Bay region?

7. How would hazardous wastes be handled, transported, and disposed? ARCO and Standard Alaska have pending permit applications for deep well injection of hazardous wastes at Prudhoe Bay. Would similar hazardous waste disposal permits be required for the Arctic National Wildlife Refuge, and is this appropriate for a National Wildlife Refuge?

8. How and where would the massive quantities of other solid wastes be disposed in the coastal plain? A large number of landfills have been used and shut down at Prudhoe Bay, some of which are being considered for the Superfund program. Would the same be true in the Arctic National Wildlife Refuge?

9. Where would the massive quantities of water and gravel necessary to support oil and gas development in the arctic come from, particularly given the acknowledged shortage of fresh water sources in the Refuge? Both EPA and CRS criticized Interior for their lack of sufficient analysis of this issue.

CUMULATIVE IMPACTS

The draft section 1002 report essentially drew an imaginary wall around the 1002 area for purposes of considering the environmental effects of development in the region. This approach ignored the fact that a valid assessment of environmental impacts must consider the cumulative effects of development in the Arctic National Wildlife Refuge with the massive existing and proposed oil and gas leasing system that covers the rest of northern Alaska, both onshore and offshore. This development includes exploration and extraction from the NPRA, state leases at and around Prudhoe Bay, extensive existing and proposed state leases in coastal lagoons across the entire northern Alaskan coast, existing and proposed leases in the Beaufort Sea (MMS Sale 97), and existing and proposed exploration and development onshore and offshore in the Canadian Beaufort.

While the final report acknowledges this deficiency, it provides no meaningful analysis. As noted by EPA:

The final LEIS acknowledges cumulative effects by providing a list of projects which might occur but does little to actually evaluate their effects.

Many of the types of environmental pollution discussed above tend to be considered minor when viewed in isolation, but become more significant when viewed over a wider area or over a longer period of time. The loss of invertebrate food supply for birds in a single pond will have only localized effects, but the diminution of these lower trophic levels over a wide area and over longer periods may have serious long-term consequences. Thus, the Committee should ask such questions as what will be the effects of chronic water pollution in the Arctic National Wildlife Refuge in combination with similar levels of pollution elsewhere in arctic Alaska? What are the cumulative effects of air emissions from the Arctic National Wildlife Refuge when considered together with similar emissions elsewhere on the North Slope? Do these factors argue even more strongly for preserving at least a portion of the arctic Alaskan coastline in its natural state?

Similar cumulative impacts issues arise with respect to the types of direct wildlife impacts considered in the section 1002 report. The resources that are threatened by the leasing proposal are not, in many cases, local in nature. This is particularly true for migratory species such as marine mammals, waterfowl and other bird populations, caribou, anadromous fish, and other resources. Moreover, Interior's approach does not recognize that habitat losses within the ANWR, in combination with similar habitat losses elsewhere, may have substantial effects on regional resources.

Interior's failure to consider cumulative impacts is all the more difficult to understand in light of the fact that the development of the Arctic National Wildlife Refuge is considered a necessary economic prerequisite to the development of the nearshore coastal lagoons owned by the state. Indeed, development of the two areas will almost certainly share onshore support facilities, including port and loading areas. Yet the 1002 report fails to address the cumulative effects of development within the 1002 area with development of the coastal lagoons along the entire coast of the Refuge. Given the intensive use of this area by resources that migrate between onshore and offshore areas, such as birds, marine mammals, and anadromous fish, this flaw is fatal to the adequacy of Interior's review.

Similarly, the 1002 report does not address the relationship between 1002 development and proposed federal OCS leasing in the Beaufort Sea. Incredibly, at the same time that its sister agency is proposing full leasing of the ANWR coastal plain, MMS assumes in its Sale 97 (Beaufort Sea) DEIS that effects on the Porcupine Caribou Herd from a pipeline and road across the coastal plain are "not likely to occur ... since an onshore pipeline is not assumed to occur under the proposal" (p. IV-B-68). But if oil development

occurs in both the ANWR and in the eastern portion of the Beaufort Sea, pipelines from the eastern Beaufort would logically intersect the ANWR onshore pipeline. Yet the cumulative effects of this development are not considered in either document.

Perhaps the most glaring example is Interior's statement that disturbance to polar bear denning sites:

> would not likely affect the species' overall survival, so long as similar intensive development did not occur along the entire northern coast of Alaska and Canada.

1002 Report, at 130. But as noted above, similar intensive development is either occuring or planned throughout the northern coast of Alaska and Canada. The 1002 report notes the possible effects of losses of polar bear denning sites on the overall population. In particular, Amstrup et al. assert that the Beaufort population can withstand little if any increase in the mortality rate of females. In light of these realities, the lack of a cumulative impacts analysis of this issue is difficult to understand. Notably, the Sale 97 DEIS predicted "moderate" effects on the polar bear population without consideration of development in the ANWR or in the state coastal sales. Obviously, these effects will be further exacerbated by disturbance to denning sites in the Camden Bay and Demarcation Bay lagoons, and in the ANWR coastal plain. No agency has evaluated the total impact on the polar bear population.

Anotner example of an important cumulative impact ignored in the 1002 report is the effect of port and causeway development on water quality and fish migration. Interior predicts generally minor to moderate effects on aquatic resources from causeway construction. 1002 Report, at 138. Yet evidence indicates that the West Dock and Endicott causeways at Prudhoe Bay are already resulting in adverse effects, and the Sale 97 DEIS (p. IV-B-24-25) predicts MAJOR cumulative offshore effects from additional developments, without including development in the ANWR and the offshore state waters. Interior not only understates the potential effects of similar developments in the ANWR alone, but fails to consider the cumulative effects.

Similar arguments can be raised with respect to a large number of additional issues. The continuation of the proposed pipeline across the coastal plain on state lands between Prudhoe Bay and the Canning River, which would occur as a direct result of the development of the coastal plain, will transect a major calving area for the Central Arctic Caribou Herd (CAH), but no analysis of the effects of this development on the CAH is given. The Sale 97 DEIS engages in a comprehensive cumulative oil spill and fuel spill risk assessment, but expressly omits the ANWR and offshore state sales. This gap is not filled by the 1002 report, despite the need to transport large quantities of fuel through the two proposed port facilities.

CONCLUSION

The Committee will undoubtedly gain a far greater appreciation of the sheer magnitude of oil development in arctic Alaska during its forthcoming trip to Prudhoe Bay. You will also hopefully gain an appreciation of the fragile beauty of the coastal plain of the Arctic National Wildlife Refuge, and its deserving place among the great natural, protected ecosystems of North America. The contrast will be great, perhaps compelling. Hopefully, the Committee will return from Alaska with a realization that oil and gas development in the Arctic National Wildlife Refuge, particularly given current technologies for arctic development, cannot be accomplished while preserving the fundamental integrity of the Arctic National Wildlife Refuge. Congress must choose between the hydrocarbon values of the region and the integrity of its natural ecosystem. The Nation cannot have both.

Thank you very much for this opportunity to testify at this briefing. I hope you enjoy your visit to Alaska next month.

EL

United States Senate

COMMITTEE ON
ENERGY AND NATURAL RESOURCES

WASHINGTON, DC 20510

August 15, 1986

The Honorable Donald P. Hodel
The Secretary of the Department
of Interior
Washington, D.C. 20240

Dear Mr. Secretary:

We are deeply concerned about an effort underway at the Department of the Interior to exchange native inholdings in wildlife refuges in Alaska for subsurface rights in the coastal plain of the Arctic National Wildlife Refuge, presumably so this area can be developed for oil and gas. Pursuant to Section 1002 of the Alaska National Interest Lands Conservation Act, Congress deferred the decision to develop or preserve this sensitive area until an assessment could be made of the oil and gas potential and the effects development of these resources would have on fish and wildlife, native culture and subsistence, and wilderness values. Ongoing negotiations with Native regional corporations on a land exchange may jeopardize the objectivity of the report to Congress. Moreover, the proposed exchange will complicate and possibly prejudice a decision by this body regarding the fate of these lands.

Furthermore, we are dismayed to learn that the U.S. Fish and Wildlife Service has sent 8 real estate appraisers to Alaska at a cost of nearly $300,000, yet has failed to formally notify the appropriate committees of Congress of the intended land exchange. This is contrary to the intent of the Conference Committee Report for the Fiscal Year 1986 Interior Appropriations Bill (P.L. 98-473), which requires that the "appropriate committees of jurisdiction be consulted before exchanges in [national wildlife refuges and national park units in Alaska] are proposed."

We therefore urge you to suspend efforts to negotiate an exchange of native inholdings in wildlife refuges in Alaska for native-owned subsurface rights in the coastal plain of the Arctic National Wildlife Refuge until Congress has decided future management of this area.

Respectfully,

Dale L. Bumpers

Carl Levin

Bill Bradley

Howard M. Metzenbaum

Patrick J. Leahy

Paul Simon

William Proxmire

Gary W. Hart

John D. Rockefeller, IV

Albert Gore, Jr.

Daniel Patrick Moynihan

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MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS

TO: Judith M. Brady
Commissioner

THRU: James E. Eason
Director

FROM: Edward Phillips
Petroleum Economist

DATE: January 12, 1987

FILE NO:

TELEPHONE NO: 561-2020

SUBJECT: Arctic National Wildlife Refuge (ANWR) Land Trades and Potential State Revenue

DNR geologists and geophysists are in unanimous agreement that lands within the coastal plain of ANWR represent the best remaining potential for major oil and gas discoveries in Alaska. This estimated potential substantially exceeds that of remaining unleased state lands. Under current law, federal leasing of ANWR lands for oil and gas development would yield 90 percent of any bonuses, rentals and royalty income to the state. In addition, the state would receive severance, corporate, property and conservation taxes from development of ANWR leases. However, the royalty share alone could constitute upwards of 70 percent of total state revenue from potential ANWR development.

Both past and proposed ANWR land trades with native corporations reduce the revenue potential to the state by eliminating the state's share of potential federal bonuses, rentals and royalties, but not state taxes. Although the state's overall severance tax revenues would increase from development of ANWR regardless of whether or not the royalty share is reduced by exchanges, this gain is inconsequential by comparison to the state's potential royalty loss from additional federal exchanges with third parties.

Given ANWR's oil and gas potential, these losses could be substantial. The attached table reflects the staff estimates of the relative state revenue impacts of ANWR development assuming no additional exchanges and no legislative reduction in the state's 90 percent share of revenues from leasing in ANWR. The revenue projections contained in Table 1 are derived from the geological, geophysical and economic information contained in the Draft ANWR Coastal Plain Resource Assessment (1002 Report). The draft report data and assumptions were used by the federal government to compute the Net National Economic Benefits (NNEB) from leasing ANWR and to provide the justification for the policy recommendations contained within the report.

Specific assumptions underlying the attached revenue projections are not crucial to the basic issue, which is one of relative shares, or how the potential pie is sliced rather than absolute amount(s) involved. No revenue projection or forecast that has the year 2000 as a base year can be treated as a likely outcome. It is more properly viewed as "one possible outcome." The use of federal revenue numbers just assures us that we are all speaking the same language.

The assumptions underlying the estimates of potential land trade-related revenue gains and losses to the state have geological, geophysical and economic components. The 1002 Report indicates that if oil is discovered, the average recoverable reserves are estimated at 3.2 billion barrels. This quantity was used for the ANWR estimate derived by BLM for the draft 1002 report, and provides the "assumed" reserve base or recoverable reserves for this discussion. In our analysis, production would commence (from two fields) in 2000 at a 1984 dollar price of $33.00 per barrel, and escalate at one percent per year in real terms (production from one of the fields could be delayed for a year or two without substantially affecting the results). All estimates are in 1984 dollars, hence they are net of inflation, but they are not discounted to reflect the time value (time preference) of funds to the state.

The estimates are for the years 2000 through 2010. Production cannot realistically be expected much before that time, and the Department of Revenue currently does not provide estimates of Prudhoe Bay revenues embodying the federal price assumptions for periods beyond 2010.

As Table I illustrates, potential ANWR revenues to the state (even given current ASRC/KIC inholdings) could be substantial, exceeding those of Prudhoe Bay by the year 2003. By the year 2010, ANWR's revenue potential is almost double that of Prudhoe Bay using the federal price assumptions. This would be true of almost any set of prices exceeding the development threshold for ANWR. Based upon the assumptions we have analyzed, any further transfers of prospective ANWR lands from federal jurisdiction reduces the state's per-barrel revenue potential by about 70 percent as a result of loss to the state of potential royalties, bonuses and rentals. As can be seen from Table 1, the potential royalty revenue at stake exceeds six billion dollars.

We believe a significant transfer of revenue potential has already occured by virtue of ASRC's receipt of subsurface title to the two inholdings near Kaktovik. The Oil and Gas Section of DMGGS has estimated that up to 25% of ANWR's oil and gas reserve potential may be contained in lands already received by ASRC. Thus, this land trade could cost the state as much as $1.6 billion (1984 $) in lost royalty revenues if the assumptions used in the draft 1002 report and in this analysis are assumed. The volume of oil and gas discovered and its relative locations will ultimately determine the extent of the revenue "loss" associated with the previous ASRC/KIC land trades and any future land trades.

Attachment

0274P

TABLE I

ESTIMATED POTENTIAL INCOME 2000 TO 2010*
(10^6 1984$)

Year	Prudhoe Bay			ANWR (with current ASRC inholding)			ANWR Revenue as % of P.B. Revenue
	Royalty	Severance	Total	Royalty	Severance	Total	
2000	1056	670	1726	155	0	155	9
2001	923	573	1496	528	234	762	51
2002	814	488	1302	767	412	1179	85
2003	711	419	1130	779	418	1197	106
2004	625	362	987	790	425	1215	123
2005	534	313	847	711	431	1142	135
2006	430	266	696	629	341	970	139
2007	359	223	582	560	266	826	142
2008	294	179	473	506	206	712	151
2009	235	138	373	448	148	596	160
2010	159	100	259	406	105	511	197
	6140	3731	9871	6279	2986	9265	

* using federal price assumptions

0273P

STATE-WIDE SURVEY OF ALASKAN RESIDENTS REGARDING THE OIL & GAS INDUSTRY

OCTOBER 1987

PREPARED FOR ALASKA OIL & GAS ASSOCIATION

DITTMAN RESEARCH CORPORATION OF ALASKA
DRC BUILDING
8115 JEWEL LAKE
ANCHORAGE, ALASKA 99502

METHODOLOGY

During the period of October 15 through October 25, 1987, 513 Alaskans over the age of 18, in 51 Alaskan communities were personally contacted by telephone by professional interviewing employees of the Dittman Research Corporation of Alaska. The views and opinions of the Alaskan residents were recorded on a strictly confidential basis.

Research Design - A random sample design was featured which provided that all adult residents of the communities included had essentially an equal chance of being interviewed.

Sample Selection - The sample was randomly selected from current telephone subscribers listed in the most current directory for each community.

PROCESSING THE DATA

Dittman Research employees completed coding, editing, data entry and verification, while data processing was completed through the in-house Dittman Research Corporation Computer system featuring the Statistical Package for the Social Sciences (SPSS/PC+) programs. The SPSS program is one of the most sophisticated research-oriented data processing and analytical systems available, and is designed specifically for the processing and analysis of survey research data.

ALASKA OIL & GAS ASSN.
OCTOBER 1987

FINDINGS:

State-wide, Alaskans remain very favorable about the effect oil and gas development has had on the state...

Question:

"On an overall basis, do you feel oil and gas development has been good or bad for Alaska?"

Response:

84%	Good
5%	Bad
10%	Some of Both

...a finding which remains consistently and strongly positive over many years...

	Results Oct.'87	Results Nov.'86	Results April'85	Results Sept.'84
Good.....	84%	82%	85%	83%
Bad.....	5%	7%	6%	5%
Botn.....	10%	10%	8%	11%

Looking specifically at the Arctic National Wildlife Refuge, over three-quarters of Alaskans (77%) are supportive of allowing oil and gas operations within the ANWR Coastal Plain, while 19% are opposed...

Question:
"There is a debate in the U.S. Congress regarding oil and gas operations in the 1.5 million acre Coastal Plain within the 19-million acre Arctic National Wildlife Refuge. Commonly known as ANWR ("AN WAHR"), this refuge is located between Prudhoe Bay and the Canadian border. What is your opinion -- do you feel oil and gas operations should or should not be allowed within the ANWR ("AN WAHR") Coastal Plain?"

Response:		
	77%	Should
	19%	Should not
	5%	Unsure

...an increase of 8 percent in the "should" category and a decrease of 7 percent in "should not" from a similarly worded question last year...

	Results Oct. '87	Results Nov. '86
Should.....	77%	69%
Should not.....	19%	26%
Unsure.....	5%	5%

ALASKA OIL & GAS ASSN.
OCTOBER 1987

Reasons for support of ANWR oil and gas operations relate primarily to stimulation of the state's economy, a proven track record and a need for oil...

Question:

"Why should it be allowed?"

Response:

22% Good for the economy/state
20% Proven safe
19% Need the oil
8% OK, but with strict controls
5% Don't lock up land/land for people
5% Jobs

...with the "economic need" increasing from 13% last year...

1986 Results

13% Good for the economy/state
20% Proven safe
16% Need the oil
11% OK, but with strict controls
5% Don't lock up land/land for people
3% Jobs

At the other end of the scale, opposition is almost entirely from a protectionist point-of-view...

Question:

"Why shouldn't it be allowed?"

Response:

14% Protect the environment
3% Oil glut/prices/keep in ground
1% Poor track record
1% Miscellaneous

...which again is similar, but lower than last year's findings...

1986 Results

18% Protect the environment
7% Oil glut/prices/keep in ground
-- Poor track record
-- Miscellaneous

As far as the environmental track record is concerned, Alaskan residents continue to give the oil industry high marks for their Prudhoe Bay and Arctic North Slope operations over the years...

Question:

"Looking at past history, do you feel the oil and gas industry **has** or **has not** operated in an environmentally safe manner at Prudhoe Bay and on the Arctic North Slope?"

Response:

88%	Has
5%	Has not
7%	Unsure

...again, strong consistency of opinion is noted...

1986 Results

86%	Has
5%	Has not
7%	Unsure

Consequently, Alaskans feel that operations can be conducted safely in wildlife refuges within the state...

Question:

"Do you generally believe the oil and gas industry can or cannot operate safely in wildlife refuges in Alaska?"

Response:

88%	Can
8%	Can not
4%	Unsure

...which is a slight increase over 1986's highly positive findings...

1986 Results

83%	Can
14%	Can not
3%	Unsure

The "good track record" which has been established at Prudhoe Bay is the factor mentioned by most (45%), and another 16% are confident that there is "sufficient ability and technology for safe operations." Roughly one-out-of-four (28%) mention the fact that there will be "careful monitoring and strict controls"...

Question:

"...and why can/can't they operate safely?"

Response:

(CAN)

45% Good track record
28% Because it will be strictly controlled
16% Technology/ability exists
1% Lots of land - impact would be slight

(CAN'T)

5% Need to protect wildlife/environment
5% Poor track record

****

Alaska Oil and Gas Association

121 W. Fireweed Lane, Suite 207
Anchorage, Alaska 99503-2035
(907) 272-1481

FOR IMMEDIATE RELEASE

January 22, 1988

FOR FURTHER INFORMATION
CONTACT: ARDIE MERBS
272-1481
OR: DAVE DITTMAN
243-3345

THREE OUT OF FOUR ALASKANS FAVOR OIL AND GAS OPERATIONS IN THE ANWR COASTAL PLAIN

Over three-quarters of Alaskans surveyed in a recent statewide poll support oil and gas operations in the 1.5 million-acre Coastal Plain of the Arctic National Wildlife Refuge.

The survey was conducted for the Alaska Oil and Gas Association by Dittman Research Corporation of Alaska.

The reasons cited most frequently by the 77 percent who favored allowing oil and gas operations in the ANWR Coastal Plain were; (1) stimulation of the state's economy, (2) industry's proven ability to operate in an environmentally safe manner and (3) need for the petroleum resources.

Three typical responses to the question of why petroleum operations should be allowed in the ANWR Coastal Plain were, the U.S. needs the oil and Alaska needs the income and the jobs, oil and gas operations in the Coastal Plain of ANWR would be good for the state economy with no significant threats to the environment and we need the money--we need the jobs.

(more)

"The survey results clearly show that Alaskans recognize the economic benefits oil and gas activities provide to the state," said William W. Hopkins, Executive Director of the Alaska Oil and Gas Association. "Another significant finding of the survey is the over-whelming majority of Alaskans who feel petroleum development has been good for the state," he said. Survey results indicate that 84 percent of the respondents feel oil and gas development has been good for Alaska.

"Many Alaskans recognize the national need for secure domestic petroleum resources," Hopkins said. "Alaska currently provides nearly 25 percent of the country's domestic production. Oil production from the lower 48 states has dropped by one million barrels a day since February, 1986. Oil imports have increased alarmingly. Our country currently imports about 40 percent of its oil. Exploration of the ANWR Coastal Plain is vitally important to the nation and to Alaska. If oil exploration were allowed today, it would be at least 10 to 15 years before we could produce any oil. By that time, the trans Alaska pipeline is projected to carry only about one-half of its current throughput of 2 million barrels a day."

Nearly nine out of ten, 88 percent, of Alaskans surveyed feel the oil and gas industry has operated in an environmentally safe manner at Prudhoe Bay, just 65 miles west of the ANWR Coastal Plain.

(more)

An identical 88 percent feel the oil industry can operate safely in wildlife refuges in Alaska.

Respondents in Anchorage, Central and Southcentral Alaska favored petroleum operations in the ANWR Coastal Plain by over 80 percent. In Southeast Alaska, over 90 percent of those responding felt the industry has operated safely at Prudhoe Bay.

The Dittman survey was conducted in October and included a random sample of over 500 residents in 51 communities. Random sample surveys of 500 may have a sample error of 4 to 6 percent.

# # #

Alaska Oil and Gas Association

121 W. Fireweed Lane, Suite 207
Anchorage, Alaska 99503-2035
(907) 272-1481

January 25, 1988

The Honorable Sam Cotten
Alaska State House of Representatives
P. O. Box V
Juneau, Alaska 99811

Alaska Public Opinion on
Oil & Gas Operations in
the ANWR Coastal Plain

Dear Representative Cotten:

Enclosed is an AOGA release announcing the results of a recent statewide public opinion survey. The survey was commissioned to assess Alaskans attitudes on whether or not oil and gas operations should be allowed in the ANWR Coastal Plain. Results show that over three out of four Alaskans surveyed favor oil and gas operations in the ANWR Coastal Plain. A copy of the survey findings also is enclosed for your information.

The main reasons cited by the 77 percent who favored oil and gas operations in the Coastal Plain of ANWR were: 1) stimulation of the state's economy; 2) industry's proven ability to operate safely on the North Slope; and 3) need for the petroleum resources.

It is apparent the majority of Alaskans recognize the economic benefits of continued petroleum development and favor oil and gas operations in the ANWR Coastal Plain. We hope the Legislature will soon pass a resolution supporting oil and gas exploration, development and production in the Coastal Plain of ANWR.

Sincerely,

WILLIAM W. HOPKINS
Executive Director

WWH:dw15:1596

Enclosures (2)

ALASKA DIVISION OF OIL AND GAS
CRITIQUE OF THE PROPOSED ANWR LAND EXCHANGES

The Department of the Interior (DOI) has tentatively agreed to exchange the subsurface rights to certain tracts within the Coastal Plain of the Arctic National Wildlife Refuge (ANWR) for the surface estate of certain Native Corporation inholdings from other federal refuges within Alaska. The methodology which DOI apparently employed in estimating the value of the oil and gas estate within ANWR is inadequate for that purpose, and its application under the circumstances is technically unsound. As a result, the individual tract values which DOI assigned to the ANWR lands are unlikely to approximate those that would result from a competitive auction. In fact, the actual value of those resources is currently unknown, and it could only be estimated with reasonable accuracy after the drilling, testing and production of numerous wells within ANWR.

In order to understand the inadequacies of DOI's appraisals, one must first recognize the distinction between oil and gas reserves analysis and oil and gas resource analysis. This distinction is crucial because DOI apparently has used a hybrid, poorly documented resource analysis procedure ostensibly to generate estimated values which, in fact, could only be estimated from a more sophisticated reserves analysis.

This review focuses primarily on the deficiencies of DOI's assessment of the potential amount and value of oil and gas underlying the proposed exchange lands. However, in addition to the uncertainties as to the actual volume of oil and gas which may be discovered in ANWR, there are equally critical uncertainties surrounding future price and cost estimates to develop those discoveries. The interplay of each of these factors--all of which are now highly speculative--will significantly influence the estimated values of the proposed exchange tracts.

Reserves evaluation is conducted only after the discovery and delineation of oil and gas deposits within a field. Reserve evaluation relies upon objective data gathered from the completion and testing of wells, its results are highly reliable and they are reproducible by independent analysts. On the other hand, oil and gas resource evaluation of prospective areas such as the Coastal Plain of ANWR usually is conducted before any wells are drilled. It is an iterative, probabalistic computer-assisted modelling procedure which relies upon numerous subjective estimates of potential reservoir characteristics. These subjective estimates generate a probability distribution of potential "outcomes" from hypothetical drilling. These "outcomes" are expressed as anticipated amounts of hydrocarbons associated with corresponding probabilities of occurrence.

These resource estimates are based on subjective assertions about possible geophysical and geological characteristics (parameters) of a particular region such as ANWR. The computer model specifies a method of sampling from pre-specified probability distributions of these characteristics. This sampling generates a joint probability distribution of reservoir characteristics. The correct combination of characteristics results in a

simulated hydrocarbon discovery. Other combinations generate a simulated dry hole. Thousands of passes through the probability distributions for each parameter result in the probability distribution of potential resource values. But note, the range of potential outcomes is dependent upon the subjectively determined range of values for each individual reservoir characteristic. Thus, resource estimates represent the "best guess" of both men and model as to the likely distribution and value of oil and gas resources. The accuracy of the "best guess" will be strongly influenced by the quality and quantity of available data. In the final analysis, only drilling will verify the estimates.

Both reserves analysis and resource analysis have particular applications, and each has its own unique limitations. Obviously, the purposes for which each is used are determined, among other things, by both the relative availability of objective geological, engineering and economic data and the degree of certainty which the analyst (usually an investor in the case of reserves analysis and a bidder in the case of resource analysis) is trying to achieve. Investors routinely rely upon detailed reserves analysis of a delineated oil and gas field to loan money to develop the field's reserves. The same reliance should never be placed on resource estimates.

Resource analyses typically are used by petroleum exploration companies as a management decision tool to compare the relative prospectiveness of frontier areas to assist in directing the companies' future exploration efforts. A much more sophisticated but similar modelling approach is used to estimate tract values for bidding purposes. The Minerals Management Service, the State of Alaska and the Bureau of Land Management also conduct independent resource analyses before competitive oil and gas lease sales on lands which they manage. These analyses serve two important functions. First, they provide some indication of the relative prospectiveness of each potential subsurface trap identified within an area proposed for leasing. Secondly, and of greater utility, they provide ranges of estimated tract values which are used to set bidding terms and establish minimum acceptable bonus bids.

The calculated minimum bid for each tract is used as a benchmark after the sale for determining whether to accept or reject the highest bonus bid submitted for each lease. The calculation of each tract's minimum bonus bid before a sale is a modelling exercise which relies upon the manipulation of many highly subjective values. In recognition of this fact, the numbers are not treated by government agencies as absolutes in deciding whether or not to accept the apparent high bids.

Although one can speculate about the range of values which a lease may have, the actual value of a given lease cannot be accurately estimated until the lease area has been thoroughly explored by the drilling and testing of exploratory wells. For each productive lease, the number of wells required to delineate adequately the underlying reserves and to accurately estimate their value is dependent upon the geological and economic characteristics unique to that lease. It is for this reason that the minimum bid for each competitively offered lease is not considered to represent the actual value of the resources

beneath the lease. It is simply one estimate based upon the then available information. In competitive leasing, the failure of a particular lease to attract the precalculated minimum bid simply means that additional considerations will be evaluated before a decision is made whether to award the lease or to reoffer it at a later date.

The determination that "fair market value" is being received in any competitive leasing program which relies upon resource analysis presumes that public value is measured by more than the bonus bids offered. In fact, resource analysis presumes that value received by the lessor may consist of future rentals, royalties and taxes in addition to the advance bonuses received from lessees for the right to explore and develop a lease. In many cases, high bonus bids are received for tracts which subsequently are found to be nonproductive; in others, relatively low bids may win leases which ultimately prove to be highly productive, and thus extremely valuable. This fact in itself illustrates the highly speculative nature of any analysis prior to drilling. To reiterate a point made earlier, "best guesses" are just that.

Under real world competitive circumstances, bonus bids represent a percentage of the firm's estimate of the net economic value of the lease (or economic rent). The percentage that the bonus represents will vary according to the firm's perception of the geological and economic risks attendant to the lease, as well as its assessment of the potential competition for the lease. This net economic value is a residual after all costs (including taxes and royalties) have been deducted from potential revenues and the net revenue has been discounted by a "risk adjusted" discount rate representing a normal rate of profit. The firm's potential net revenues are estimated by a procedure analagous to resource analysis.

Given the subjective nature of the resource evaluation process, either too much or too little is paid for a particular lease but, on average, the competitive process transfers the net economic value to the lessor. In the long-run, negative and positive windfalls should tend to offset one another.

In theory, the net result when numerous competitive sales are conducted over time is that fair market value is received for the leasing of the public resource. Competitive leasing can thus proceed in the face of the relative uncertainty surrounding resource estimates because, on average, the future royalty and tax "windfall" revenues from unanticipated exploration successes or from discoveries which far exceed pre-leasing expectations will tend to compensate for the anticipated royalties and taxes which never materialize from estimated highly prospective leases that turn out to be dry.

There is only one certainty with subsurface resource analysis--it can never accurately estimate before leasing and drilling the present value of the combined future bonuses, rentals, royalties and taxes which may be produced from a discovery on a lease tract. The wide variance in bids for a particular tract in a lease sale offers further evidence of this estimating problem. Yet, using methodology designed for resource analysis and relying upon data insufficient for the task, DOI claims to have calculated a value of each ANWR

tract which it proposes to exchange, and that this value is an accurate estimate of that tract's value. As the previous discussion indicates, this is highly unlikely. In fact, its evaluation is inadequate as an accurate present value estimate. However, just as important for the reasons described below, its utility as a responsible resource analysis also is largely discredited.

The geophysical data used to map the structures described in DOI's 1002 report constitute a reconnaissance grid which averages approximately three miles by six miles. Such a large grid size, when combined with the lack of well data control and the extremely complex geologic characteristics of ANWR, virtually guarantees that many potential oil and gas traps of significant size may not be recognized, while others will be so poorly defined that their dimensions and geometry will be misinterpreted. Far more detailed data would be required to define accurately the potential subsurface traps within the Coastal Plain of ANWR.

Amauligak, Gulf Canada's recently announced discovery in the Canadian Beaufort Sea, is approximately twenty-one square miles in area. That discovery, which contains an estimated 850 million barrels of recoverable oil, provides an excellent example of the problems associated with relying on a regional seismic reconnaissance grid and inadequate geological data to predict the value of ANWR tracts. Were that field located in the Coastal Plain of ANWR, it would be entirely fortuitous to recognize its existence, much less to define its limits accurately with the existing data. If a deposit this size--a giant oil field by world standards--cannot be detected or accurately mapped, it should be obvious that the tracts overlying it cannot be appraised accurately.

DOI undoubtedly failed to accurately estimate the value of those tracts where subsurface traps exist but cannot be identified from the existing data. However, in addition, it clearly failed to map numerous structures which can be identified from the reconnaissance data available. According to DOI's press release describing the July 1987 exchange selections, "...Of the 73 tracts identified, 34 were on potential oil and gas structures mapped for the 1002 study and report to Congress." However, based upon our independent mapping of the same geophysical data, every one of the 73 tracts selected for exchange lies above a structural trap. Further, all of the mappable four-way closures (representing the highest potential targets) have either been exchanged or selected for exchange.

It is clear from the selection pattern and our independent mapping of the geophysical data that the tops (structurally highest and most prospective portions) of all the best structures, including the very large prospects numbers 18 and 19 (from the 1002 study), as well as the numerous prospects aligned along the Marsh Creek trend, have been selected as a result of the ASRC and latest exchanges. This is precisely the same result that would be expected to occur if the Coastal Plain acreage were made available for competitive bidding and exploration by well-informed bidders.

Many of the structures which we have identified involve the relatively shallow Tertiary sediments, which apparently either were not mapped in detail or

completely analyzed by DOI. These structures involve sedimentary rocks which are the same age as those which produce the oil-stained outcrops along the flanks of the famous Marsh Creek anticline, the prominent surface structure which first attracted petroleum explorationists to ANWR. The selection of the overlying tracts by the Native Corporations and their industry partners indicates that they have recognized and mapped the underlying structures, and that they must have high regards for their oil and gas potential.

DOI concluded further that "...503 (85.5%) tracts not identified remain available for a federal leasing program and include 87.7% of the tracts over mapped structures." For the reasons described in the preceding paragraph, this is simply not the case. The fact that DOI apparently failed to identify the potential traps beneath many of the tracts which they propose to exchange does not alter the fact that they exist. The Tertiary structures obviously have some real value even though DOI has failed to map them in detail and to attribute proper value to them.

DOI dramatically downplays the potential detrimental effects of proceeding with the proposed exchanges in the absence of objective and independently reproducible determinations of the actual value for each tract. For DOI to claim, as it does in its press release, that "...these latest selections only represent a small (10.8%) percentage of the entire 1002 area." is disingenuous in the extreme. In fact, based upon our subsurface mapping, these selections, when considered in combination with the 1983 ASRC land exchange, would result in the noncompetitive conveyance of more than 250,000 of the most prospective acres within the Coastal Plain of ANWR. This amount represents approximately 18 percent of the entire Coastal Plain of ANWR.

To focus on the relative number of acres conveyed through exchanges as DOI does, however, is very misleading. It is the location of that acreage relative to the most prospective subsurface structures which is relevant, not the absolute number of acres exchanged. Relatively small but well-informed selections could effectively result in the exchange of all of the area's potential oil and gas reserves. The potential effect of a fortuitous selection involving a relatively small area is demonstrated by the Prudhoe Bay Field.

Although the entire area surrounding the Prudhoe Bay structure was recognized to be highly prospective before the first exploratory well was drilled, we now know that the vast majority of the prolific oil and gas reserves in that region are confined to a surprisingly small area. In fact, the surface area above the main producing reservoir of the giant Prudhoe Bay Field encompasses only about 150,000 acres. Fifty-nine percent of the reservoir's recoverable oil (5.9 billion barrels) lies beneath just 40,000 acres in that field, and fully 94% of the recoverable oil (9.4 billion barrels) lies beneath the best 100,000 acres of the field.

Among the millions of acres of state-owned lands between the Canning and the Colville Rivers, this particular 150,000 acres is uniquely valuable. DOI cannot assure the public that it has not already exchanged the subsurface rights to equally valuable lands within ANWR to the Arctic Slope Regional Corporation. Similarly, DOI can offer no guarantees that the proposed

exchanges will not potentially transfer billions of dollars in oil and gas reserves to other Native Corporations and their industry partners in return for 891,000 acres of surface estate with an estimated value of $538.7 million (not based upon fair market value appraisals).

The details of one particular exchange contract, that between Old Harbor and its industry partner, Texaco, illustrate quite clearly that the corporations will receive substantially more from the exploration of the tracts which they selected than DOI has claimed those lands to be worth. In this example, the total value of the corporation's exchange lands, and thus the value of the ANWR tracts it selected, was placed at $45.7 million by DOI. Yet, if ANWR is opened, the corporation's industry partner is committed to pay $45.7 million plus a 14 percent royalty on any oil and gas produced from those lands.

The DOI exchange procedures apparently neither estimate nor acknowledge the value of that 14 percent royalty interest. Whatever the amount may ultimately be, it would accrue directly to the corporation shareholders instead of to the federal (and/or state) treasury, as would be the case if the tracts were leased competitively. Furthermore, Texaco has agreed to pay Old Harbor a 1 1/2 percent royalty on any leased lands in the Coastal Plain not owned by Old Harbor.

In relative terms, the proposed land exchanges provide almost absolute economic protection for the Native Corporations with no parallel protection for the federal government. In fact, the exchange contract provisions virtually assure that any loss for DOI (and the public) will be a windfall for the corporations and their industry partners. In the final analysis, the exchanges are a no-loss proposition for the corporations, and a no-win situation for the public. Economic and geological risk has been transferred to the taxpaying public and a few select oil companies.

For example, one of the exchange contracts currently contains a rescission clause which enables the corporation to relinquish title to its subsurface estate in ANWR in exchange for the reconveyance of a portion--rumored to be as high as 65 percent of the surface estate which it has traded for the ANWR lands. In light of the total uncertainty surrounding whether the ANWR lands have oil and gas reserves, this provision was created to enable the corporations to regain title to a portion of their former surface inholdings should exploration by their industry partners prove unsuccessful.

However, if as has been reported, each of the corporations has already received advance cash payments from its respective industry partner for the future right to explore and develop the lands which it has selected, the corporations bear little or no risk in the exchanges. Their risk is offset effectively by the cash advances from industry. Moreover, this protection is further enhanced for any corporation that insists upon a rescission clause if its ANWR selections are nonproductive.

Under the same circumstances, however, the public interest will not fare so well. In exchange for an indeterminate number of abandoned exploratory well locations on the Coastal Plain for which it will regain title, DOI will have to reconvey title to some of the valuable refuge inholdings which it has temporarily received from one or more of the corporations. The stated basis for its proposed exchange literally will disappear. Meanwhile, DOI will have

foregone the undoubtedly high bonus bids, rentals and royalties which it could have received had it competitively leased the ANWR lands instead of exchanging them under noncompetitive procedures.

Of equal importance, should exploration prove unsuccessful, DOI will have assured the early condemnation of adjacent unleased acreage by allowing expedited drilling of the exchanged lands, all of which overlie portions of prospective subsurface structures. The absolute revenue loss from the premature condemnation of surrounding unleased acreage cannot be calculated should one or more of the exchange tracts prove to be dry. However, given ANWR's perceived hydrocarbon potential, the foregone bonus revenues, alone, could amount to hundreds of millions of dollars. Whatever that loss ultimately might be, it would not be industry's loss, and it would not be the Native Corporations' loss--it would be the public's loss. There is no effective way to limit the potential public revenue loss from the early condemnation of unleased tracts by drilling on adjacent exchange lands short of prohibiting the drilling of any additional exploratory wells in ANWR before competitive leasing occurs.

To assure that the corporations receive the full value of their inholdings, but that neither they nor their industry partners benefit from windfalls at public expense, would necessitate limiting total revenues to the full appraised value of those surface inholdings. From a public perspective it would make sense to limit the corporation's future revenues from its ANWR subsurface rights to the appraised value of its exchanged inholdings (plus interest) minus the cash advance it has received from its industry partner. Once the full appraised value (plus interest) of its surface lands is recouped, the corporation's interest in the subsurface estate would revert to the federal government, and the corporation's former percentage revenue share would subsequently accrue to DOI as a royalty on the continuing production.

A combined strategy of prohibiting additional drilling until after competitive leasing has occurred and limiting the Native Corporations' future revenues from exchanges to the appraised value of their surface inholdings would minimize the loss of public revenue. However, it would not remedy the worst flaw of the proposed exchanges, the fact that they simply are bad public policy. Proceeding with the exchanges would ratify DOI's precedent of substituting noncompetitive, negotiated exchanges which favor only a few companies and Native Corporations for open competitive leasing procedures which would treat all participants equally, and which assure the federal government's receipt of fair market value for the leasing of public resources.

In summary, DOI's resource analysis is no substitute for competitive sales as a means to estimate the value of the potential oil and gas resources which are proposed for exchange. However, that evaluation, which relies upon regional geophysical and geological mapping is adequate to establish a competitive leasing program in ANWR. The federal government's receipt of fair market value for ANWR's oil and gas resources can only be assured through a fully open and competitive leasing program which retains a significant royalty interest in any oil and gas reserves which are discovered and produced there. Both the Prudhoe Bay and the Amauligak fields provide graphic examples of why DOI's proposed exchanges entail unacceptable risks for prudent managers of the public resources.

EXECUTIVE SUMMARY
OF THE ALASKA DIVISION OF OIL AND GAS CRITIQUE
OF THE PROPOSED ANWR LAND EXCHANGES

When combined with the 1983 ASRC exchange, the Department of the Interior's (DOI) most recent proposed ANWR land exchanges result in the non-competitive conveyance of more than a quarter of a million acres of the most prospective lands within the Coastal Plain of ANWR for a TOTAL VALUE OF ONLY $543.8 MILLION (the appraised value of the exchange lands tendered to DOI). In the ASRC exchange, DOI received surface estate appraised at $5.6 million in exchange for subsurface rights to approximately 92,000 acres of highly prospective mineral estate beneath lands owned by the Kaktovik Inupiat Corporation in the Coastal Plain of ANWR. The currently proposed exchange would convey the subsurface rights to an additional 166,278 acres of the remaining most highly prospective lands to six Native Corporation groups and their industry partners, in exchange for 891,000 acres of surface estate with an estimated value of $538.7 million.

Although impossible to calculate, it is almost certain that a competitive lease sale of this same coastal plain acreage would generate substantially higher revenues than those resulting from the ASRC exchange and the latest proposed exchange. The value of the royalty interest alone, should significant discoveries occur, potentially may be measured in the billions of dollars. Bonus revenues are likely to be higher than the exchange values because the open competition in a competitive lease sale necessitates higher bids to "win" the most prospective tracts.

The details of one particular exchange contract, that between Old Harbor and its industry partner, Texaco, illustrate quite clearly that the corporations will receive substantially more from the exploration of the tracts which they selected than DOI has claimed those lands to be worth. In this example, the total value of the corporation's exchange lands, and thus the value of the ANWR tracts it selected, was placed at $45.7 million by DOI. Yet, if ANWR is opened, the corporation's industry partner is committed to pay to them $45.7 million plus a 14 percent royalty on any oil and gas produced from those lands.

The DOI exchange procedures apparently neither estimate nor acknowledge the value of that 14 percent royalty interest. Whatever the amount may ultimately be, it would accrue directly to the corporation shareholders instead of to the federal (and/or state) treasury, as would be the case if the tracts were leased competitively. In addition, the agreement provides that Texaco will also pay Old Harbor a 1 1/2 percent royalty from production by Texaco on any leased land in ANWR not owned by Old Harbor.

The uniquely high hydrocarbon potential of ANWR presents DOI with a one-time-only opportunity both to reduce the national dependence on foreign oil imports and to receive significant public revenues in the process. In acknowledging the extremely high upside resource potential and realizing the uncertainties attached to DOI's assigned value for individual ANWR tracts, a prudent approach, at the very least, would require that the federal government retain a significant royalty interest in future petroleum production from all the ANWR tracts.

The methodology which DOI apparently employed in estimating the value of the oil and gas estate in ANWR is inadequate for that purpose, and as a result, the individual tract values which DOI assigned to the ANWR lands are unlikely to approximate those that would result from a competitive lease sale. A reserves analysis, which relies upon objective data from the completion and testing of wells, would be necessary to establish a reliable value for the subsurface resources beneath the ANWR tracts. DOI has employed a resource analysis procedure which relies on probabilistic computer-assisted modelling of subjective geologic variables to assign values to the individual tracts. Subsurface resource analysis can never accurately estimate, prior to leasing, drilling, and testing, the present value of the combined future bonuses, rentals, royalties and taxes which may be realized from a discovery on a lease tract.

In addition to the limitations of resource analysis methodology, the utility of DOI's evaluation is further constrained by the inadequacy of data available in ANWR. The geophysical data used to map structures in ANWR constitute a reconnaissance grid which averages three miles by six miles. Such a large grid size, when combined with the lack of well data control and the extremely complex geology, virtually guarantees that many potential oil and gas traps of significant size may not be recognized.

Amauligak, a recent discovery in the Canadian Beaufort Sea with an estimated 850 million barrels of recoverable oil, is approximately twenty-one square miles in area. Were that field located in the Coastal Plain of ANWR, it would be entirely fortuitous to recognize its existence, much less to define its limits accurately with the existing data. If a deposit this size--a giant oil field by world standards--cannot be detected or accurately mapped, it should be obvious that the tracts overlying it cannot be appraised accurately.

According to DOI's press release describing the latest exchange selections, "...of the 73 tracts identified, 34 were on potential oil and gas structures mapped for the 1002 study and report to Congress." However, based upon the state's independent mapping of the same geophysical data, every one of the 73 tracts selected for exchange lies above a structural trap.

Further, all of the mappable four-way closures (representing the best potential target areas on the structures) have either been exchanged or selected for exchange. The fact that most of the industry selections do not overlie structures mapped by DOI in the final 1002 study indicates that DOI's mapping is incomplete. The actual exchange selection pattern reveals that the native corporations and their industry partners have recognized and mapped these underlying structures and that they apparently have high regards for their oil and gas potential.

The selection pattern and our independent mapping indicate that not only the mappable closures, but the tops (structurally highest and most prospective portions) of all the best structures, including the very large prospects #18 and #19 (from the 1002 study), and numerous prospects aligned along the Marsh Creek trend, have been selected already by the exchange participants, just as

would be expected to occur if the acreage were offered for competitive leasing and exploration by informed bidders. Based upon our current knowledge, the acreage remaining for any future competitive sales is situated over the structurally lower (and therefore less prospective) portions of the subsurface structures on which selections were made or on other less prospective unselected structures.

Together, the ASRC and latest proposed exchanges would transfer over 250,000 acres of the 1.53 million acre Coastal Plain (approximately 18 percent) into private ownership. However, to focus on the relative number of acres conveyed through exchanges, as DOI does, is very misleading. It is the location of that acreage relative to the most prospective subsurface structures which is relevant, not the absolute number of acres exchanged. Relatively small but well-informed or simply fortuitous selections could effectively result in the exchange of all of the area's potential oil and gas reserves.

It is the uniquely high upside potential of the ANWR acreage which is attracting the wide-spread exploration interest in the Coastal Plain. However, unsuccessful exploration on the exchanged lands, prior to leasing, is one possible outcome. The less prospective tracts in ANWR, those remaining after the exchange selections, could very well be condemned through early drilling of the exchange tracts, with a resultant loss in public revenues.

The incorporation of a rescission clause in any of the exchange contracts would enable a corporation to relinquish title to its subsurface estate in ANWR in exchange for the reconveyance of a portion--rumored to be as high as 65 percent--of the surface estate which it has traded for the ANWR lands. The effect of this particular stipulation, when combined with the advance cash payments the corporations are reported to have received from their respective industry partners, places the corporations in a very enviable low or no-risk position. The public interest does not enjoy parallel protection, however. In exchange for an indeterminate number of abandoned exploratory well locations on the Coastal Plain for which it will regain title, DOI will have to reconvey title to some of the valuable refuge inholdings which it has temporarily received from one or more of the corporations. Under these circumstances, the stated basis for the proposed exchange literally will disappear.

The federal government's receipt of fair market value for ANWR's oil and gas resources can be assured only through a fully open and competitive leasing program which retains a significant royalty interest in any oil and gas reserves which ultimately may be discovered and produced there. The fairness and equity offered by competitive leasing procedures are in marked contrast to the terms of DOI's proposed exchanges. Those exchanges are not equal value exchanges. In fact, the actual value of the ANWR lands proposed for exchange cannot be determined prior to the drilling and testing of numerous exploratory wells on the tracts.

1078E 09/18/87

Koniag, Inc.

November 16, 1987

The Honorable Donald Paul Hodel
Secretary
Department of the Interior
Main Interior Building
18th and C Streets, N.W.
Washington, D.C. 20240

Re: ANWR Land Exchange

Dear Secretary Hodel:

We have recently received a copy of Governor Cowper's letter to you dated October 28, 1987, and a copy of Critique of the proposed ANWR Land Exchanges prepared by the Alaska Division of Oil and Gas ("ADO&G"). While we would not normally comment on a position taken by the Governor in correspondence with you, the letter has been released to the press. Because of the obvious misstatements, inferences and inconsistencies in the purported analysis prepared by ADO&G upon which the Governor appears to be relying, we are compelled to respond.

As you are aware, the land exchanges present an unparalleled opportunity for the United States to acquire lands which would not otherwise be available to the United States. The acquisition of these lands and the preservation of the integrity of the refuge system is an issue of critical importance to the federal government.

In outlining the areas of greatest concern to the State, the Governor states that the exchanges will divert attention from the larger question regarding the opening of ANWR. We disagree with the Governor's conclusion as to the impact of the exchanges, because it is our belief that the exchanges provide Congress with an opportunity to acquire lands for the public which would not be

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otherwise available. The only two groups that seem to consistently raise the exchanges in the recent hearings have been the environmental groups, who have publicly acknowledged their fear that the proposed exchanges will influence Congress to open ANWR, and the representatives of the Governor's administration. We regard the current legislation on the exchanges as reflective of Congress' concern that it reserves to itself the ultimate decision. The proposed Jones bill (H.R. 3601) clearly reflects this desire of Congress.

The Governor also goes on to state that he now opposes the exchanges because they propose to trade surface values for unknown but highly prospective subsurface values. However, in March of this year, based upon the same data, he opposed the exchanges and withdrew the State from further participation in the negotiations with the Department for entirely different and inconsistent reasons. It was his belief then that the State lacked sufficient information to determine the actual location and value of any petroleum reserves, and that, therefore, the State could not obtain desirable tracts. Thus, the Governor reasoned, given the unreliability of the data, it would be inappropriate for the State to trade known surface values for "speculative" ANWR subsurface values. It was not his concern that the concept was flawed as he now asserts. It is difficult for us to understand this inconsistency in the State's reasoning. In March, the tracts were too speculative for the State to accept in exchange for known surface values, whereas in October, the subsurface values are too prospectively valuable to be exchanged. Yet no new data has been generated in the interim. As you are aware the procedures followed by BLM to determine tract values for the exchanges are the same ones used by the United States to determine values for other disposition of oil and gas interests and, to some extent the State, in determining the acceptable level of bonus compensation under the standard leasing programs.

The Governor also faults the exchanges for not acquiring the subsurface estate in those lands where it is available. It is our understanding that decision was reached by the Department of the Interior after concluding that the subsurface had little or no potential for developable minerals, making it unwise to incur the cost of acquiring it.

The last reason given by the Governor for his opposition is perhaps the most significant--the fact that the exchanges may deprive the State of revenues from the tracts. The Governor points to the ASRC/KIC exchange as an example of this, and

attempts to create the impression that this exchange is part of the pending exchange proposals. What the Governor fails to acknowledge is that under the provisions of ANILCA, ASRC had the rights to acquire the subsurface of those lands upon the opening of the Coastal Plain by Congress. Thus, in no event would the State receive any lease revenues from those lands had the exchange not been consummated. In fact, by consummating the exchange, the Department was able to acquire valuable inholdings in the National Park System at no additional cost to the United States.

With respect to the State's need for revenues, it is our understanding that, even with the very significant royalties derived by the State from its holdings at Prudhoe Bay, over 60% of the State's revenues from oil and gas is derived from taxes, the same taxes which will be levied on any interests that are acquired in the ANWR exchanges. Furthermore, our corporations are Alaska corporations which do most, if not all, of their business in Alaska. Any dollars we earn are spent locally helping the economy of the State. Our shareholders are by and large all residents of the State and likewise to the extent we are able to pay dividends, those dividend dollars are immediately put into the State's economy.

Because the Governor's position is in a large part based upon the ADO&G Critique, we have taken the liberty of attaching a brief review of that document for your consideration. In our judgment, the ADO&G Critique is not an honest and factually accurate analysis of the proposed exchanges. Inasmuch as the Governor has relied upon that Critique, he has been ill served.

We neither agree with nor understand the Governor's opposition to the proposed exchanges. Suffice it to say that his position is not shared by the Alaska State Senate which adopted a Resolution this spring addressing exchanges in a more positive light. Nor is there any evidence that it is shared by the Alaska Congressional delegation. It may be that the State administration fails to understand the implications of national policy when viewed from the more narrow perspective of State self interest. The acquisition of critical inholdings in these Refuges is a national issue which has implications far beyond the day-to-day operations of the State.

We appreciate the opportunity to correct some of the misinformation that has been so broadly circulated by the State.

Respectfully,

NATIVE LANDS GROUP

By: _____
Margie Sagerser Brown

AKHIOK-KAGUYAK, INC.

By: _____
Ralph Eluska

DOYON LTD.

By: _____
Morris Thompson

GANA-A' YOO LIMITED

By: _____
Max Huhndorf

OLD HARBOR NATIVE CORPORATION

By: _____
Emil Christiansen

KONIAG, INC.

By: _____
Frank Pagano

cc: Senator Ted Stevens
Senator Frank Murkowski
Congressman Don Young
Assistant Secretary William Horn

CRITIQUE OF A CRITIQUE

The following is not intended as a line-by-line rebuttal of the statements in the Critique of the Proposed ANWR Land Exchanges prepared by the Alaska Division of Oil and Gas, but seeks to address the more fundamental inaccuracies and misstatements contained in the document. These inaccuracies go to the heart of the analysis and cast very substantial doubts on its validity.

ASRC Exchange.

The Critique clearly misstates the impact of the proposed exchanges by including with them as an integral part of its analysis the 1983 Arctic Slope Regional Corporation ("ASRC") Exchange. The ASRC Exchange is in no way involved with the present proposed exchanges. Two-thirds of the lands received by ASRC under that exchange is outside the Coastal Plain as defined by Congress. Furthermore, in ANILCA, Congress mandated that upon the opening of the Coastal Plain of ANWR, ASRC was authorized to acquire those same lands by exchanging on an acre-for-acre basis other subsurface lands which it owned. It was only as the result of the 1983 exchange that the United States was able to receive any lands of value for the rights granted by Congress. Correspondingly, as the result of ANILCA, the ASRC Lands would have never been available for leasing by the United States and thus no bonus could have ever been derived from them. Notwithstanding this very obvious distinction, the author of the Critique repeatedly includes these ASRC Lands in his analysis, resulting in over a 50% overstatement of the acreage actually involved in the proposed exchanges.

Valuation.

Likewise, the State's analysis of the valuation process is equally flawed. Rather than valuing the oil and gas in place, the procedure which was utilized sought to place a value on the right to explore, develop and produce any oil and gas which might be found. There have never been any representations by the United States that oil or gas will be found under the tracts or, if found, the exchange participants will ever receive sufficient income to equal the value of the tracts as determined by BLM. While the State seeks to point out that in fact if there is oil and gas present, the value of the tract could be in excess of the value established, it fails to acknowledge that there is a greater than 80% risk that there is no oil and gas under the tract and that if there is no oil or gas, the value being charged for these rights is far in excess of the "actual value" of the tract.

The procedure utilized to arrive at the value of these rights with respect to the tracts utilizes the standard methodology followed by BLM (and to some degree the State of Alaska as

well) in determining whether the compensation offered to the United States is fair value for granting such rights in a lease sale. There was, however, one important departure from the application of this methodology in the case of the valuations for the exchanges. In arriving at the exchange values, BLM added a second amount to the amount it determined to be fair compensation for the tract. The amount added was the net present value of the right of the United States to receive a royalty from any production. Thus, unlike a normal lease where the obligation to pay a royalty is dependent upon actual production, the participants were required to prepay to the United States the value of that royalty irrespective of whether or not production ever occurs from these lands. Thus, the United States bears none of the risk of whether oil or gas is present under a tract exchanged to a Native Corporation. That risk is borne solely by the Corporation and to the extent the Corporation is able to pass that risk on to a third party does not mean that the valuation process for the tracts is faulty. It should be noted that most of the participants for whatever reasons were not as successful as Old Harbor Native Corporation in passing on that risk. The participants are not in the oil and gas business and are not accustomed to taking such risks. Thus, it was only through their ability to pass on some or all of that risk to industry that they were able to go forward with the exchanges and make their inholdings available to the Refuge System.

Rescission.

Another incorrect inference suggested by the Critique is that the Native Corporations have the right to rescind the exchange and reacquire their refuge inholdings if the exploration efforts are unsuccessful, thereby depriving the United States of the consideration it received for granting those rights. While it is true that at this time one participant has negotiated a limited right to rescind the exchange with respect to a portion of its lands in consideration for the payment to the United States of an overriding royalty, of the approximately 895,000 acres of Native lands being acquired, the United States will retain approximately 820,000 acres even if that Corporation is able to exercise its rights of rescission, and even of that Corporation's inholdings, the United States will retain its best lands having a value equal to any consideration that Corporation may receive from industry, but in no event less than 35% of such lands.

Structures.

The Critique makes numerous statements regarding the Department's failure to identify all possible structures and how, based upon the State's independent analysis, every one of the 73 tracts selected by the participants is located above structures. It also asserts that all mappable closures have been exchanged or proposed for exchanges and that the tops of all of the best structures have been selected. It is surprising that this was

accomplished by the identification of only 15% of the lands within Coastal Plain, and that no selections were identified in the area of the major structure core calving area and very few in some of the other identifiable structures. What is even more surprising and calls into question the accuracy of these assertions, is that a little more than seven months ago the Governor, in giving his reasons for withdrawing the State from the exchange negotiations, stated that a major reason for his action was the unreliability of the available data and the lack of sufficient data for the State to be able to make selections. After the completion of the identification process, and with no new data than the same data which was available to the Department and most of the industry advisors of the participants, the State is now able to identify structures where before the structures had fallen through the holes in the seismic grid. The one participant whose industry advisors had the data from the KIC well, however, selected on the structures mapped by DOI.

Pre Lease Exploration.

The ADO&G Critique also expresses a concern regarding the effects of any pre-lease exploration activities of the participants which might be authorized by Congress. In opposing such activities, the Critique points to the potential lost revenues from bonuses which would be paid at a lease sale from "premature condemnation" of the area based on unsuccessful exploration efforts. If Congress were to authorize such activity, it would appear that the advantages of the United States having the down-hole data from such activities would be extremely beneficial. If the results were positive, the Department could shape the lease sale accordingly. If the results were negative and the area "condemned," the unnecessary environmental impacts from the full scale exploration efforts which would follow the lease sale could be avoided. If as the results of such activities it were determined that the Coastal Plain were to have no potential, then clearly no one would advocate holding a lease sale and permitting the environmental impacts from the resulting exploration activities to occur, solely to generate a few dollars in lease bonuses.

ALASKA DIVISION OF OIL AND GAS

RESPONSE TO

"CRITIQUE OF A CRITIQUE"

PREPARED BY

THE NATIVE LANDS GROUP, AKHIOK KAGUYAK, DOYON LTD.,

GANA-A YOO LIMITED, OLD HARBOR NATIVE CORPORATION, AND

KONIAG, INC.

November 20, 1987

The November 16, 1987 letter and attached critique entitled, "Critique of A Critique" from the Native Lands Group, Akhiok-Kaguyak, Doyon Ltd., Gana-A Yoo Limited, Old Harbor Native Corporation, and Koniag, Inc. (the corporations) to Secretary of the Interior Hodel can only be characterized as a deliberate distortion and mischaracterization of the public record. Using entirely conclusory and undocumented statements, the authors attempt to discredit the ANWR Exchange Critique prepared by the Alaska Division of Oil and Gas.

Fortunately, the public record itself rebuts most of the unsubstantiated claims and allegations contained in the corporations' documents. In combination, the public record, the terms of the publicly available proxy statements of Koniag, Inc. and Old Harbor Native Corporation, as well as the candid public comments of Old Harbor and Department of the Interior representatives effectively debunk the remainder of their arguments.

MISCHARACTERIZATIONS WITHIN THE LETTER

> The corporations suggest that there is limited opposition to the proposed exchanges. They claim "...The only two groups that seem to consistently raise the exchanges in the recent hearings have been the environmental groups, who have publicly acknowledged their fear that the proposed exchanges will influence Congress to open ANWR, and the representatives of the Governor's administration."

Since there have been no Congressional hearings to specifically consider the proposed exchanges and in light of Interior's agreement to defer them, it is not unusual that discussion of them has temporarily subsided. However, this fact in no way implies that there is not widespread and vocal opposition to the proposed exchanges.

For example, in the July 22, 1987 edition of the Anchorage Daily News, Representative George Miller, Chairman of the Interior Water and Power Resources Subcommittee, expressed his view that "These exchanges are a cynical attempt to put pressure on the Congress to vote to open the area for oil exploration and production." Earlier, in an August 15, 1986 joint letter to Interior Secretary Hodel ten members of the Senate Committee on Energy and Natural Resources voiced the opinion that "...the proposed exchange will complicate and possibly prejudice a decision by this Congress regarding the fate of those lands." More recently, Senator Bennett Johnson who chairs the Senate Energy Committee has been an outspoken critic of the proposed exchanges.

> The corporations claim that the reason for the state's opposition to the exchanges has changed over time. They maintain "...he (Cowper) opposed the exchanges and withdrew the State from further participation in the negotiations with the Department for entirely different and inconsistent reasons. It was his belief then that the state lacked sufficient information to determine the actual location and value of any petroleum reserves, and that, therefore, the state could not obtain desirable tracts. (emphasis added)

In fact, the state's position has been entirely consistent throughout since Governor Cowper first publicly expressed opposition to the exchanges. The record reflects that Governor Cowper has consistently and repeatedly explained in detail the several reasons for his position, one of them being the inability for anyone to select desired tracts, not just the state, as alleged by the corporations.

In a written public statement on the exchanges dated February 27, 1987 Governor Cowper described his reasons for withdrawing state representatives from the exchange negotiations. Cowper explained "...First, land trades add a layer of complexity to the ANWR issue. By further complicating this already difficult matter, Congressional attention is diverted from the State's central concern which is the opening of the refuge...Second, the State and federal government's understanding of the actual location and value of the petroleum reserves is not good enough to assure that either the State will obtain desirable lands, or that highly prospective tracts are not traded away without sufficient compensation...Another major factor to consider is that land exchanges are not in the best interest of the broadest spectrum of Alaskans..."

Later, in his testimony before the Senate Energy Committee on June 4, 1987, Governor Cowper explained "...although available geologic and geophysical data clearly demonstrate the hydrocarbon potential of the region, the State and Federal government's understanding of the actual location and value of the petroleum reserve is not precise enough to assure that highly prospective tracts are not traded away without the Federal government receiving adequate compensation." (emphasis added) Thus, the record clearly establishes that the Governor's concern always has been and continues to be that the exchange valuation procedures are inadequate to establish reliable subsurface values, and thus do not assure the federal government's receipt of fair market value for the resources. This is precisely the conclusion of the Division of Oil and Gas Critique, which is supported by literally hundreds of pages of memoranda and testimony spanning more than eighteen months preceding the release of the division's critique.

> The corporations claim in their letter to Secretary Hodel that the procedures followed by BLM to determine tract values for the exchanges are "...the same ones used by the United States to determine the values for other dispositions of oil and gas interests..."

In fact, as the Division of Oil and Gas Critique describes in great detail, resource analysis procedures are not used by the federal government to determine the actual value of oil and gas leases. Instead, the procedures are used to establish probabilistic ranges of potential values, and in some cases, a minimum bonus bid, or floor price which, in conjunction with other criteria including a reserved royalty and rental interest, will fairly compensate the federal government for competitively leasing the resources. The important distinctions between the determination of actual value (through reserves analysis or competitive sale) and highly subjective estimates of the range of

potential values should be clear to the corporations, as they surely are to their respective industry partners.

> In describing the former exchange between Arctic Slope Regional Corporation and Interior, the corporations claim "...the Department was able to acquire valuable inholdings in the National Park System at no additional cost to the United States." (emphasis added)

The concern over the equity of this exchange and its potential costs to the federal government has prompted a request from one member of Congress that the General Accounting Office conduct an independent investigation of that exchange, as well as the proposed exchanges (an investigation which is now underway). In their claim that there was no additional cost to the United States, the corporations apparently discount both the foregone bonus revenues and the "value" received by ASRC from its industry partners for allowing them to drill the KIC well before Congress decides whether to open ANWR. In addition, they also discount the "value" of having the information from that well to achieve competitive advantages in both the non-competitive, negotiated exchanges, as well as in any subsequent federal leasing within ANWR. Surely the corporation would not claim that in a competitive lease sale the KIC lands would not have attracted substantial cash bonuses.

> The corporations attempt to downplay the opposition to the proposed exchanges within the Alaska Legislature by referencing some support for the exchanges within the Senate, while remaining silent about the very vocal and widespread opposition expressed by others in the Senate and by members of the House of Representatives.

In fact, there is very strong opposition to the exchanges within the Alaska House of Representatives. An indication of the seriousness of this opposition is provided by a November 13, 1987 letter to Senator Jan Faiks, President of the Senate, from Representative Sam Cotten (Co-Chair, House Resources Committee). In that letter, Representative Cotten expressed his view that "...the Legislature failed to pass a resolution supporting oil and gas leasing in the coastal plain of the Arctic Refuge for one reason: the leadership of the Senate insisted that the resolution include language endorsing coastal plain land trades...I believed then, and believe even more strongly now, that the proposed land trades could do enormous violence to the general interests of the people of the State of Alaska, even though they might benefit oil companies and the involved ANCSA corporations..."

Representative Cotten concluded his letter by noting "...I know that the Senate majority endorsed the trades last year in SJR 7. Yet it seems incomprehensible to me that any Alaska public policymaker would continue to hold this position in light of the many revelations this summer."

> If, as they claim, the corporations cannot "...agree with nor understand the Governor's opposition to the proposed exchanges...," perhaps they

> could achieve a better understanding of them by reading Representative Cotten's letter in its entirety.

Representative Cotten continues to describe the bases for his concern by saying "...I also believe, despite the arguments to the contrary last session, that the proposed trades have diverted and stalled discussion of the larger issue before the U. S. Congress. They certainly have not smoothed the progress of coastal plain legislation on Capitol Hill. In fact, influential U. S. representatives and senators have told the Interior Department to hold off on further trade actions and have requested an investigation of the trades by the General Accounting Office. Fortunately the trades are inactive at present, despite expensive lobbying effort by some ANCSA corporations in Washington. (Notably the Anchorage Public Policy Forum was not able to come up with a proponent of the trades for a public meeting last week. I understand from APPF that state senators who had included the pro-trade language in SJR 7 were not willing to speak on the issue, and ANCSA corporations were unwilling to have a representative defend the trades at the meeting.)" (emphasis added)

CRITIQUE OF THE CORPORATION'S CRITIQUE

In prefacing their specific comments on the Alaska Division of Oil and Gas Critique of the Proposed ANWR Land Exchanges, the corporations express their desire "...to address the more fundamental inaccuracies and misstatements contained in the document." According to the corporations, "These inaccuracies go to the heart of the analysis and cast very substantial doubts on its validity." However, rather than identifying and documenting inaccuracies, the corporations have instead merely mischaracterized the Division of Oil and Gas analysis. Even a casual reading of the Division of Oil and Gas Critique, in light of the criticisms, reveals where the inaccuracies actually lie.

ASRC Exchange:

> The corporations claim that the division's critique "...clearly misstates the impact of the proposed exchanges by including with them as an integral part of its analysis the 1983 Arctic Slope Regional Corporation ("ASRC") Exchange." They also assert that "...the author of the Critique repeatedly includes these ASRC lands in his analysis, resulting in over a 50% overstatement of the acreage actually involved in the proposed exchanges."

Contrary to these claims, the division's critique explicitly differentiates between the two exchanges in its discussions of the former ASRC exchanges and the proposed exchanges. There is no misstatement of fact and no attempt to confuse the issues behind the two exchanges whatsoever. The opening paragraph

of the "Executive Summary" of the Critique, which is repeated verbatim below, speaks for itself.

"When combined with the 1983 ASRC exchange, the Department of the Interior's (DOI) most recent proposed ANWR land exchanges result in the non-competitive conveyance of more than a quarter of a million acres of the most prospective lands within the Coastal Plain of ANWR for a TOTAL VALUE OF ONLY $543.8 MILLION (the appraised value of the exchange lands tendered to DOI). In the ASRC exchange, DOI received surface estate appraised at $5.6 million in exchange for the subsurface rights to approximately 92,000 acres of highly prospective mineral estate beneath lands owned by the Kaktovik Inupiat Corporation in the Coastal Plain of ANWR. The currently proposed exchange would convey the subsurface rights to an additional 166,278 acres of the remaining most highly prospective lands to six Native Corporation groups and their industry partners in exchange for 891,000 acres of surface estate with an appraised value of $538.7 million." (emphasis added)

Contrary to the corporations' claim that the critique results "...in over a 50% overstatement of the acreage actually involved in the proposed exchanges", the Oil and Gas Critique explicitly cites the acreage involved in the currently proposed exchange to be 891,000 surface acres for 166,178 subsurface acres, precisely the acreage involved--no more and no less.

Valuation:

> The corporations claim that "...the State's analysis of the valuation process is equally flawed", and maintain that "The procedure utilized to arrive at the value of these rights with respect to the tracts utilizes the standard methodology followed by BLM (and to some degree the State of Alaska as well) in determining whether the compensation offered to the United States is fair for granting such rights in a lease sale. There was, however, one important departure from the application of this methodology in the case of the valuations for the exchanges. In arriving at the exchange values BLM added a second amount to the amount it determined to be fair compensation for the tract. That amount was the net present value of the right of the United States to receive a royalty from any production." (emphasis added) "...It should be noted that most of the participants for whatever reason were not as successful as Old Harbor in passing on that risk."

As mentioned earlier in the review of the corporations' cover letter to Secretary Hodel, there are substantial and fundamental differences between the purposes for which the BLM and the State of Alaska resource evaluation methodologies are normally used and the misapplication of those methodologies which BLM has adopted to appraise the proposed exchange tracts. The BLM methodology is inadequate to determine beforehand (pre-drilling and delineation) the actual volume of recoverable reserves that may underlie ANWR

tracts, much less to calculate a "second amount" which represents "the net present value to the United States" of the future royalties from those reserves.

One need not rely solely on the division's critique to judge whether the corporations' claims in this instance are reasonable. There are several independent indicators of whether or not BLM has accurately estimated the fair value of the exchange tracts--as the corporations claim. The terms of the proxy statements from Old Harbor and Koniag provide one indication of the "value" of the ANWR exchange tracts to the respective corporations and their industry partners. Whether or not these terms are uniquely favorable, as the corporations now imply, cannot be judged because the remaining corporations and their industry partners have scrupulously avoided exposing the details of their agreements.

The monetary provisions of both the Old Harbor-Texaco contract and the Koniag-Chevron/Phillips contract independently substantiate the deficiencies of the DOI exchange valuation procedures. DOI placed the total value of Old Harbor's exchange lands, and thus the value of the ANWR tracts which it was allowed to select at $45.7 million. Yet, under the terms of the Old Harbor - Texaco agreement, if ANWR is opened and Texaco proceeds with its plans to explore the Old Harbor lands, the corporation will receive a total cash payment of at least $45.7 million plus a 14 percent royalty on any oil and gas produced from those lands. In addition, it will receive a 1.5% royalty on production from any other ANWR lands acquired by Texaco. If in fact DOI added the net present value of the future royalties to the "value" of these tracts before agreeing to exchange them (as claimed by the corporations and BLM), the net present value of the 14 percent royalty retained by Old Harbor must be zero as far as BLM was concerned. An absurd conclusion, at best, but one which follows from the logic of BLM's and the corporations' claims.

The Koniag exchange contract clearly shows that Koniag, as well, stands to receive substantially more from exploration of the ANWR tracts which it selected than DOI has determined those lands to be worth. The value of Koniag's exchange lands, and thus the value of the ANWR tracts it selected, was placed at about $77.4 million by DOI. However, Koniag's industry partners, the Chevron Group and Phillips are committed to pay Koniag a minimum of $58.3 million plus a 20 percent royalty on any oil and gas produced from those lands.

In addition, Koniag can convert the 20 percent royalty to a 30 percent net share of profits once production proceeds exceed all the exploration and development costs incurred by its industry partners. After those proceeds exceed twice the development expenditures plus interest, Koniag has the additional option to convert to a 40 percent share of net profits. Further, Koniag will retain a 0.51 percent royalty interest in any oil and gas production from ANWR lands acquired by its industry partners within six miles of the Koniag tracts, and a 0.255 percent royalty interest in any production

from ANWR lands not recommended by its industry partners for selection by Koniag but which corner on or are contiguous with the Koniag leases.

In other words, at least three oil companies, Texaco, Chevron and Phillips, obviously estimated the value of the exchanged lands to be substantially higher than the federal government's estimated value including the present value of foregone royalties. These examples alone should raise questions as to the validity of the federal estimates. It should be apparent that a competitive lease sale of the same lands would generate significantly higher revenues.

In an August 10, 1987 interview published in the Anchorage Daily News, Old Harbor's attorney, Mr. Jeff Lowenfels provides another (and very revealing) independent assessment of the reasonableness of DOI's valuation. In describing the Old Harbor-Texaco contract terms Mr. Lowenfels said "...the village could receive $45 million even if Texaco doesn't find a drop of oil or a whiff of gas...Putting aside the cultural questions as to whether a sale of Native land is a good deal or not, this is a wonderful money deal for Old Harbor." In the same article, Mr. John Doebel, Associate Regional Director for the U. S. Fish and Wildlife Service observed that land swaps such as Old Harbor's are "sweet" for Alaska Natives and noted that "They can have their cake and eat it too."

Rescission:

> The corporations claim "Another incorrect inference suggested by the Critique is that Native Corporations have the right to rescind the exchange and reacquire their refuge inholdings if the exploration efforts are unsuccessful, thereby depriving the United States of the consideration it received for granting these rights."

Rescission is only mentioned once in the division's critique of the proposed exchanges. The verbatim language in that reference is explicit and unambiguous, and more importantly, it in no way implies or suggests what the corporations now claim. The language is abstracted below from the division's critique:

"For example, one of the exchange contracts currently contains a rescission clause which enables the corporation to relinquish title to its subsurface estate in ANWR in exchange for the reconveyance of a portion--rumored to be as high as 65 percent of the surface estate which it has traded for the ANWR lands. In light of the total uncertainty surrounding whether the ANWR lands have oil and gas reserves, this provision was created to enable the corporations to regain title to a portion of their former surface inholdings should exploration by their industry partners prove nonproductive." (emphasis added) One can contrast this statement with that of the corporations that "...While it is true that at this time one participant has negotiated a

limited right to rescind the exchange with respect to a portion of its lands in consideration for the payment to the United States of an overriding royalty...", and decide independently whether "substantial doubts" have been cast on the validity of the division's analysis.

Structures:

> The corporations attempt to discredit the critique's assessment that DOI has failed to accurately identify and map many of the potential hydrocarbon-bearing structures within the Coastal Plain. They exclaim, "What is even more surprising and calls into question the accuracy of these assertions is that a little more than seven months ago the Governor, in giving his reasons for withdrawing the State from the exchange negotiations, stated that a major reason for his action was the unreliability of the available data and the lack of sufficient data for the State to be able to make selections." They also remark, although it is surprisingly to their detriment that they do so, that "The one participant whose industry advisors had the data from the KIC well, however, selected on the structures mapped by DOI."

Again, the corporations attempt to mischaracterize the public statements of the Governor and to recast a voluminous written record which memorializes the thoughtful development of the Governor's decision to oppose the exchanges. As described earlier in this document, the Governor's public statements reflect and are totally consistent with the opinions reflected in the Division of Oil and Gas Critique--that there are insufficient data to value the tracts for exchange purposes. The data were insufficient in February when the Governor first addressed the issue publicly, and they remain insufficient today.

While there are insufficient data to determine the actual value of the ANWR tracts, there are sufficient data to proceed with competitive leasing. In fact, the available geophysical data are sufficient to identify many larger subsurface traps in ANWR, and to allow the corporations and their industry partners to high-grade those structures in their non-competitive selections--facts clearly supported by the selection patterns which have emerged.

It was no coincidence that Koniag and its industry partners, the Chevron Group (which has access to the KIC well data) and Phillips, were willing to expend the full appraised value of Koniag's exchange lands to purchase only 3183 acres overlying a single prospect. The fact that DOI has mapped a basement structure beneath that acreage is irrelevant to the division's claim that DOI failed to map all identifiable structures in the Coastal Plain during its exchange valuation analysis. What is relevant is the implication this selection pattern has in documenting the additional "value" already received by those involved from the earlier ASRC exchange.

The corporations find it "incredible" that the Division of Oil and Gas was able to identify structures which DOI, by its own admission in the 1002 Report, was unable to map properly for its recoverable resource estimates. However, the facts remains that it did so, and that its maps were completed more than six months before the exchange selection patterns were revealed. Moreover, a direct overlay of the division's maps with the selection pattern map confirms the correlation of subsurface structures beneath each selection approved by DOI. It is inconceivable that the corporations and Interior would argue that only 34 of the 73 tracts selected overlie structures--even in light of the fact that the corporations and their industry partners were willing to exchange valuable cash advances and the corporation-owned surface lands for the opportunity to explore the tracts?

DOI apparently experienced technical difficulties in its attempt to map the structures involving the younger rock units over which many of the selections in the western part of the coastal plain occur. In the Draft 1002 Report, DOI states that "...no prospects were adequately resolved within the detached and highly deformed Mesozoic and Tertiary rocks." It further said "...the probability of traps occurring in the subsurface in this structural setting is high, although determining their location on the basis of existing seismic data is difficult." As anyone familiar with resource analysis should know, if one cannot locate and accurately map a prospect, one certainly cannot produce an accurate appraisal of the value of the overlying tracts.

Pre Lease Exploration:

> The corporations challenge the critique because they believe that it downplays "...the advantages of the United States having the down-hole data from such activities (drilling of exchanged tracts)..."

What the corporations do not acknowledge is the commercial value to them and their respective industry partners of the opportunity to "have the first look" and to have gained that opportunity noncompetitively and at the expense of the public treasury. The fact remains that if ANWR is opened to leasing, a finite number of exploratory wells will be required to either confirm or condemn the area's petroleum potential--something that cannot be determined *a priori* from BLM's analysis.

The real issues are whether the public treasury should benefit from the bonuses and rentals instead of the corporations, whether all industry representatives will have an equal opportunity to compete openly for the rights to explore and develop the area and, in the final analysis, whether trades negotiated in private among a select group of corporations and industry representatives to achieve collateral federal purposes will supplant a long history of competitive leasing of public resources which has successfully assured receipt of fair market value.

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SUMMARY OF THE KONIAG-CHEVRON/PHILLIPS ANWR
LEASE ACQUISITION AGREEMENT

Source: Koniag, Inc. Proxy Statement, October 8, 1987

Koniag, Inc. may exchange the surface estate of approximately 112,564 acres of its land with an attributed value (negotiated by Koniag and Department of the Interior) of about $77.4 million for the subsurface oil and gas rights to approximately 3,186 acres in ANWR, valued by DOI at about $77.4 million.

Major Points

* The Chevron Group and Phillips make a total cash payment of at least $58.3 million** to Koniag for the lease option. The final cash payment is likely to be in excess of $60 million.

  **note: For less than one-half interest (49%) in the Koniag leases, Phillips pays the bulk (about $55 million) of the total cash payment.

* The Chevron Group and Phillips pay to Koniag:

  1) a 20% royalty (which can later be converted to a 40% net profit share) on production from Koniag's ANWR leases.

  2) a 0.51% royalty on production from any other leases acquired by the Chevron Group within six miles of Koniag's ANWR leases.

  3) a 0.255% royalty on production from any ANWR leases acquired by the Chevron Group that were not recommended for selection by Koniag by the Chevron Group and which corner on or are contiguous to the Koniag leases.

* Koniag retains an easement to the surface lands it exchanges and subsistence rights to use those lands in perpetuity.

Specific terms

The Koniag lease acquisition agreement provides the Chevron Group with a 51% working interest and Phillips with a 49% working interest in the oil and gas exploration/development/production rights in Koniag's ANWR leases.

1. The Chevron Group makes an execution payment to Koniag of $510,000.

2. The Chevron Group makes quarterly interest payments to Koniag on an assumed principal escrow account balance of $2.55 million. To date, $322,960 has been paid.

3. The Chevron Group makes four progress payments of $255,000 each to Koniag upon the occurrence certain events, such as

reaching agreement with DOI on the exchaange lands, shareholder approval and execution of the agreement by Koniag and the Secretary of the Interior.

4. The Chevron Group pays to Koniag approximately $1.8 million upon lease issuance and satisfactory opening legislation (subject to downward adjustments based on prior overpayments).

5. The Chevron Group pays to Koniag "drilling premium payments" totalling about $1.7 million (less prior credits) subject to the occurrence of actual drilling within an advantageous timeframe.

6. The Chevron Group pays to Koniag a "bonus differential payment" equal to 51% of the amount by which the average per acre bonus of any federal ANWR leases the Chevron Group acquires in lands proposed by the Chevron Group for selection by Koniag, exceeds three times the average per acre bonus amount the Chevron Group would have paid Koniag had such land been selected by Koniag.

7. The Chevron Group pays Koniag a 0.51% royalty interest on production from any lands acquired by the Chevron Group within six miles of the Koniag ANWR leases.

8. The Chevron Group pays Koniag a 0.255% royalty interest on production from any ANWR leases acquired by the Chevron Group that were not recommended for selection by Koniag by the Chevron Group which corner on or are contiguous to Koniag's ANWR leases.

9. Phillips pays Koniag $1.0 million upon execution of the agreement.

10. Phillips pays Koniag $7.25 million upon enactment of acceptable opening legislation.

11. Phillips pays Koniag $27.5 million upon issuance to Phillips by Koniag of the Koniag ANWR leases.

12. Phillips pays Koniag $19.25 million upon the third anniversary of lease issuance.

13. The Chevron Group and Phillips pay Koniag a 20% royalty on production from Koniag's ANWR leases. The 20% royalty can be converted by Koniag to a 30% net profit share at the time total proceeds from production exceed exploration/development expenditures, or a 40% net profit share when total proceeds exceed twice the lessees expenditures.

14. The Chevron Group and Phillips pay Koniag approximately $29,000 in annual rental payments for the twelve years of the lease term.

SUMMARY OF THE OLD HARBOR-TEXACO ANWR LEASE ACQUISITION AGREEMENT

Source: Old Harbor Proxy Statement, August 28, 1987

Old Harbor Native Corporation may exchange the surface estate of approximately 90,000 acres of its land with an attributed value (negotiated by Old Harbor and Department of the Interior) of about $45.7 million for the subsurface oil and gas rights to approximately 58,000 acres in ANWR, valued by DOI at about $45.7 million.

Major Points

* Texaco makes a total cash payment of at least $45.7 million to Old Harbor for the lease option.

* Texaco pays a 14% royalty to Old Harbor on production from Old Harbor's ANWR leases and a 1.5% royalty from production on any other leases acquired by Texaco in ANWR.

* Old Harbor retains an easement to the surface lands it exchanges and subsistence rights to use those lands in perpetuity.

Specific Terms

1. Texaco reimburses Old Harbor for expenses Old Harbor incurs in the land trade process.

2. Texaco pays Old Harbor $5 million in a lump sum and $50,000 quarterly payments immediately upon shareholder approval of the agreement. The quarterly payments run until the required opening legislation is passed, or December 31, 1993, whichever comes sooner.

3. Texaco pays Old Harbor $2 million in a lump sum upon congressional passage of the required opening legislation.

4. Texaco pays Old Harbor $38.7 million after opening legislation and lease acquisition.

5. Texaco pays Old Harbor a 14% royalty in any production from Old Harbor's ANWR leases.

6. Texaco pays Old Harbor 1.5% royalty on production from any other ANWR tracts which Texaco acquires.

7. Texaco agrees to make an effort to train and employ Old Harbor residents, and provide a $10,000 annual scholarship fund for Old Harbor children.

THE ANWR LAND EXCHANGES

SUMMARY OF WHAT THE ANWR DATA AND RESOURCE ANALYSIS METHODOLOGY CAN DO

The Coastal Plain Data

The data collected from the coastal plain of ANWR and adjacent areas consist of about 1300 line miles of seismic surveys constituting a reconnaisance grid approximately 3 by 6 miles, other regional geophysical surveys, surface geologic information, and subsurface geologic information from wells drilled outside the coastal plain area.

The data are sufficient to support and defend the conclusion that the coastal plain of ANWR has extremely high potential for holding commercial quantities of petroleum.

The data are also sufficient to identify many of the larger, potential subsurface traps beneath the coastal plain, enabling informed groups to high-grade (in the non-competitive selections or in competitive bidding) the most prospective tracts based upon the current knowledge.

The selection pattern clearly indicates the correlation between the currently known, most prospective subsurface structures and the most desireable tracts.

Resource Analysis Methodology

This methodology is commonly used to provide a risked, probabilistic range of estimates of undiscovered, recoverable resources (in barrels of oil or cubic feet of gas) in potential hydrocarbon-bearing traps in the subsurface.

The methodology can be an effective management decision tool to help a company compare the relative prospectiveness of different frontier areas and specific regions within those broad areas.

The estimates of undiscovered, recoverable oil and gas, when combined with unknown, but estimated, future economic variables, can be used to define a minimum acceptable bid range (in dollar value) for the purpose of evaluating bids in a competitive lease sale.