STANDARDS AND PRACTICES FOR ENVIRONMENTALLY RESPONSIBLE MINING IN THE NUSHAGAK RIVER WATERSHED

A POLICY STATEMENT OF THE NUSHAGAK – MULCHATNA WATERSHED COUNCIL 2011

This document outlines a set of standards, practices and guidelines for environmentally responsible mining within the Nushagak River Watershed in Southwest Alaska. These standards, practices and guidelines have been developed by the Nushagak – Mulchatna Watershed Council.

INTRODUCTION

The Nushagak-Mulchatna Watershed Council (Council) was formed in 1998. The Council is an association of tribes, local governments and landowners who have joined together to protect the quality of the waters of the Nushagak River Watershed. In 2005 the Council undertook a process to develop a land and water conservation plan focusing primarily on the protection of habitat for salmon and other resources important for the subsistence needs of watershed residents. The process was completed and the Council approved and published the *Nushagak River Watershed Traditional Use Area Conservation Plan* in November of 2007 (Conservation Plan). The Conservation Plan incorporates a baseline of traditional ecological information gathered from the communities and indigenous residents of the watershed.

The Conservation Plan identified potential threats to habitat within the watershed and outlined a series of strategic actions to address those threats. One of the potential threats identified was mining, in particular, the potential development of large scale open pit gold and copper mines in the watershed. To address the potential impacts that mining could have on the habitat in the watershed the Council determined that a key strategic action would be to undertake an assessment of the risks to salmon posed by the development of large scale gold and copper mining in the headwater streams of the watershed. Such a risk assessment was undertaken by The Nature Conservancy in 2008 and completed in 2010. The report entitled *An Assessment of Ecological Risk to Wild Salmon Systems from Large-scale Mining in the Nushagak and Kvichak Watersheds of the Bristol Bay* Basin, Ecology & Environment was published in October of 2010.

Upon completion of the risk assessment the next strategic action identified in the Conservation Plan is to address the risks identified in the assessment through the development of a framework for responsible mining in the watershed.

The Nushagak-Mulchatna Watershed Council adopts the following standards and practices as a framework for environmentally responsible mining to guide owners of property considering mineral development, and the mining industry in the exploration and development of mineral resources. These standards are also designed to assist state, federal and local government agencies in the permitting and oversight of such activities within the Nushagak River watershed. These standards and practices are adapted from the *Ten Principles of Sustainable Development Framework adopted by the International Council on Mining and Minerals*, http://www.icmm.com/our-work/sustainable-development-framework/10-principles; and *A Framework for Responsible Mining: A Guide to Evolving Standards*, Marta Miranda, David Chambers, and Catherine Coumans (October 19, 2005). http://www.csp2.org/reports/Framework%20for%20Responsible%20Mining.pdf In addition some of the standards and practices are derived from the results and observations of research projects undertaken to fulfill the strategic actions outlined in The Conservation Plan, *see e.g.* Woody and O'Neal, *Fish Surveys in Headwater Streams of the Nushagak and Kvichak River Drainages, Bristol Bay, Alaska 2008 – 2010,* The Nature Conservancy (2011), and to address the risks identified in *An Assessment of Ecological Risk to Wild Salmon Systems from Large-scale Mining in the Nushagak and Kvichak Watersheds of the Bristol Bay* Basin, Ecology & Environment, (October, 2010).

These standards and practices have also been developed with an awareness of the scientific literature regarding the resilience and vulnerability of wild salmon and the growing understanding of the role freshwater habitat plays in the development of sustainable wild salmon populations, particularly in Southwest Alaska, *see e.g.* Schlindler, *et, al. Population Diversity and the Portfolio Effect in an Exploited Species*, Nature, pp 609 – 612 (June 3, 2010).

Accordingly, the people of the Nushagak River Watershed and the organizations that represent and serve them may refuse to give their consent, which includes the denial of permission to use their lands and resources, to any mineral development organization, mining company or enterprise that fails to conduct their activities in accordance with the standards and practices set forth in this document.

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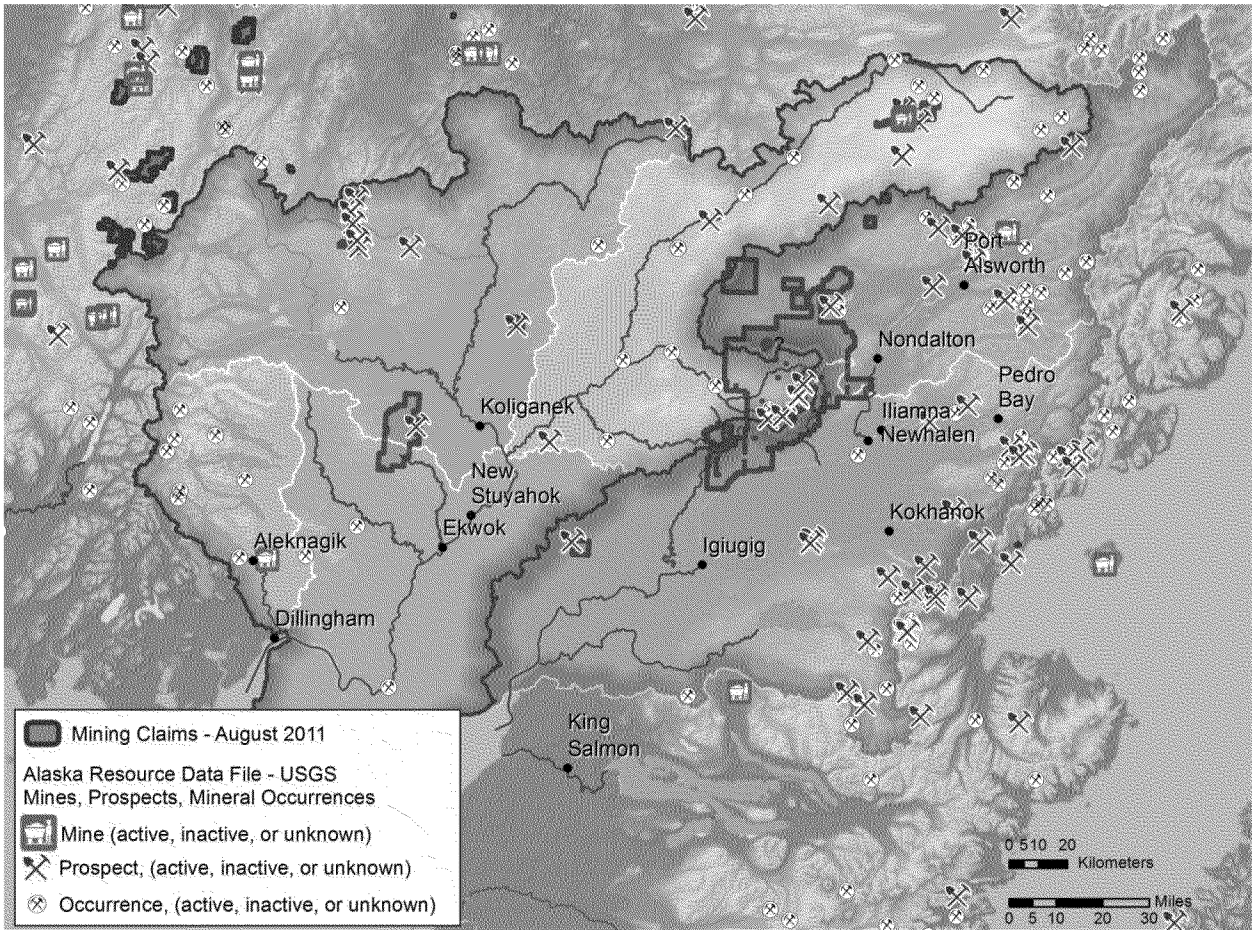

Mineral claims and prospects within the Nushagak River Watershed as of August, 2011

I. Standards and Practices for Free, Prior and Informed Consent

A. Mining companies should adhere to the principles of Free, Prior and Informed Consent as those principles are articulated in the *United Nations Declaration on the Rights of Indigenous Peoples* (2007) to which the United States became a signatory in December of 2010 and the *Position Statement of the International Council on Mining and Metals* (ICMM – May 2008).

Free, Prior and Informed Consent is defined as follows:

- Free – people are able to freely make decisions without coercion, intimidation or manipulation;
- Prior – sufficient time is allocated for people to be involved in the decision-making process before key project decisions are made and impacts occur;
- Informed – people are fully informed about the project and its potential impacts and benefits, and the various perspectives regarding the project (both positive and negative);
- Consent – there are effective processes for affected indigenous peoples to approve or withhold their consent, consistent with their decision-making processes, and that their decisions are respected and upheld.

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Commitment #3 of the Position Statement of the International Council on Mining and Metals provides:

> Engagement will be based on honest and open provision of information, and in a form that is accessible to Indigenous Peoples. Engagement will begin at the earliest possible stage of potential mining activities, prior to substantive on-the-ground exploration. Engagement, wherever possible, will be undertaken through traditional authorities within communities and with respect for traditional decision-making structures and processes.

Commitment #9 of the Position Statement of the International Council on Mining and Metals provides:

> ICMM members recognize that, following consultation with local people and relevant authorities, a decision may sometimes be made not to proceed with development or exploration even if this is legally permitted.

COMMENT: Most of the indigenous residents of the Nushagak River Watershed are represented by Federally recognized tribal governments. The indigenous residents of the watershed also have interests that are represented by village and regional corporations established under the Alaska Native Claims Settlement Act of 1971. The indigenous and non-indigenous residents of the watershed may also have interests represented by local governments organized under the laws of the State of Alaska. All of these organizations should be informed of mineral exploration and development activities within the watershed and engaged in the process of consent. References in this document to residents or communities of the watershed include these organizations.

Residents of the watershed should be afforded sufficient time to understand the information provided by a mining company. Sufficient time should be a measure of the time it took a mining company to generate the information for exploration or a proposed mine in relation to the time it can reasonably be expected for residents to seek and engage their own experts to independently evaluate, verify and express opinions on the adequacy and accuracy of information provided by a mining company, especially as that information relates to environmental baseline studies and the potential impact of exploration or proposed mining activity on the water quality and quantity, and the habitat of the watershed.

Information should be provided in a format that takes advantage of modern technology. Paper reports or the equivalent need to be provided but alone are insufficient. Information should be released in a digital format (tabular databases, GIS files, metadata, etc.) that can be easily searched, analyzed and independently evaluated particularly as that information relates to potentially impacted public and private resources such as land, air, water, fish, and wildlife.

II. Standards and Practices for Exploration Activities

A. No permit for exploration, including Temporary Water Use Permits issued by the Alaska Department of Natural Resources (ADNR), should be issued without actual notice to the communities and residents of the watershed, a ninety day comment period and at least one public hearing in Dillingham and one public hearing in the community closest to the proposed exploratory activity.

COMMENT: The details of any mineral exploration project and the potential impacts of that activity should be made publically available before exploration begins.

B. Exploration activities should only be permitted, including the issuance of Temporary Water Use Permits by ADNR, upon a finding by the Commissioner of the Alaska Department of Fish and Game (ADF&G) that no significant harm will result to anadromous streams within the area proposed for exploration.

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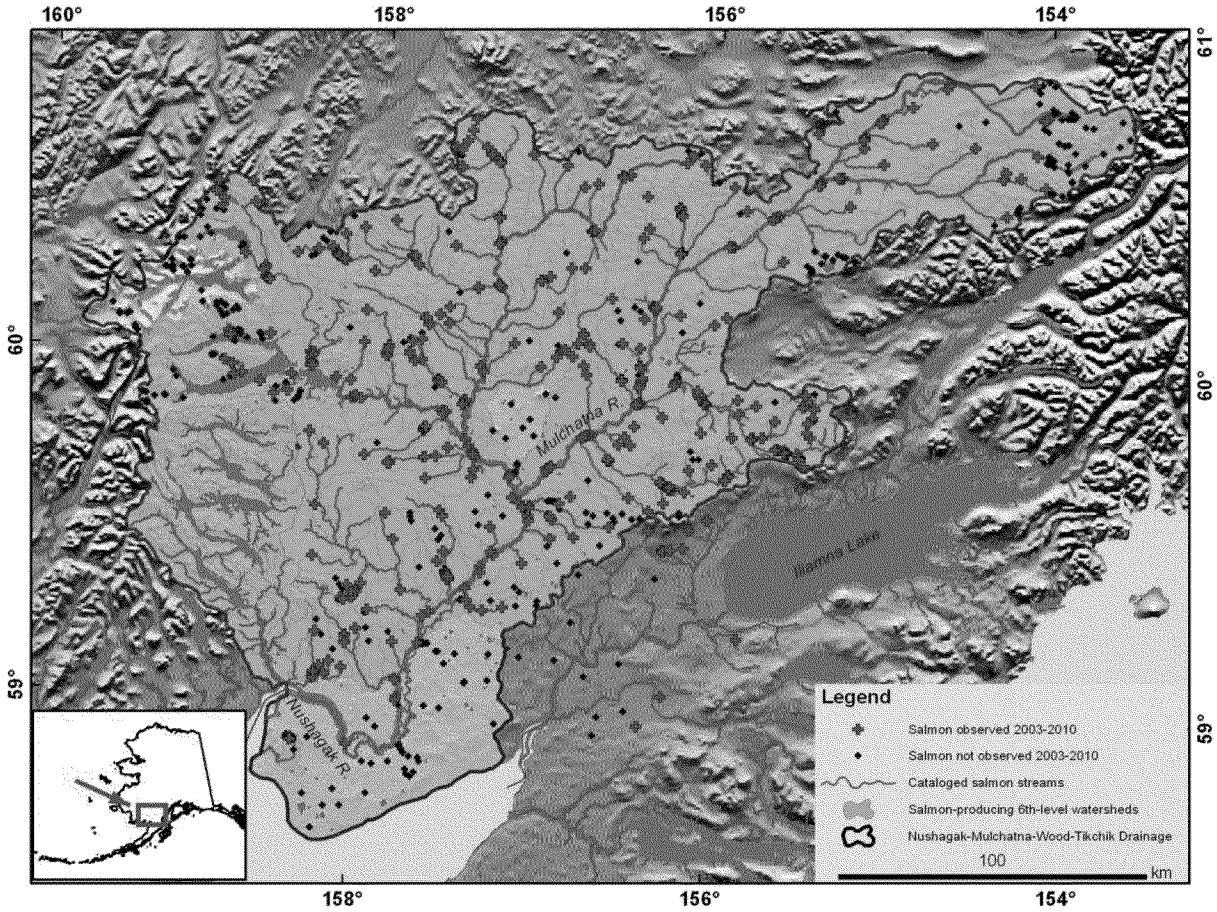
COMMENT: For the purpose of such a finding the Commissioner of ADG&G should assume that any stream reach within the area of exploration with a 10% gradient or less in one of the red shaded sixth level hydrologic units on the following map should be presumed to be an anadromous stream that produces salmon. Dolly Varden in the watershed may also be anadromous and may rear in streams up to 14% gradient.



Salmon producing 6th level basins within the Nushagak River watershed

C. During the exploration phase mining companies should conduct fish distribution surveys of all waterbodies that could be affected by eventual mine development and associated activities. Until such time as more accurate tools are available for predicting the location of anadromous steams, mining companies should survey all stream reaches within the footprint of the potential mine and all stream reaches within one mile of any planned development. Fish distribution surveys should comply with protocols developed by ADF&G and reports of surveys should be provided to ADF&G and nominations made to the Anadromous Waters Catalog at the end of each survey season for any waterbody in which anadromous fish were documented.

D. During the exploration phase mining companies should not file water withdrawal applications with the Alaska Department of Natural Resources for water to be used in the development, operation and closure of a mine. Such applications should only be filed upon completion of the mine plan that will be submitted for permitting.

Priority for water use within all waters of the Nushagak River Watershed should be accorded to the fish that inhabit these waters. Mining companies should provide the Nushagak-Mulchanta Watershed Council with sufficient funds to file and perfect instream flow reservations under Alaska law to protect minimum flows required for fish for any waterbodies that may be affected by water withdrawals for mine development, operation and closure.

E. Mining companies should provide adequate financial assurances to pay for prompt cleanup, reclamation and long term monitoring and maintenance that could result from exploration activities.

COMMENT: Self-bonding or corporate guarantees should not be permitted. Escrowed Funds or surety bonds provided by independent highly rated surety agencies are acceptable forms of guarantees.

III. Standards and Practices for Mine Development and Operation

A. No mine should be permitted within the Nushagak River Watershed that will require active management in perpetuity to avoid environmental contamination. Before any mine is permitted in the Nushagak River Watershed an independent qualified professional shall certify that active management will not be required in perpetuity.

COMMENT: Mines in this watershed should not pose an eternal threat of environmental contamination. Such a threat is deemed to exist if active measures like water treatment, groundwater pumping or other means of mechanical, chemical or human intervention will be necessary in perpetuity to prevent toxic effluents from escaping beyond the boundary of the mine. Such measures are considered active management and are distinguished from more passive activities like monitoring, occasional inspection, and the incidental maintenance that would still be necessary for a closed and sealed mine.

B. No mine should be permitted within the Nushagak River Watershed that destroys or impairs habitat that supports a life phase of a particular anadromous or resident fish species if the sustained abundance or genetic diversity of that species may be significantly compromised.

C. The Commissioner of ADF&G should not consider issuing a permit for the destruction, relocation or removal of an anadromous water body within the Nushagak River watershed without sufficient notice to the communities and residents of the watershed, a 120 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the waterbody proposed for destruction or removal. The Commissioner of ADF&G should not issue a permit for the destruction, relocation or removal of an anadromous water body without clear and convincing evidence that the destruction or removal will not result in a significant loss to the sustained abundance or genetic diversity of any salmon species.

D. No mine should be permitted within the Nushagak River watershed that will require water withdrawals that may exceed ecological flow needs for salmon and other fish.

E. The Commissioner of the Alaska Department of Natural Resources (ADNR) should not consider issuing a permit for the withdrawal of water to support the development and operation of a mine from any waterbody in the Nushagak River Watershed until an instream flow reservation as provided in Alaska Law to protect fish has been filed and perfected by ADF&G, the Nushagak-Mulchatna Watershed Council or a partner organization. The Commissioner of Natural Resources should not reduce an instream flow reservation to protect fish without clear and convincing evidence that the reduction of instream flow will not destroy or impair habitat that supports a life phase of a particular salmon species if the sustained abundance or genetic diversity of that species may be compromised.

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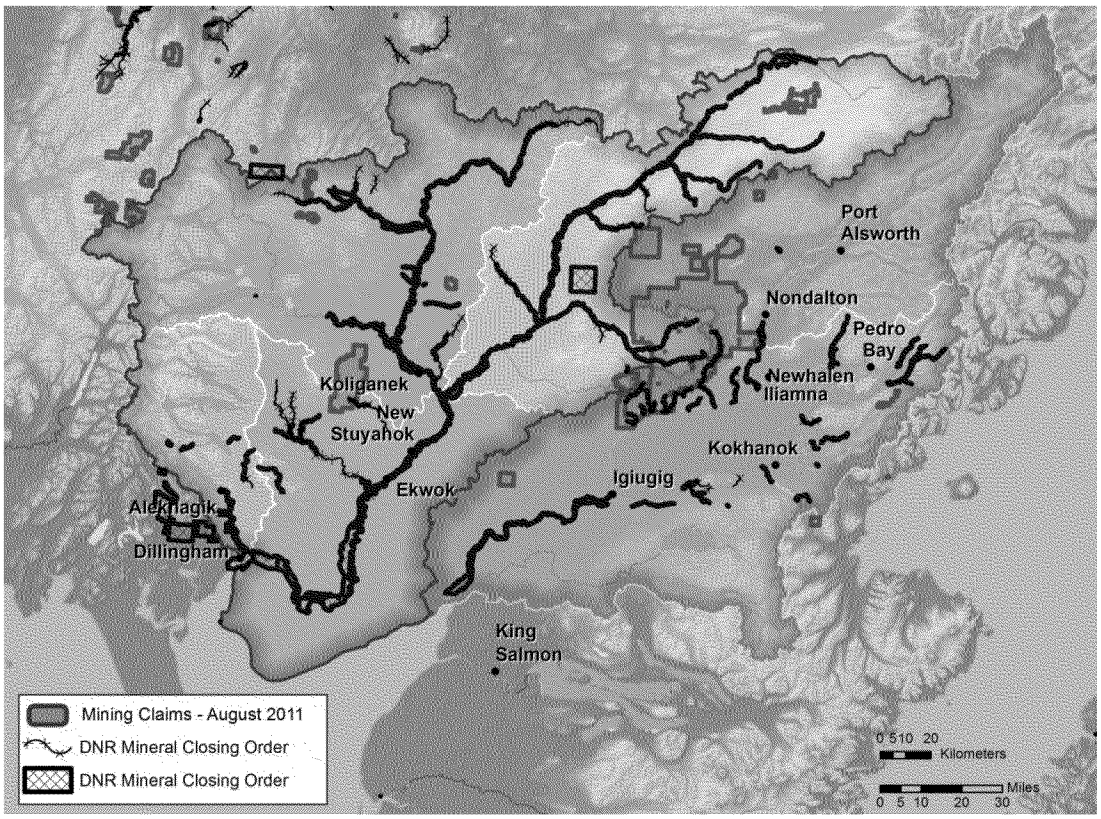
F. The Commissioner of ADNR shall not reduce an instream flow reservation for fish without sufficient notice to the communities and residents of the watershed, a 120 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the waterbody affected.

G. No mine should be permitted within the Nushagak River watershed that will require mixing zones.

H. No mine should be permitted within the Nushagak River watershed without a plan to control and monitor dust emissions during construction and operation that has been tested and demonstrated to be effective for the conditions to be encountered on location.

I. No mine should be permitted within the Nushagak River Watershed that could result in acid mine drainage during operation or after closure unless the risk of such drainage can be eliminated by methods proven to be effective at mines of comparable size, scale and location.

J. No mine should be permitted in areas of the Nushagak River watershed that are or were subject to mineral closing orders.



COMMENT: Acid mine drainage is a risk associated with sulfide mines that has contributed to the impairment of wild fish populations in other parts of the world. Mining companies should conduct adequate pre-mining sampling and analysis for acid-producing minerals, based on accepted practices and appropriately documented, site-specific professional judgment. Sampling and analysis should be conducted in accordance with the best available practices and techniques.

The Nushagak River watershed is not a place to experiment with untested methods for controlling acid mine drainage. The Nushagak River watershed is characterized by extensive wetlands, moderate precipitation, numerous small streams, interconnections between ground and surface water, a high water

table, and over geological formations that are susceptible to ground water movement. A method shown to be effective for controlling acid mine drainage in a drier climate is not sufficient. Any method proposed for controlling acid mine drainage should be proven effective in a watershed with similar characteristics to the Nushagak River Watershed.

K. No mine should be permitted within the Nushagak River Watershed that requires shallow-water submarine waste disposal.

COMMENT: The rivers and tributary streams, shallow lakes and ponds of the watershed should not be used for the disposal of mine waste.

L. No mine should be permitted within the Nushagak River Watershed that requires deep-water submarine waste disposal unless such waste disposal will be environmentally benign. No regulatory authority should consider issuing a permit for deep-water waste disposal within the Nushagak River Watershed without actual notice to the communities and residents of the watershed, a 120 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the waterbody proposed for deep water waste disposal. A permit for deep-water submarine waste disposal should not be issued unless there is clear and convincing evidence that the disposal will not compromise the sustained abundance or genetic diversity of any anadromous or resident fish species within the waterbody proposed for deep water waste disposal.

M. No mine should be permitted within the Nushagak River Watershed that requires the use of cyanide unless the mine operator is a signatory to the *International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold*, http://www.cyanidecode.org/ .

N. Tailings impoundments and waste rock dumps should be constructed in a manner that as a first priority eliminates the release of contaminants by installing liners if seepage could result in groundwater contamination. In addition, waste facilities should have adequate monitoring and seepage collection systems to detect and collect any contaminants released in the immediate vicinity.

O. Mine dewatering should be designed in a manner that as a first priority eliminates impacts on ground and surface waters, including seeps and springs.

P. Mining companies should prepare detailed plans for preventing and responding to low risk but high impact events. The plan should regularly be revised and updated to incorporate improvements in prevention and response practices and technology, and to account for changes in operation that occur over the life of the mine. Response technology should be proven effective in similar locales and during all seasons. At a minimum such plans must be revised every five years or concurrently with regulatory approval of changes to the design or operation of the mine. Revised plans should not be approved without sufficient notice to the communities and residents of the watershed, a 60 day comment period, and at least one public hearing in Dillingham and one public hearing in the community most likely to be the first to suffer impacts from an incident (e.g. community immediately downstream of a tailings dam).

COMMENT: Some incidents associated with mines, like slurry pipeline breaks or tailings dam failures, may be very unlikely, but if they occur the impacts are potentially large. Mining companies should be required to develop detailed prevention and response contingency plans for such low probability but high impact events as well as provide funds in escrow or independent financial assurances for the payment of costs associated with response to the incident and rehabilitation of the environment damaged.

Q. If permit violations occur, mining companies must commit to rapidly implementing corrections.

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R. The environmental performance of any mine in the watershed and the effectiveness of the regulatory agencies responsible for regulating mines should be addressed in an independent environmental audit. These audits should be conducted every three years or immediately after any permit violation or pollution event, and the results should be made immediately available to residents and communities of the watershed. Recommendatio ns made in the audit must be implemented within a reasonable time.

S. The residents, communities and representative bodies of the Nushagak River Watershed should have the right to independent monitoring and oversight of the environmental performance of a mine. Mining companies should cover the reasonable costs of such oversight in an annual minimum amount paid to the Nushagak-Mulchatna Watershed Council to be determined prior to mine operation.

IV. Standards and Practices for Reclamation and Closure

A. Mining companies should develop a reclamation and closure plan before operations begin that includes detailed cost estimates, plus ten percent, with consideration for inflation. Reclamation and closure plans should address post-closure monitoring and maintenance of all mine facilities, including surface and underground mine workings, tailings, and waste disposal facilities.

The plan should be periodically revised and updated to incorporate improvements in reclamation practices and technology, to account for changes in operation that occur over the life of the mine, and to take into account potential increases in reclamation and closure costs (but not potential decreases). The residents and communities of the Nushagak River Watershed should have the right to comment on the adequacy of the reclamation and closure plan. A decision to approve a reclamation and closure plan should not be made prior to actual notice to the communities and residents of the watershed, a 120 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the mine.

B. Mining companies should restore to the greatest extent physically possible all disturbed areas to pre-mine conditions, including, but not limited to topographic and hydrologic features.

C. Mining companies should re-contour and stabilize disturbed areas. This should include the salvage, storage, and replacement of topsoil or other acceptable growth medium. Material from the mine site should be tested for contaminants before being used for reclamation. Quantitative

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standards should be established for re-vegetation in the reclamation plan—and clear mitigation measures should be defined and implemented if these standards are not met. Native vegetation should be used in reclamation.

D. Where subsidence is possible, mining companies should backfill underground mine workings to prevent such subsidence.

E. Underground mine workings and pits should be backfilled to minimize the size of waste and tailings disposal facilities.

F. Underground mine workings should be tested and regularly monitored for contamination.

Comment: Financial expense or economic burden should not be a consideration as to whether restoration is possible. Rather the question to be resolved with respect to restoration is whether it is possible to engineer restoration to pre-mine conditions without causing more environmental damage.

V. Standards and Practices for Financial Guarantees

A. Financial sureties should be reviewed and upgraded every two years by the ADNR and the results of the review should be publicly disclosed.

B. The residents and communities of the Nushagak River Watershed should have the right to comment on the the adequacy of the financial surety, and completion of reclamation activities prior to release of the financial surety.

C. Financial surety instruments should be independently guaranteed, reliable, and readily liquid. Sureties should be regularly evaluated by independent analysts using accepted accounting methods. Self-bonding or corporate guarantees should not be permitted for financial surety.

D. Financial sureties should not be released until reclamation and closure are complete, all impacts have been mitigated, and cleanup has been shown to be effective for a sufficient period of time, but no less than ten years, after mine closure. Sureties should not be released without sufficient notice to the communities and residents of the watershed, a 90 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the mine.

Mapping Traditional Knowledge in New Stuyahok 2006

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VI. Standards and Practices for Post-Closure and Post-Closure Monitoring.

A. Mining companies should endow an independent fund from which the cost of monitoring and maintenance of the closed mine can be paid. The adequacy of the fund should be reviewed by an independent auditor periodically and no less than every three years during mine operation to determine whether the fund is keeping pace with inflation and changes in reclamation and closure that may result from changes in mine operation. To the extent the fund is determined by the auditor to be insufficient to meet the future costs of monitoring and maintenance the mine operator shall pay into the fund the amount recommended by the auditor.

VII. The Principle of Precaution Shall Be Applied to Mineral Exploration and Development Activities in the Nushagak River Watershed

A. Within the Nushagak River Watershed there should be no presumption in favor of mineral exploration or development. Where there is scientific uncertainty concerning the impacts of a proposed mineral exploration or development activity on the water quality, aquatic and subsistence resources of the watershed it should not be assumed that such activities can proceed until and unless there is clear evidence the activities are harmful. Rather, such activities should not proceed unless there is clear and convincing evidence the activities are environmentally safe. The burden shall be on the proponent of mineral exploration or development to demonstrate the activities will not result in significant impact to the water quality or the sustained abundance or genetic diversity of any anadromous or resident fish species that may be affected by the activity.

COMMENT: The livelihood and culture of the people of the Nushagak River Watershed are intimately tied to the water and aquatic resources of the watershed, in particular the wild salmon and resident fish species like whitefish, trout and Dolly Varden. The preservation of wild fish species and the clean water upon which they depend is the mission of the Nushagak-Mulchatna Watershed Council.

In the face of potential mineral development activity, the people of the watershed should not be placed in the impossible position of proving a proposed mineral development activity will harm fish or pollute the water. Rather, the burden shall be with the proponents to prove to the satisfaction of the people of the watershed, as they are represented by the organizations mentioned in the comment to Standard I, that the proposed activities are safe and will not pollute the water or cause significant harm to the fish species and other subsistence resources of the watershed. Failure to do so may result in the people of the watershed withholding their consent to mineral development and refusing permission to use their lands and other resources.

PASSED AND APPROVED by the Nushagak-Mulchatna Watershed Council on October 25, 2011.

Luki Akelkok, Chairman

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