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# A Case Study of the Norton Sound Alaska Marine Mineral Lease Sale Process

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## Abstract

This paper discusses the planning and results of the first offshore gold placer lease sale ever held in Federal waters. In March and June 1991, respectively, the Minerals Management Service published the final Environmental Impact Statement and the Final Notice of Sale for a Federal offshore mineral lease sale in Alaska's Norton Sound. The sale area was adjacent to a recently mined offshore area in State waters and upland areas having a long mining history. The sale area focused on acreage that has the highest potential for placer gold and covered 34 whole and partial blocks encompassing about 147,000 acres. The final EIS estimated the area's recoverable gold to range from 530,050 troy ounces (mean case) to 1,060,000 troy ounces (high case). The area is located between 3 mi and 14 mi offshore Nome in water depths ranging from 66 ft to 99 ft.

The Notice of Sale outlined the terms and conditions of the sale and contained restrictions on the operations in the form of stipulations and Information to Lessees clauses. Restrictions provided environmental protection and responded to concerns expressed during the prelease process. The Environmental Impact Statement and other administrative steps leading to this sale were accomplished through a unique cooperative agreement and Coordination Team effort with the State of Alaska and local interest groups. The lease sale was scheduled for July 24, 1991. No bids were received, and a sale did not occur.

Several companies were contacted and requested to provide some insight as to why no bids were submitted. Various reasons were given including low gold prices, limited availability of mining vessels, lowest point of price curve swing, difficulty in obtaining capital financing, better opportunities in State waters, and legal uncertainty.

## INTRODUCTION

Over 5 million ounces of gold were recovered from onshore placer deposits in the greater Nome district since 1898 when gold was discovered at Anvil Creek. Deposits occurred primarily as glacial-fluvial and glacial-marine

placers associated with strandline deposits, such as the modern beaches at Nome or the elevated ancient beaches located further inland (Nelson and Hopkins, 1972). Gold was initially eroded from lode deposits on the Seward Peninsula and reworked by fluvial, glacial, and marine processes. Subsequent to deposition, enrichment factors such as marine scour and fluvial erosion reworked the Pleistocene-age glacial material.

From 1985 to 1990, gold placers were extracted from State waters within the area covered by the glacial deposits. Western Gold Exploration and Mining Company, Limited Partnership (WestGold), conducted mining activities on part of their 21,750-acre leasehold offshore Nome. WestGold verified the existence of the deposit and proved the viability of conducting mining operations within the State 3-mi zone. Over 100,000 ounces of gold were recovered by the mining vessel *Bima* from 1986 to 1990.

WestGold's successful operations provided the stimulus to offer for lease submerged Federal lands in the Norton Sound in the vicinity of Nome, Alaska, for mining and recovery of gold and any associated minerals. Because offshore mining of gold placer deposits was presently occurring in State waters in Norton Sound, the State of Alaska expressed the need to evaluate the feasibility of developing mineral resources and developing technical guidelines and procedures for safe, effective, and environmentally sound exploration and mining of mineral resources on the Outer Continental Shelf (OCS). In order to provide a complete record of events leading to the sale, this paper addresses the planning and results of the first offshore gold placer lease sale offered in Federal waters.

## RESOURCE POTENTIAL

In the Federal OCS, submerged beach ridges occur on the sea bottom at depths of 21, 24, and 27 m (U.S. Department of the Interior, 1987). Buried ancient channels are also recognizable on seismic profiles. Because subsurface samples from the OCS are sparse, little resource

information exists for gold deposits in Federal waters. However, these geomorphic features are potential targets in the sale area. On the basis of the available data, the highest potential blocks in the proposed sale area may be those closest to the gold-bearing glacial deposits offshore Nome. The glacial deposits appear to straddle the Federal-State boundary. The final Environmental Impact Statement (EIS) estimated recoverable gold ranges from 530,050 troy ounces (mean case) to 1,060,000 troy ounces (high case) in the sale area. Because of WestGold's early success in mining gold placers in State waters, the acquisition of more leases was a logical next step.

## COORDINATION TEAM

In November 1987, WestGold (formally Inspiration Gold, Inc.) wrote to the Department of the Interior (DOI) to request that a lease sale be held for gold mining in Federal waters near Nome, Alaska. In the same month, the State of Alaska requested a cooperative agreement with the Minerals Management Service (MMS) to establish a joint Federal-State task force. The Governor requested in his letter to the Secretary of the Interior that a task force be established to

... evaluate the feasibility of development of mineral resources adjacent to the coast and to develop safe technical guidelines and procedures for the safe, effective, and environmentally sound exploration and mining of the resources. The task force should also review the economic feasibility and look at the needs for Environmental Impact Statement (EIS) development and to identify renewable and non-renewable resources that are present in the Norton Sound and possible use conflicts.

In response to the Governor's letter, the Secretary (DOI) agreed to establish a joint Federal-State task force and to designate the Director of MMS to implement the program.

The joint Federal-State task force was later organized into the 31-member Coordination Team (CT) that was established in February 1988. From its inception, the CT was envisioned as a forum for the exchange of information and expertise and to consult on decisions leading to the lease sale. The CT was integrated into all major steps of the decision process, including scoping, review of the first draft EIS, public hearings, two workshops, second draft EIS, final EIS, and the draft and final Notice of Sale. The CT organization consisted of two co-chairmen, one appointed by the Secretary of the Interior and one appointed by the Governor of Alaska. A coordinator was designated by MMS and the State to facilitate the exchange of information and the planning or scheduling of CT activities. The CT process worked extremely well in maintaining communication throughout the prelease process by highlighting important issues early, stimulating constructive dialogue between parties, and promoting timely resolution of sensitive issues.

MMS and the State believe that the CT process provided the mechanism to successfully complete all the necessary administrative steps leading to the sale.

## PRELEASE PROCESS

A Request for Comments and Nominations was issued on March 11, 1988. This request concerned an area covering approximately 77 blocks encompassing some 350,000 acres. Three companies responded to the request. The Area Identification was announced on May 27, 1988, and covered some 40 blocks totaling about 178,000 acres to be analyzed in the EIS. This area was identified from the evaluation of comments received from the request and results of the scoping process. Central issues cited pertain to the effects of mercury and other trace metals on water quality, marine biota, fuel spills, and subsistence resources and to operations in severe weather conditions and consistency with the Alaska Coastal Management Program.

## FIRST DRAFT ENVIRONMENTAL IMPACT STATEMENT

On November 23, 1988, the first draft EIS was issued (U.S. Department of the Interior, 1988). Based on available data, major impacts from the proposal were anticipated on water quality, commercial fisheries, subsistence harvest patterns, and sociocultural systems. The proposal did not include stipulations or Information to Lessees (ITL) clauses specifically designed to mitigate adverse effects for any mining operation. In January 1989, a public hearing was held in Nome on the first draft EIS. Federal, State, and local government agencies, as well as members of the public, expressed concern that the information used for the first draft EIS was inadequate for proper analysis and reasoned decisions. Lack of information was of concern in the following subject areas: the actual level of mercury in the food chain; levels of mercury in humans; and the effect of dredging on benthic habitats, particularly for red king crab. The MMS initiated studies to obtain information on these subjects, both through field research and assistance from subject-matter experts during two public workshops. In September 1989, a decision was made to prepare a second draft EIS using new information on water quality and trace-metal analysis in human hair.

## MITIGATION

Through extensive review by the MMS, the Environmental Protection Agency (EPA), Federal public health agencies, the Fish and Wildlife Service, and various other

Federal and State agencies, including comments from the CT and the public, mitigation measures were formulated that MMS believed would adequately protect environmental resources. There could be a potential risk of adverse effects to the environment if the areas proposed for offering were explored and developed. The risk would be related to environmental effects that could result from the mining, transportation, and metallurgical processing operations of a mining industry. Socioeconomic effects from onshore activities of this industry could have local and (or) State implications. The stipulations that were developed by MMS to reduce the type, occurrence, and extent of adverse effects associated with the proposal are listed below.

*Environmental Survey and Monitoring Program and Operations Management.*—This stipulation required lessees (1) to conduct environmental surveys that addressed water quality, certain trace metals, and the presence, distribution, and composition of biological communities, including marine mammals and red king crabs and (2) to identify existing conditions and any trends or changes resulting from mining activities.

*Prohibition of Use of Mercury or Other Toxic Substances in Processing.*—This stipulation prohibited use or storage of mercury or any other toxic substance for testing and (or) beneficiation of placer minerals onboard dredging or other vessels.

*Baseline and Monitoring Studies on Mercury Levels in Humans.*—This stipulation required lessees to monitor mercury levels in the Nome population (1) if baseline information collected by the MMS or other Federal, State, or regional health agencies indicated potential human health problems according to World Health Organization safety standards and (2) if site-specific environmental survey and monitoring or other information indicated lease activities may contribute to mercury levels adversely affecting human health.

*Protection of Archaeological Resources.*—This stipulation met the Department's statutory requirement for protection of archaeological resources.

In addition to these stipulations, ITL clauses were provided in the final EIS to address MMS policy and practices and special concerns about the lease sale area. Lessees would be advised of the existing requirements pertaining to bird and mammal protection, specifically for the Arctic Peregrine Falcon, which is listed as threatened by the DOI and is protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The conduct of OCS mining activities would not conflict with the falcons if the activities were located away from known nest sites. Other ITL clauses addressed coastal zone management, subsistence activities, affirmative action, navigation safety, unitization, Clean Air Act Amendments, bonding and leasing requirements, and provision for a postlease Norton Sound review team.

## REVISED ENVIRONMENTAL IMPACT STATEMENT

In responding to concerns over the accuracy of existing water quality data in the Norton Sound, MMS contracted with Battelle Northwest in 1989 to acquire additional trace-metal data using state-of-the-art collection and analytical techniques. The sampling results indicated that the levels of mercury detected in the water do not exceed established EPA criteria. Assessments appear to indicate that dredging does not contribute significant amounts of mercury to the water column.

A decision was also made to work with the Public Health Service to obtain hair samples of women of child-bearing age for trace-metal analysis because of concerns expressed that women who are heavy consumers of seafood (for example, red king crab) may have been exposed to high levels of methylmercury (organic form of mercury). The 1989 sampling study, also conducted by Battelle Northwest, concluded that the methylmercury content in the hair samples was below harmful levels for indigenous coastal North American communities. A followup hair-sampling study undertaken during the fall of 1990 indicated that there are no consistent seasonal patterns or significantly high levels of methylmercury in the samples taken. Some samples showed a seasonal trend, and a few showed levels of methylmercury that exceeded the lower World Health Organization levels of concern (10–20 parts per million). However, the final report suggests that these higher levels result primarily from adsorption of methylmercury on to the hair from environmental sources, such as air, water, and soil and not as a result of diet.

As a result of the information acquired in November 1989, MMS held a baseline and monitoring workshop to aid in the design of studies to monitor water quality, assess habitat alteration, and examine the mercury effects on human health. Experts in the areas of water and sediment sampling, effects of trace metals in marine organisms, habitat alteration, and mercury effects on human health provided advice to MMS and CT. The workshop aided MMS in the design of environmental monitoring programs that allowed MMS to detail any changes that could result from a mining operation.

MMS also responded to the potentially unavoidable effects on habitat alteration that dredging can pose. For instance, if mineral extraction activities occur, certain immobile organisms in the mine site may be destroyed. In December 1989, MMS deleted six blocks from the proposal to protect the red king crab habitat, reducing the sale area to 34 whole and partial blocks containing approximately 147,050 acres. This decision removed an area that MMS inferred to be critical habitat for red king crabs, therefore reducing the potential effect of dredging on the population. This deletion, in conjunction with the observed distribution of trench habitat outside the sale area, resulted in a total of

about 68 percent of the trench habitat occurring outside the proposed sale area. Therefore, approximately 32 percent of the habitat deeper than the 30-m isobath occurred within the lease-sale area. The effects of mining on this area are monitored in accordance with Stipulation No. 1, Environmental Survey and Monitoring Program and Operations Management. The monitoring program allows for the identification of any unique or more limited habitats and communities and allows for mitigation of dredging activities within them. These actions minimize the effects of potential habitat alteration on marine plants and invertebrates.

After the results of these studies were analyzed, a second draft EIS and Proposed Notice of Sale were issued on June 15, 1990 (U.S. Department of the Interior, 1990). This second draft EIS included an analysis of the effects of mercury on humans, based on the information obtained from the water sampling study and the results of the MMS-sponsored workshop. A second public hearing was held in Nome, Alaska, on July 19, 1990. Most concerns relative to mercury seemed to have been alleviated.

In September 1990, WestGold officials announced permanent closure of operations in Nome, including shut-down of the offshore mining dredge *Bima* due to low gold prices and persistent operational losses. Therefore, MMS contacted industry representatives interested in the sale to determine if sufficient interest remained to continue the lease process. Results of this survey indicated continued industry interest.

The final EIS was issued on March 8, 1991 (U.S. Department of the Interior, 1991), and incorporated comments from the public hearing and other sources. MMS prepared a consistency determination on March 8, 1991, and sent it to the State for review. On April 24, 1991, the State agreed with the determination that the lease sale was consistent with the Alaska Coastal Management Program to the maximum extent practicable.

## THE FINAL NOTICE OF SALE

After a second industry survey in May 1991 indicated continued interest in the lease sale, the final Notice of Sale

was published in the Federal Register on June 21, 1991. The notice focused on acreage identified as having the highest potential for placer gold and covered 34 whole and partial blocks encompassing about 147,050 acres (fig. 1). The area is located between 3 mi and 14 mi offshore Nome, Alaska, in Norton Sound. Water depths in the area range from 66 ft to 99 ft. The notice also outlined the terms and conditions of the sale and contained restrictions on operations in the form of stipulations and ITL clauses, which provided environmental protection and responded to concerns expressed during the prelease process. Leases resulting from this lease sale would have had an initial term of 20 yr. The annual rental requirement was about \$1.00 per acre, and the production royalty rate was 5 percent of the value of any and all gold concentrates and other minerals produced for recovered minerals.

## THE LEASE SALE

On July 12 and on July 23, 1991, two separate but related legal actions were filed in district court requesting a preliminary injunction to stop the OCS Mining Program, Norton Sound Lease Sale (*Nome Eskimo Community and others v. Lujan*). The complaint was directed at all mineral activities in the Norton Basin and Bering Sea based on alleged aboriginal title to the villages' traditional hunting and fishing grounds on the OCS. Oral arguments were presented; however, the bid submission deadline for the sale closed at noon on July 23, 1991, and no bids were submitted. The Federal Government filed a note to the court stating that because no bids were received, a sale would not be held. The district court then issued an order denying the motion for a preliminary injunction.

Subsequently, several companies were contacted and requested to provide some insight as to why no bids were submitted. Various reasons were given, including low gold prices, limited availability of mining vessels, lowest point of price curve swing, difficulty in obtaining capital financing, better opportunities in State waters, and legal uncertainty. The bidders' lack of response was apparently a combination of all of the above reasons.

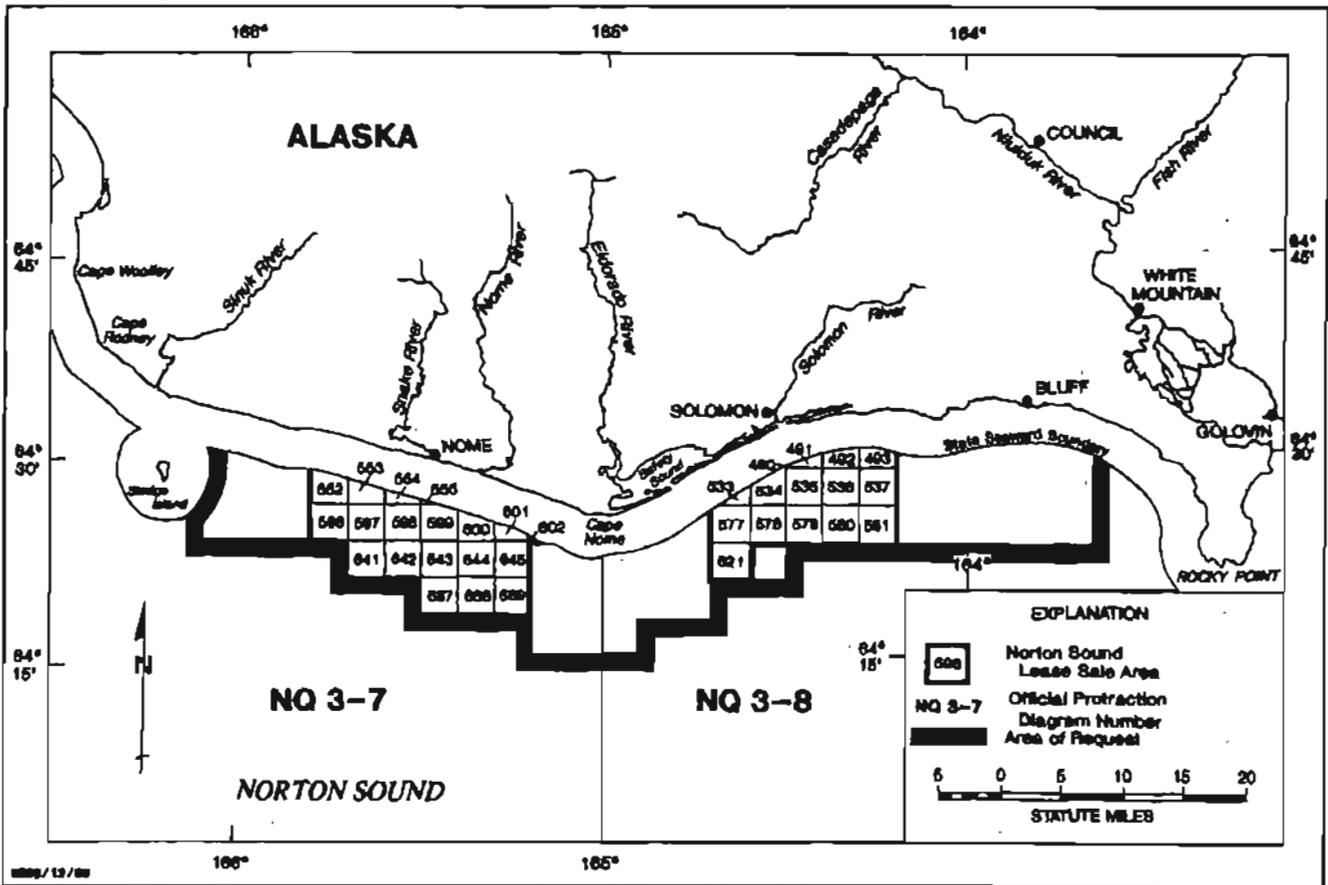


Figure 1. Thirty-four blocks of Norton Sound lease sale.

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