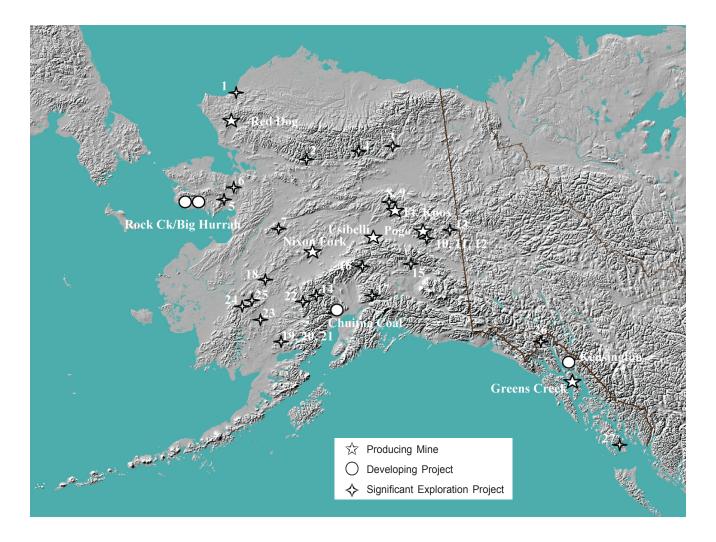
Report of the 2008 ALASKA Minerals Commission



The Alaska Minerals Commission was created by the 14th Legislature and signed into law on June 6, 1986. The enabling legislation instructs the Commission to make recommendations to the Governor and Legislature on ways to mitigate constraints, including governmental constraints, on the development of minerals, including coal, in the state.

Putting Rural Alaskans to Work



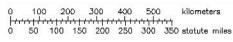


Map by Ray Sterner, John Hopkins Applied Physics Laboratory, licensed to North Star Science and Technology, LLC.

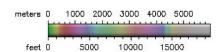
Exploration Projects

- Western Arctic Coal BHP Billiton, Ltd.
- Ambler, Sun NovaGold Resources, Andover Ventures, Inc.
- Little Squaw Little Squaw Gold Mining Company
- Nolan Creek Mine Silverado Gold Mines Ltd.
- Boulder Creek Triex Minerals Corp./Full Metal Minerals
- Granite Mountain Linux Gold Corp.
- Khotol NovaGold Resources, Inc.
- Livengood International Tower Hill Mines, Ltd.
- Golden Summit (Fairbanks District) Freegold Ventures Ltd.
- 10
- Pogo Teck Cominco Ltd. LMS International Tower Hill Mines Ltd. 11
- Stone Boy Pathfinder Mineral Services 12
- 13 LWM Full Metal Minerals Ltd.

- Whistler Kennecott Exploration Co.
- MAN Nevada Star Resources, Inc.
- Golden Zone Piper Capital Inc./Hidefield Gold Plc. 16
- 17 Lucky Shot - Full Metal Minerals Ltd.
- 18 Donlin Creek - NovaGold Resources/Barrick
- Pebble Copper Northern Dynasty Minerals Ltd. 19
- 20
- Big Chunk Liberty Star Gold Corp. Pebble South Full Metal Minerals Ltd. 21
- Terra International Tower Hill Mines, Ltd.
- Shotgun TNR Gold Corp./NovaGold Resources Inc. 23
- Nyac Tonogold Resources, Inc.
- Kisa Gold Crest Mines, Inc.
- 26 Palmer - Constantine Metal Resources Ltd.
- Niblack Niblack Mining Corp.



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Foreword

The Alaska Minerals Commission was created by the 14th Legislature, signed into law on June 6, 1986, and is authorized until 2014. The Governor, the President of the Senate, and the Speaker of the House each appoint Commission members. The current members represent the placer, hard rock, and coal mining industries and come from diverse areas of the state. The enabling legislation instructs the Commission to make recommendations annually to the Governor and Legislature on ways to mitigate constraints on the development of minerals, including coal. This report fulfills that mandate.

Many important recommendations have been implemented since the first report in January 1987 and have contributed to the growth of the industry in Alaska. Highlights of additional progress made during 2007 include:

- continued conveyance of the State's land entitlement in accordance with the Statehood Act
- infrastructure development under the Roads to Resources program
- a positive decision by the State Supreme Court regarding litigation reform that will help foster economic development, advances in resource education and workforce development
- additional progress in geological and geophysical mapping, and
- passage of legislation to re-establish a Citizens Advisory Commission on Federal Areas.

During 2007, the Commission met in Fairbanks on October 10 and held a follow-up meeting in Anchorage on November 6. The recommendations in this report are the result of those meetings. On behalf of the Commission, I would like to express appreciation to those members of the public, the Alaska Miners Association, the Resource Development Council, and the many government agencies and private organizations that contributed to the preparation of the report. The Commission wishes to thank Commissioner Notti, Department of Commerce, Community and Economic Development. Office of Economic Development staff, Rich Hughes, provided valuable administrative and professional support. Diane Somers expertly formatted and assembled the report for publication and printing.

Irene Anderson, (Chair)
ALASKA MINERALS COMMISSION

Alaska Minerals Commission

2008 Report to the Governor and Alaska State Legislature

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(www.dced.state.ak.us/oed/minerals/mining.htm)

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Executive Summary

The Alaska mining industry produced another strong year in 2007. Metal prices and the profitability of large mines continued to improve. Revenue to the State of Alaska from the minerals industry for FY 2007 increased 292% and reached \$179M. Venture capital markets for calendar year 2007 provided over \$179M in risk capital for mineral exploration in Alaska. The Pogo Mine reached commercial production in April and worked to improve operating results during the balance of the year. Construction and development of the Rock Creek/Big Hurrah, Nixon Fork and Kensington projects continued.

The industry is faced with many challenges that may limit its potential to contribute to Alaska's economy. On the federal level, the 9th Circuit Court decision during 2007 to reverse EPA and Corps of Engineers decisions on the Kensington project permits was a very significant setback. House Bill 2262 by Congressman Rahall was passed by the House. If passed into law in its current form, it will eventually lead to the end of mining on federal land. On the State level, multiple anti-mining ballot initiatives have been submitted and are out for signature gathering. These measures are drastic and extreme measures that, if passed, would eventually result in the near shut down of all metal mining in Alaska.

The Commission looks forward to working with the Governor, the Legislature, and the Agencies to build the framework for a robust, sustainable, environmentally responsible industry that benefits Alaskans in all corners of the state.

Current Recommendations

The Commission encourages the Governor and Legislature to act on the recommendations provided in this 2008 report, including the following:

- Avoid the designation of withdrawal of lands for the purpose of stopping mineral development
- Avoid legislation that could jeopardize the thorough and transparent permitting process for mineral properties development
- Support State assumption of the NPDES primacy process by passing necessary legislation and providing adequate budget
- Work with EPA in developing considerations for site specific natural background water quality legislation and regulations
- Develop a database listing all mixing zones issued in Alaska and develop a public presentation that explains the need for mixing zones; avoid legislation changing the need for mixing zones
- Support the need for developing more power generation capacity and distribution in the state
- Support the needs to develop a policy and procedure with BLM for application and conveyance of Rights-of-Ways over federal lands
- Continue to support the Roads to Resources program within DOT&PF
- Continue to work with and fund the development of Recordable Disclaimers of Interest in navigability determinations
- Continue to provide support and funding for DNR for the transfer of BLM managed lands to the State's entitlement of 104.4 million acres
- Increase the annual rate of investment in geophysical and geological surveys to a level of more than \$1M per year
- Ensure that future municipal taxes are broad-based, equitable, and stable
- Develop a working group to standardize calculation methods for the estimation of mine closure bonds
- Provide core funding within the Large Mine Permitting Team in DNR to pay for essential training and public outreach
- Enhance the recruitment and retention of essential permitting professional staff
- Enhance the development of foreign investment in the minerals industry in the state
- Fund the AMEREF program in the amount of \$100,000 annually
- Support the UAF Administration and Board of Regents in providing needs for the College of Engineering and Mines
- Encourage the Congressional delegation to support the passage of the Energy and Mineral Schools Re-investment Act in Congress
- Continue and enhance programs to improve the availability of professional and trained workers for the mining industry
- Work with the federal government to assure that inholders in the National Park System are treated fairly and equitably.

Findings and Recommendations Part A: Issues Requiring State Action

A1) REGULATORY REFORM

A1a) IMPROVING INVESTMENT CLIMATE IN ALASKA BY ENSURING A FAIR AND OPEN REGULATORY ENVIRONMENT IN WHICH TO DO BUSINESS

FINDING: The controversy regarding the Pebble Project threatens the integrity of Alaska's land management and regulatory process and if not managed appropriately, will jeopardize Alaska's ability to attract venture capital to support further growth of the mining industry.

Land use priorities for the Bristol Bay region were established years ago by legislative action, including the designation of Federal and State parks in areas deemed worthy of special protection. The Pebble Project is located on land that is open for mineral entry selected by the State in part for its mineral resource potential. The mineral rights in the area were acquired in accordance with Alaska laws, regulations, and land use designations. In order to exercise those rights under current laws and regulations, the Pebble Project will have to undergo intense technical and public review and demonstrate with a high degree of certainty that potential impacts can be



Caroline Moses, Geotechnician. at Donlin Creek

appropriately mitigated. Mining projects will not be permitted under current laws unless they meet these high standards.

Nevertheless, mining industry opponents are using misinformation and political influence to threaten the entire industry in an attempt to thwart the Pebble project even before the detailed scientific review necessary for the state and federal permitting process has begun. Project opponents have attempted to use the Legislature to change the land use priorities after the fact in order to advance their own private purposes.

It is appropriate to examine how a robust fishing industry can co-exist in the region in concert with a vibrant mining operation. This issue should and will be evaluated by scientists in the context of a thorough and transparent project review. If possible, the State would be well served by managing its resources to achieve both.

Proposals that ignore existing laws and regulations and seek to change land use designations after the fact on areas with valid existing rights without just compensation are ill-advised and should not be supported by the Legislature. Companies doing business in Alaska, regardless of which industry, deserve a fair and open hearing prior to conclusive decisions about a project. Alaska must remain governed by objective laws and regulations.

The Commission Recommends That:

A1a-1) The Legislature should not change land use designations in areas with valid existing rights
A1a-2) The Legislature should not jeopardize the thorough and transparent permitting process
that exists within State and Federal regulatory agencies to evaluate projects and mitigate
potential impacts.

A1b) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PRIMACY

FINDING: One of the greatest challenges for developing mines in Alaska is obtaining and operating under a NPDES discharge permit. The EPA currently conducts NPDES permitting, compliance, and enforcement for the State of Alaska, one of only four states that do not have primacy over its own NPDES program.

State primacy will make the process more efficient by allowing for improved communication between state regulators, permittees, and the public. By removing the current duplicative efforts of seeking State certification while also permitting through EPA, greater efficiency will be realized. State primacy will maintain high environmental standards while affording opportunity to address unique Alaska water issues.

In 2004, the State Legislature funded a study to determine if the State of Alaska should assume NPDES program primacy. This study prepared the State to assume a program that has been well-researched and planned with careful forethought. In conjunction with this study, the Alaska Department of Environmental Conservation (ADEC) also formed a work group to advise the State on whether to seek primacy over the federal NPDES program. This work group, consisting of representatives from the NPDES-regulated community, including the mining industry, recommended that the State seek primacy for NPDES.

Legislation was passed in 2005 that directed ADEC to draft regulations and submit an application to assume primacy. Since then, ADEC submitted a primacy application to EPA for review in June 2006, and a subsequent revised application was submitted for further review in October 2007. A final revised application is anticipated to be ready for submittal to EPA by May, 2008. The projected schedule for complete assumption of the program is 2011.

Many of the EPA comments have required regulatory changes by ADEC and statutory changes by the Alaska Legislature. Ongoing Legislative support for statutory changes is mandatory for final approval of the NPDES program application.

In order to ensure responsible assumption of the NPDES program, ADEC has been actively developing NPDES program capacity and expertise. This is essential for a smooth program transition. Continued legislative support for ADEC budget requirements to support training and program expansion is a necessary component of assuming NPDES primacy.

The Minerals Commission supports the State of Alaska assuming NPDES primacy.



Mine laborers Joe Arca of Juneau and Loren Jackson of Kake, Kensington Project

The Commission Recommends That:

A1b) The Governor and Legislature support ADEC in assuming NPDES primacy by passing the necessary legislative changes and providing an adequate budget that will effectively support the State in assuming full responsibility for regulating discharges to Alaska's waters.

A1c) WATER QUALITY REGULATIONS — NATURAL CONDITIONS

FINDING: ADEC's mission to protect the environment and control water pollution is primarily upheld through the employment of water quality standards. However, water quality regulations are a prescriptive set of rules that fail to consider discharge limits in waters with naturally elevated water quality parameters. This situation was exacerbated by the State's decision in 1972 to arbitrarily classify all waters in the state to the highest use due to lack of time and resources to properly conduct a more thorough and accurate classification process.

This has created serious complications for permitting and enforcement actions where natural conditions exceed the legally applicable water quality standards, as is often the case in the highly mineralized areas where mining occurs.

The State can address this situation through natural condition site-specific criteria and/or reclassification of streams to more accurately reflect their natural condition.



Jason Taka at drill site at Boulder Creek

To date, State provisions to develop natural background criteria have lacked the necessary guidance for EPA to recognize the State's authority to set natural condition standards. As a result, the provision has not resulted in an effective solution. In 2006, ADEC developed natural condition guidance that has the potential to substantially resolve the disparity between water quality standards and natural conditions. The guidance has been formally put into effect for state use, but EPA approval for use in NPDES permitting remains outstanding.

The Commission Recommends That:

- A1c-1) ADEC should pursue reclassification petitions in a timely manner
- A1c-2) ADEC should continue to work with EPA to finalize the recently promulgated Natural Background Site Specific Conditions regulations
- A1c-3) The Legislature should support ADEC in their efforts to gain EPA approval of the Natural Condition Background Site Specific Guidance.

A1c) WATER QUALITY REGULATIONS — MIXING ZONES

FINDING: Only a small percentage of the mixing zones currently authorized in Alaska relate to mining operations. There is a tremendous lack of understanding in Alaska about why mixing zones are required by many types of activities other than mining operations. Most mixing zones are needed by municipal waste treatment plants in order to comply with water quality standards. Some fish processing plants use mixing zones to achieve compliance with water quality standards, either in fresh or marine water. If these mixing zones are not authorized or renewed, there could be grave consequences on these exiting facilities.

In order to be an effective tool for all Alaska, mixing zone regulations must consider site-specific conditions, such as the productivity of the habitat compared to the potential benefit of a municipal waste treatment plant or industrial project that might require a mixing zone. Without flexibility in the regulation, many projects that could significantly improve the overall health and welfare of people throughout Alaska may be precluded.

The Commission Recommends That:

- A1d-1) The ADEC develop a database that includes all the mixing zones issued in Alaska, develop a presentation that explains the need for mixing zones and why the various facilities are dependent upon the fair and impartial application of mixing zone regulations. The ADEC should take that presentation to the public to improve the understanding of the mixing zone as a necessary regulatory tool for many facets of Alaska activity.
- A1d-2) The Legislature should not change the mixing zone laws to target the mining industry, because the unintended consequences on the mixing zones required by municipalities and fish processing facilities would be significant.

A2) ACCESS AND INFRASTRUCTURE

The lack of infrastructure, including roads, airports, and power transmission networks, increases the costs of mineral exploration, development, and mining, and substantially increases economic risk incurred by potential investors. High costs and risk levels are a deterrent to investment and, consequently, decrease the rate of mineral deposit discovery and subsequent development. Alaska mining operations are rendered less competitive in the global marketplace because of the lack of public infrastructure, limiting mining industry growth and slowing economic diversification, particularly in rural areas.

A2a) POWER SUPPLY

FINDING: Major mines require substantial amounts of electric power. The uncertainty regarding the cost and availability of power is a considerable deterrent to all forms of capital investment in Alaska, not just mining.



Chad holds artifacts found during testing,

If the existing power grid in Alaska were to be enhanced by additional generation facilities, future extensions of the grid could incrementally extend power-by-wire not only to mining developments, but also to remote communities. The existing power grid in Alaska does not have an adequately diverse fuel mix, as it is currently critically dependent upon the uncertain supply and volatile pricing associated with Cook Inlet natural gas. Coal fired generation, either via conventional plants or advanced technology such as gasification, offers the means to provide stable long term power supply to enhance the existing power grid in Alaska. Other forms of energy also provide opportunities for consideration.

The Commission Recommends That:

A2a) The Governor and Legislature should act now to prevent a future power crisis in Alaska by facilitating the study of all possible commercial forms of energy for power generation. The conclusion of this study should be implemented in a high priority manner to provide cost-effective power to the residential and rural areas of the state.

A3) STATE'S RIGHTS ISSUES

These issues have been segregated because, although they are also about ownership and access, both of which are fundamentally important in mineral investment decisions, they are not exclusively Alaska issues, and require cooperative efforts with other states at the federal level.

A3a) SECURING RIGHTS-OF-WAYS OVER FEDERAL LAND

FINDING: The State filed a Quiet Title under Revised Statute (RS) 2477 in federal court to establish state ownership of a Right-of-Way for two trails in the Southern Brooks Range. The trails run from Coldfoot on the Dalton Highway to Chandalar Lake and Caro. The trails historically and currently have been used to access mining sites primarily in the Chandalar Lake area. Rather than continue on with expensive and tenuous litigation, the parties to the issue agreed to a settlement. The BLM granted a right-of-way to the state. The cost of litigation is high and rights-of-way provide appropriate access as needed.

The Commission Recommends That:

3a) The Governor should work with the Bureau of Land Management on the need for policy to be developed and implemented to allow Alaska to apply and receive Rights-of-Ways over federal land.

A3b) ROADS TO RESOURCES

FINDING: When compared to other regions of North America, the State of Alaska has limited infrastructure including roads and power transmission lines. This lack of infrastructure and the high cost of doing business are deterrents to investment in the state. Furthermore, the burden for infrastructure development cannot by borne by rural communities that do not have viable economies. Supporting public infrastructure will encourage private investment as well as provide a framework for a viable Alaska economy.

The Commission Recommends That:

A3b) The Governor and Legislature should encourage an efficient process for approval of permits for road projects and should support road projects with significant local benefit. All statewide area plans should incorporate planning for transportation and power infrastructure to support economic as well as mineral development.

A3c) NAVIGABILITY DETERMINATIONS

FINDING: The Alaska Department of Natural Resources (DNR), Division of Mining, Land and Water, Public Access Assertion and Defense Unit, is working with Alaska Department of Fish and Game (ADF&G), Alaska Department of Law (DOL), and Bureau of Land Management (BLM) on a process which allows the State to apply for Recordable Disclaimers of Interest (RDI) from BLM. RDIs affirm that the federal government does not claim any interest in the lands underlying navigable waters for which the RDI is issued. Alaska owns lands under navigable waters through the Alaska Statehood Act, Alaska Constitution, Equal Footing Doctrine, and Submerged Lands Act of 1953.



Jerry Harmon, longterm Kensington Mine worker, mentor to Leon Demmert, Kensington Project.

Prior to 2003 changes in federal regulations authorizing the RDI process, Alaska had less than a dozen rivers and lakes determined navigable through the federal courts. Alaska has provided notice of intent to file quiet title actions on nearly 200 rivers. A quiet title action, through which the navigability of specific water bodies and title to submerged lands is determined in court, is a very time consuming and expensive process.

DNR and ADF&G coordinated efforts and began submitting RDI applications in 2003. Since then, Alaska has received recordable disclaimers of interest from BLM for thirty-one rivers and lakes, or portions thereof. The State intends to continue to file additional applications for rivers and lakes, the majority of which BLM has already found to be navigable.

A water body is navigable if it was used or was susceptible to use for travel, trade and commerce, in its natural condition at statehood in 1959. The process to determine if waters are navigable requires research of historical references, especially related to use and physical characteristics of the water body. Current use and water body characteristic data are important in establishing that a water body was susceptible to navigation at statehood, because documentation of actual historical use for many water bodies is limited, and most of the users at statehood are no longer available.

The ability of the State to authorize land use projects (e.g., oil and gas lease sales, material sales, land disposals, mining claims) depends on a determination of ownership of lands under water bodies. DNR, ADF&G, and DOL are working closely with BLM to continue this administrative process.

The Commission Recommends That:

A3c) The Administration and Legislature continue to adequately fund the DNR, ADF&G and DOL to continue work on the Recordable Disclaimers of Interest program.

A3d) LAND TRANSFER (BLM 2009)

FINDING: The "Alaska Land Transfer Acceleration Act" of 2004 allows the State of Alaska to file with the Bureau of Land Management (BLM) the priority land selections under the Alaska Statehood Act; including lands withdrawn by the Department of Interior under Public Land Orders (PLO). In 1971 and 1972 the PLO's 5150, 5151, and 5182 withdrew land north of the Yukon River along the Trans-Alaska Pipeline for "inner" and "outer" utility corridors. The BLM manages land use along the corridor, which is approximately 24 mile wide and 198 mile long. The corridor excludes leases under the Mineral Leasing Act. Alaska, not the federal government, should own the land where roads and pipelines are situated; in this case the



Peter Valka and Evan John at Donlin Creek

Dalton Highway and Trans-Alaska Pipeline. The Alaska Department of Natural Resources selected these corridors. The BLM can "lift" the PLO's through a process which includes public notice. Alaska has asked for the "lifting" of the PLO's, to no avail as BLM determined that the corridors are of "national interest".

In 2005, the Alaska Department of Natural Resources/Division of Mining, Land and Water submitted to BLM the priority land selections of 15.6 million acres. In FY 2007 Alaska received title to greater than 2 million acres of land. Alaska now has title to a total of 94.35 million acres of the 104.4 million acre entitlement. Approximately 37% of Alaska's lands were selected for the mineral value at almost 35 million acres. The present acreage claimed in Alaska under mining claims is 3.9 million acres.

The "Filing of Final Priorities" will be completed by the December 2008 deadline imposed by the Alaska Land Transfer Acceleration Act. Due to federal budget limitations, Alaska does not expect to receive final patent to the 104.4 million acre entitlement by the end of 2009. The state's participation in the process must continue to completion.

The Alaska Department of Natural Resources continues to work on land management, including updating regional land use plans and commenting on the Bureau of Land Management area plans. BLM plans to review and update the Utility Corridor Resource Management Plan beginning in 2009.

The Commission Recommends That:

A3d) The Administration and Legislature should provide adequate funding for the Department of Natural Resources to carry out the actions necessary to receive title to and manage the full entitlement of 104.4 million acres of land, including the Trans-Alaska Pipeline Corridors. This includes continuation of funding of state involvement to completion.

A4) DATA ACQUISITION

A4) GEOPHYSICAL AND GEOLOGICAL MAPPING

FINDING: Alaska is one of the most sparsely mapped regions of the world and ranks far behind many third world countries in spending for geologic data acquisition. Many potential investors in Alaska's mineral industry are discouraged by the lack of detailed geologic information, and choose to invest in areas that have more public data to guide grassroots exploration.

Only 45% of Alaska has been mapped at a scale of 1:250,000, and only 14% has been mapped at a scale of 1:63,360. For most resource assessment purposes, 1:63,360 is the minimum scale required. For comparison, the state of Nevada is mapped 100% at 1:250,000 and 44% at 1:63,360. Many states consider 1:24,000 the minimum scale for their purposes and many have significant coverage at this scale. Alaska clearly lags far behind its peers in geological mapping.

Since 1993, the State of Alaska has spent an average of \$400,000 per year on airborne geophysical surveys and the "ground truth" geologic mapping necessary for interpretation of the airborne surveys. Over the past five years, the state has spent approximately \$750,000. The geophysical work to 2007 has covered approximately 10,000 square miles, less than 6% of the State's land entitlement. At the current rate of mapping, it will take more than 100 years to have basic coverage of State land in Alaska. A healthy, growing mining industry, as well as competent State management of mineral and other natural resources, requires a much more substantial and consistent annual investment in basic geological data acquisition.

State sponsored geophysical and geological surveys provide an immediate economic stimulus. Industry often responds to state findings by staking mining claims and investing millions of dollars in prospective lands. The mapping program activities pay for themselves many times over.

The Commission Recommends That:

A4) The Governor and the Legislature increase the annual rate of investment in geophysical and geological surveys to a level greater than \$1,000,000 per year.

A5) IMPROVING INVESTMENT CLIMATE IN ALASKA

A5a) TAX CONSIDERATIONS

FINDING: Diversification of the Alaska economy is a cornerstone of all credible discussions regarding long-term fiscal planning for Alaska. With the development of the Greens Creek, Red Dog, Fort Knox, True North, and Pogo mines over the last decade and a half, it is a proven fact that mineral development can bring substantial private sector investment and employment to diverse geographic regions of Alaska, from southeast Alaska to the Interior and on to the northwest Arctic. Other projects such as Kensington, Chuitna Coal, Rock Creek, Nixon Fork, Donlin Creek, and Pebble offer potential economic development to still other parts of Alaska. including eastern and southwestern Alaska.



Carl Ahwinona Jr. at McCarthy Marsh

Mining is an industry that can bring economic development to areas both inside and outside the rail belt. Yet with much of Alaska's mineral potential located in portions of the State that remain within the unorganized borough, there are major fiscal uncertainties with respect to the private sector investment needed to explore and develop these projects. The Legislature has considered the possibility of mandatory borough formation in these areas, bringing with those proposals the uncertainty of taxation formulas, tax rates, and the overall equity of the potential tax structures that might be instituted.

The mining industry expects to contribute to state and local government. In addition to state income tax paid by corporations in all industries, mining operations pay an additional 7% Net Profits Interest (NPI) Mining License Tax to the state, regardless of where they are located in Alaska. Operations on state land pay an additional 3% NPI royalty. Mining is one of the few industries to pay this additional percentage of profits to the State over and above the corporate income taxes. In addition, all of the major mining operations make large payments to local municipal governments via property taxes or payments in lieu of property taxes.

During discussions regarding borough formation in rural areas, it has become clear that the residents in these areas do not generally endorse payment of taxes themselves to support new local government. If borough formation was effected in these areas, it is possible that the potential tax burden would be placed primarily on the major industry in the region. While the mining industry does expect to pay its fair share of future municipal government costs, if and when it is appropriate to form these local governments, it should do so by an equitable, broad-based tax such a property tax, not an industry-specific tax such as a severance tax. Without the mitigating effects of a broad-based tax, the mining industry could then end up facing a very onerous tax structure. Such uncertainty serves as a strong disincentive to the very investment and economic diversification that is so vital to rural development.

From the perspective of making the initial decision about whether to invest in Alaska, the unpredictability of future tax liability makes planning difficult. This unpredictability contributes to the disincentive against investment in mining in Alaska, for the mining industry in particular, because unpredictable operating costs, such as tax liability, combine with fluctuations in metals prices to make projection of economic risks more difficult at the development decision stage. Placing limits on the extent of new taxes for mining operations would make economic planning more predictable and thereby reduce the disincentive against investment in Alaska.

The Commission Recommends That:

A5a) The Governor and the Legislature take steps to improve the investment climate for the mining industry by ensuring that future municipal taxes, especially in those areas presently within the unincorporated regions of Alaska, are broad-based, equitable, and stable.

A5b) MINED LAND RECLAMATION AND BONDING REGULATIONS

FINDING: Reclamation bonding is a requirement for all mines to ensure there are sufficient financial resources set aside by the developer to guarantee proper mine closure in the event of mine abandonment or financial insolvency. Secure and adequate reclamation bonding protects the government and the taxpayers from inheriting the cost burden of mine closure, and prevents environmental degradation or loss of public resources that may otherwise be caused by lack of proper closure.

Past practices of basing reclamation bonding on a dollar per acre rate proved inadequate and did not address the variable closure concerns at different mining sites. For the past several years bonding requirements have been addressed through ADEC Waste Management Permits as well as DNR Reclamation Planning. These bonds have been more specifically tailored to site conditions. However, this practice has evolved with no formal guidance to ensure adequacy, reasonableness, and/or consistency. As a result, both public and industry lack confidence in the reclamation bonding process.

It is important that well-advised guidance is prepared that will facilitate accuracy, completeness, and consistency in the calculation of costs for mine site reclamation in a manner that is transparent for industry, public and government review. Other states, such as Nevada have developed standardized calculation methods, data, and models through mutual involvement of interested state and federal agencies as well as their state mining association. These programs have been well received.

The Commission Recommends That:

A5b) ADEC and ADNR work cooperatively to form a work group with the federal agencies and the mining industry to develop standardized data and calculation methods for the estimation of mine closure costs for setting reclamation bond amounts.

A5c) LARGE MINE PERMITTING CORE FUNDING

FINDING: DNR's Large Mine Permitting Team (LMPT) has the responsibility of coordinating various state agencies, and to the extent possible, federal agency's, review and authorization of large mine projects in Alaska. LMPT members are paid for their work on projects through Memoranda of Understanding (MOU) with the project proponents and their salaries are largely dependent upon this funding. While this user fee substantially reduces cost to state government for large mine projects, core funding from the State general fund is necessary to allow LMPT personnel to perform work that is not directly related to a project that is subject to an MOU. An adequate core budget should be established to assure that funding is available for critical non-project specific items, like



Lunch line at Donlin Creek - Evan John and Ricky Ciletti are at center. Photo Credit: Calista Corporation.

training and mine permitting public outreach. Funding for training is necessary to keep personnel at the cutting edge of environmental protection technology and methodology.

Further, opponents of the mining industry occasionally use the MOU structure to criticize DNR. Opponents question whether DNR is influenced by project proponents paying the salaries of the regulators. While it is the view of the commission that the DNR LMPT conducts themselves in a professional manner free of bias, the potential for a perceived conflict would be removed if core funding was established for some of the activities of the Large Mine Permitting, such as training and outreach projects.

The Commission Recommends That:

A5c) The Legislature provide core funding within the Large Mine Permitting Group in DNR to pay for essential training and mine permitting public outreach.

A5d) AGENCY RECRUITMENT AND RETENTION

FNDING: The State of Alaska is failing at recruitment and retention of State employees involved in permitting monitoring and generating development projects. The problem exists at DNR, DEC and DGGS. Pay scales and noncash compensation for professional staff is not competitive. The issue has reached critical proportions, and immediate, decisive and strong action is required in order for the Alaska mining industry to sustain its strong growth.

The oil, gas and mining industries are booming world-wide and there is a growing shortage of qualified geologists, engineers and environmental specialists. Pay scales for Alaska mineral sector professional staff are substantially below those of other state governments, federal agency counterparts, and industry. Alaska benefit packages do not offer any particular attraction to prospective employees. As a result, the State is:



Chad measures a house pit. Chuitna

- losing its best and most-experienced employees at an alarming rate
- · having great difficult attracting new employees at any level
- · unable to retain new employees that are recruited, and
- being forced to prematurely promote inexperienced staff.

Additionally, poor internal policies and procedures result in employee disincentives on the issues of "acting" positions, rehire of retired employees, and merit increases.

The State permitting process must be thorough, completed in a timely manner, and the permits issued must be legally defensible. This requires a team of highly skilled, experienced and motivated mining and environmental professionals. The State must grow its mining capability and monitoring capability in tandem with the growth of the mining industry in Alaska, or risk losing the investment it has made over past decades to attract the industry.

The Commission Recommends That:

- A5d-1) The State Increase the cash portion of professional staff compensation so that it is, at a minimum, competitive with federal agency counterparts, and that it
- A5d-2) Institute a definitive policy that allows rehire of retired State employees with no financial disincentive, and that it
- A5d-3) Pay persons that are in "acting" positions at the rate for the new job in which they are working, both for time worked and for vacation time, and that it
- A5d-4) Allow merit increases for persons in "acting" positions, and that it eliminate the "longevity steps" which inhibit merit increases for long term employees

A5e) MINERALS MARKETING AND FOREIGN TRADE

Alaska continues to enjoy growth in minerals exploration as a result of high metal prices, a very well endowed minerals heritage, and a development-friendly administration. Alaska is considered one of the premier locations in the world for mineral exploration and development investment. Most of the exploration funding comes through foreign-based companies, particularly Canada. Interest from Japan and some European countries is also noted. US-based companies are becoming more interested in Alaska as a stable investment opportunity.

FINDING: More aggressive marketing of Alaska's virtues relative to its minerals endowment and development-friendly administration would further improve exploration investment and enhance other developmental opportunities in the minerals-related industry. The effectiveness of Foreign Trade Offices maintained by the State in Korea, Japan, China and Taiwan could be enhanced by more aggressive marketing support. Investments by North



Chad checks the GPS after pin flagging.

American-based companies could be improved by a better marketing effort in strategic locations or through appropriate means. In spite of very positive improvements in interest in Alaska's mineral opportunities, it is necessary to follow through to convince and attract investment to the state. Alaska is truly one of the best places in the world to explore and develop mineral deposits.

The Commission Recommends That:

- A5e-1) The Department of Commerce, Community and Economic Development work with the Alaska Minerals Commission and the Alaska Miner's Association to provide information, marketing materials, and instruction to the Alaska Foreign Trade Offices in Asia; and
- A5e-2) The Office of Economic Development be provided with adequate funding to expand the presence at domestic and foreign trade shows at which investment in Alaskan mineral exploration, development and mining projects can be promoted; and
- A5e-3) The State continue with high-level Trade Mission efforts that promote development of coal resources in Alaska.

A6) EDUCATION, RESEARCH, AND WORKFORCE

A6a) AMEREF

FINDING: The "Alaska Resource Kit", which is available for use in the statewide public school system, is an excellent program for educating Alaska's students in the issues and fundamentals of resource development. The program provides a broad-based resource education for Alaska's students that is critical to their future ability to make well reasoned decisions about the use and protection of Alaska's wealth of natural resources. The kit incorporates technical, economic, and environmental aspects into a balanced program that addresses mineral, timber, and energy development.

AMEREF is supported by the resource industries in partnership with the State of Alaska. The resource industries fund AMEREF's production and replacement of all teaching materials and ensure the technical accuracy of the material. The resource industries also organize and distribute the education kits. AMEREF is looking to expand the program by obtaining additional funding through various grant programs.

The AMEREF program's successful integration into the State of Alaska school systems has been the result of past cooperative efforts between AMEREF and the Alaska Department of Education. A DOE position was specifically designed to work with AMEREF to ensure



Marvin and Ambrose Takak at Boulder Creek

that the curriculum was developed in a manner that would meet State standards. This position also provides teacher training to familiarize Alaska teachers with the program and to facilitate its application in the classroom.

The Commission Recommends That:

A6a) The Governor and the Legislature should appropriate \$100,000 to the Division of Teaching and Learning Support, Minerals and Energy Education Program for curriculum development of AMEREF. Industry will continue to support all AMEREF materials, but the State's support in funding Department of Education approved curriculum development is essential to the program's integrity.

A6b) COLLEGE OF ENGINEERING AND MINES

FINDING: The College of Engineering and Mines at the University of Alaska Fairbanks (UAF) has been educating engineering students since 1915 when the school was founded as the Alaska Agriculture College and School of Mines. UAF recently integrated the School of Mineral Engineering (SME) and its degree programs into the College of Engineering and Mines (CEM). The integrated program, located on the Fairbanks campus (UAF) now offers undergraduate and graduate degree programs in mining engineering, geological engineering, petroleum engineering as well as electrical engineering, mechanical engineering and civil engineering. The program also offers a graduate level degree in mineral processing.

Two essential components of a successful engineering program at UAF include faculty and student recruiting. The CEM is well positioned with respect to scholarships that it can offer to undergraduate and graduate students and it has established and aggressive recruiting program that should bear fruit in the future. Faculty recruiting on the other hand is more problematical, in that there is a high demand for well trained and experienced professionals in the minerals industry.

In order for the University of Alaska to continue to be successful in the development of world class engineers the Legislature and the University must fund these essential programs through the University's budget at a level that ensures continuation of these programs. The retention of faculty and staff and the recruitment of new staff are essential to the long term success of CEM.

A new source of Federal funding for Accreditation Board for Engineering and Technology (ABET) accredited educational programs is the Energy and Mineral Schools Reinvestment Act (EMSRA) which would provide funds for existing programs at accredited petroleum and mining schools, applied geology and geophysics programs, and to individuals for degrees in petroleum & mining engineering, petroleum/mining geology & geophysics and mineral economics.

Since the dissolution of the U.S. Bureau of Mines there has been a need to develop an alternative source of funding to support academic and research activities within ABET accredited universities related to mineral exploration, mining, mineral processing, and mine reclamation.



Leon Demmert, new miner, originally of Angoon, now of Juneau

In June 2006 the U.S. House of Representatives passed a bill entitled the Energy and Mineral Schools Re-investment Act. The House bill would have provided a defined source of funding for universities with ABET accredited programs in geological, mining, mineral processing, and petroleum engineering. The total expected annual designated funding for these universities was on the order of \$200 million. The legislation failed to pass the Senate.

The University of Alaska Fairbanks (UAF) is embarking on a planning project for a new Energy and Technology Building to be constructed on the Fairbanks campus. The new building will be located adjacent to the Duckering Building which houses the College of Engineering and Mines (CEM) and will provide critically-needed space for expansion of the College's research and academic programs. The new facility will provide approximately 60,000 ft2 of office, laboratory, and teaching space. A detailed needs analysis is currently underway in order to better delineate the building configuration. In order to begin the formal planning process, UAF has requested \$2.5M in planning funds as part of the FY09 capital budget request. This funding was approved by the UA Board of Regents at its November meeting and the request is now before the Governor. Total project cost is expected to be between \$30M -\$50M, with construction commencing in FY10 or FY11 and completion roughly 1.5 years later. As the lead engineering research unit in the state and the focus of the state's academic programs in oil and gas and mineral resources, CEM is leading the development of the engineering workforce and applied research in these areas. Consequently, the new Energy and Technology Building represents a critical investment in the future of Alaska's energy and resource economy. Research carried out within the new facility will play a key role in advancing the technology associated with resource extraction methods and provide new energy technology to aid Alaska's development in all sectors and areas.

The Commission Recommends That:

- A6b-1) The Legislature ensure that the UAF Administration and Board of Regents has the resources necessary to support the engineering degree programs at UAF.
- A6b-2) The Alaska Legislature and Administration do all they can to encourage the Alaska delegation in Washington, D.C. to fully support and do what ever it can do to ensure passage of the Energy and Mineral Schools Re-investment Act.
- A6b-3) The Alaska Legislature and Administration fully fund the planning funds necessary for the new CEM building on the UAF campus as included in the University's capital budget request.

A6c) WORKFORCE DEVELOPMENT

FINDING: The revival of the mining industry is continuing and shows indications of long term strength, but is being hindered in Alaska, and other venues, by shortages of skilled and professional employees. The current revival was preceded by a long period of subdued minerals demand that discouraged the need for large numbers of skilled and professional workers. Workers migrated to other industries and have become comfortable in those pursuits. The resulting worker shortage has created a serious problem. This shortage combined with worker shortages in peripheral and other natural resource industries, such as Construction, Government, and Oil and Gas has exacerbated the dilemma of the mining industry. Professional and skilled workers are needed to respond to the increased demand for minerals exploration, development, and production.

Workforce development initiatives have been developed and implemented to respond to the needs for providing workers. A program dubbed Putting Alaska's Resources to Work (PARW) has been developed to coordinate, enhance, expand/extend workforce opportunities. These efforts/programs include, but are not limited to:

- Recruitment and retention programs for faculty and students at the College of Engineering and Mines at UAF:
- Formation of the Alaska Process Industries Careers Consortium (APICC):
- Enhancement and extension of the Mining and Petroleum Training Program (MAPTS);
- The development of process technology programs at, for instance, the Tanana Valley Campus (TVC) of the University of Alaska;
- Restructuring of the Alaska Workforce Investment Board (AWIB) within the Department of Labor and Workforce Development;
- Involvement of the Alaska Minerals and Energy Resource Education Fund (AMEREF) in the effort to attract and educate K through 8 grades about the minerals industry;
- Involve other governmental agencies in the effort; these agencies include DEED, DOLWD, DCCED, DNR, DHSS and UA;

The efforts are very expensive and arduous. Support for the PARW and other industry consortia to implement the strategies of the PARW workforce development and employment plan is needed.

The Commission Recommends That:

- A6c-1) The Administration and the Legislature fund programs to attract worker to the mining industry training programs including grants and scholarships to finance costs of that training; and
- A6c-2) The Administration and Legislature support the existing training programs by funding those programs to the extent needed; this includes the recruitment and retention of faculty and students to the engineering programs statewide and providing funding for facility construction in the engineering programs; and
- A6c-3) The Administration and Legislature support the improvements of salaries of engineering faculty at the University of Alaska which are lower than at competing universities and colleges and peers in industry.

Part B. Federal Issues of State Concern

B1) COAL PROGRAM FUNDING

FINDING: The Alaska coal regulatory program (Alaska Program) is jointly funded by the federal and state government (50/50 matching grant from the Office of Surface Mining). Appropriations for regulatory grants to western states have not kept pace with increases in coal production and the related regulatory workload.

Alaska's program has 3.75 full time equivalent positions including geologists, a manager, a grants specialist, and administrative support staff.

Demands on the Alaska Program continue to grow. During 2008, the program expects to receive four new surface mine projects. In addition to the expected new mining permits, there has been continued interested in exploring for coal in new areas or areas of the state that have, up to now, been dormant. BHP Billiton is exploring on 1.7 million acres on the Western Arctic Coal exploration Project on the North Slope of Alaska. During the summer of 2007, BHP Billiton had a successful drilling program and plans to increase the size of their exploration programs during the 2008 season. There has been renewed interested in the Bering River and Mat Su Valley coal fields and numerous requests for general information on coal resources throughout the state.

Adding to the operating costs of the coal program is the remote locations many of these projects are found in. To inspect a remote location such the Western Arctic exploration program it may cost several thousands of dollars.

Legal costs are also mounting for the coal program. In 2007 the Alaska Coal Program received a Lands Unsuitable for Surface Coal Mine Operations petition for the Chuitna Watershed. The petition covers approximately 150 square miles with only a portion overlapping the Chuitna Coal Project. The Alaska Program expects to incur legal fees associated with the petition.

The Commission Recommends That:

B1) The Governor and Legislature encourage the Alaska Delegation to seek full funding for Alaska's Coal Regulatory Program.

B2) PRIVATE INHOLDINGS IN NATIONAL PARKS

FINDING: The economic constitutional rights of private property owners, including owners of valid mining property in-holdings within National Parks in Alaska must be recognized, protected and respected. Action is needed to resolve the political and economic realities related to mineral development in National Parks given: (1) the need for administrative finality (denial/approval of proposed mining operations), (2) constraints within the federal acquisition program and (3) NPS responsibility to protect park resources.

The Alaska delegation previously sponsored legislation which allowed for miners who owned mining property within the Denali National Park to unilaterally move their property into a takings process whereby the courts and Department of Justice settled the matter of value. Perhaps a similar concept supported by legislation should apply to all private property within other National parks in Alaska. This process moved the controversy and rhetoric away from the direct interaction between NPS and the miners and set in motion an alternative approach. The Mining EIS preferred alternative was to acquire properties from willing sellers as this provided protection of park resources. Selected properties will include those for which the owner is entitled to fair market value based on a delineated mineral resource and considering pre-Park conditions.

The Commission Recommends That:

B2) The Administration and Legislature work with Federal Government to allow Alaska mineral property holders in National Parks move their properties into a takings process where the courts and the Department of Justice settle the issue of valuation fairly and equitably considering pre-Park conditions.

Appendix A Enabling Legislation

Chapter 98
Session Laws of Alaska, 1986
As Amended by Chapter 12
Session Laws of Alaska, 1998

AN ACT

Relating to the Alaska Minerals Commission; and providing for an effective date. Section 1(a) The Legislature finds that the minerals industries, including metallic minerals, industrial minerals, and hydrocarbons, have traditionally and continue to be the major source of wealth and income in the state.

(b) The Legislature further finds that there are major constraints on the continued development of a diverse mineral industry in the state, including the Environmental Protection Agency's effluent guidelines, state water quality standards and improperly classified streams and rivers, restriction on surface access, complex and numerous permitting requirements, and limited access to minerals through mineral closing orders and restrictions on multiple use through state and federal land use plans.

Section 2. ALASKA MINERALS COMMISSION ESTABLISHED. (a) The Alaska Minerals Commission is established in the Department of Commerce and Economic Development.

- (b) The Commission is composed of 11 members. The Commission shall be composed of individuals who have at least five years' experience in the various aspects of the minerals industries in the state. The Governor shall appoint five members of the Commission, one of whom must reside in a rural community. The President of the Senate shall appoint three members of the Commission. The Speaker of the House of Representatives shall appoint three members of the Commission. Each member serves at the pleasure of the appointing authority.
- (c) The Commission shall make recommendations to the Governor and to the Legislature on ways to mitigate the constraints, including governmental constraints, on development of minerals, including coal, in the State.
- (d) The Commission shall report its recommendations each year to the Governor and the Legislature during the first 10 days of the regular session of the Legislature.
- Sec. 3. This Act is repealed February 1, 1994.*
- Sec. 4. This Act takes effect immediately in accordance with AS 01.10.070(c)

*Note: The Act was amended to extend the life of the Commission to February 1, 2014.

Appendix B Alaska Minerals Commission Statement of Purpose

The Alaska Minerals Commission was created by the 14th Legislature in Chapter 38 of the Session Laws of 1986 and was established to make recommendations to the Governor and to the Legislature on ways to mitigate constraints on the development of minerals in the State.

The minerals industry offers the greatest potential of any Alaska industry for expanding and diversifying the State's economic base, for increasing Statewide employment, and for generating new wealth to create businesses and provide revenues for State and local governments.

However, Alaska has a complex pattern of land ownership and management; has overlapping and uncertain regulatory requirements; has unique geographic, geologic and climatic conditions; and has an undeveloped transportation system.

To attract the capital necessary for the exploration and development of new mines, to ensure that mines can be developed feasibly and in a timely fashion, and to ensure that producing mines remain viable, constraints on the industry must be mitigated.

The Alaska Minerals Commission will prepare reports for the First and Second Sessions of the 15th Legislature and the First Session of the 16th. Legislature, recommending to the Governor and to the Legislature the adoption of legislation and the implementation of administrative policy that will best accomplish the statement of policy found in Article VIII of the Constitution of Alaska:

"It is the policy of the State to encourage the settlement of its land and development of its resources by making them available for maximum use consistent with the public interest."

And the statement of policy found in the President's National Materials and Minerals Report to Congress of April 5, 1982:

"It is the policy of this administration to decrease America's mineral vulnerability by taking positive action that will promote our national security, help ensure a healthy and vigorous economy, create American jobs, and protect America's national resources and environment."

The goals and recommendations of the Alaska Minerals Commission are to assure that the Legislature and the State administration endorse and promote development of a viable mining industry in the state.

Appendix C Mineral Policy Act

Sec. 44.99.110. Declaration of state mineral policy. The Legislature, acting under Art. VIII, sec. 1 of the Constitution of the State of Alaska, in an effort to further the economic development of the state, to maintain a sound economy and stable employment, and to encourage responsible economic development within the state for the benefit of present and future generations through the proper conservation and development of the abundant mineral resources within the state, including metals, industrial minerals, and coal, declares as the mineral policy of the State that

- (1) mineral exploration and development be given fair and equitable consideration with other resource use in the multiple use management of state land;
- (2) mineral development be encouraged through reasonable and consistent non-duplicative regulations and administrative stipulations;
- (3) mineral development and the entry into the marketplace of mineral products are considered in developing a statewide transportation infrastructure system;
- (4) mineral development be encouraged through appropriate public information and education, scientific research, technical studies, and the University of Alaska program involvement; and
- (5) economic development with respect to the state mineral industry is encouraged with Pacific Rim nations (Sec.1 Ch. 138 SLA 1988).

Cover Photo Captions

Front

Pebble Copper Top: Robert Wonhola and drill helper.

Bottom: Savannah Anelon, core logger.

Kensington Project Top: Lil Lundy, grandmother & heavy equipment operator,

originally of Ketchikan, resident of Juneau for 17 years.

Bottom: Jeffrey Elisoff, electrician, of Ketchikan.

Back

Boulder Creek Top: Ambrose and Jason Takak at Boulder Creek.

Bottom: Jason Takak at Boulder Creek.

Chuitna Top: Brad excavates HP035 on right.

Bottom: Raena Schraer and Chad Chickalusion tests a house pit.

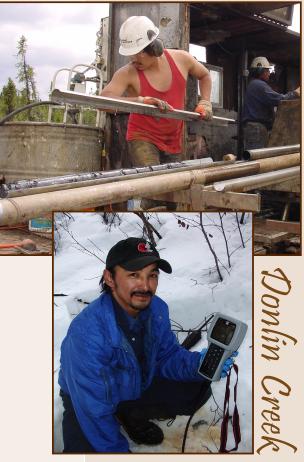
Donlin Creek Top: Mike Sakar, driller helper at Donlin Creek.

Bottom: Steve Peters at Donlin Creek.



Boulder Creek







This publication was released by the Department of Commerce, Community, and Economic Development. Its purpose is to report the findings and recommendations of the Alaska Minerals Commission to the Governor and to the Legislature of Alaska. It was produced at a cost of \$2.46 per copy and printed in Fairbanks, Alaska. This publication is required by Chapter 98, Session Laws of Alaska, as amended by Chapter 4, Session Laws of Alaska, 1993.