



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

August 14, 2003

Pete Griffin
Juneau District Ranger
U.S. Forest Service
8465 Old Dairy Road
Juneau, AK 99801

RE: Greens Creek Tailings Disposal FEIS

Dear Mr. Griffin:

The National Marine Fisheries Service (NMFS) has reviewed the internal review draft of the Greens Creek Tailings Disposal Final Environmental Impact Statement (FEIS). NMFS commends the U.S. Forest Service for its prompt and thorough response to NMFS' comments on the Draft Environmental Impact Statement (DEIS) and our recommendation for consultation under the Magnuson-Stevens Fishery Conservation and Management Act. The FEIS contains a much better organized and detailed evaluation of the potential impacts of the proposed tailings facility expansion on Essential Fish Habitat (EFH). NMFS also received and reviewed the data from the marine monitoring program being conducted as a requirement of the Greens Creek NPDES permit. This letter provides NMFS' comments on both the EFH Assessment contained in the FEIS, and the additional data from the NPDES marine monitoring program. We have several outstanding concerns.

From the data provided from the marine monitoring program, it is clear that activities associated with the ore loading facility and the ship berth are significantly affecting marine sediments and potentially affecting marine biota. The monitoring data indicate that sampling site S-5 is very contaminated with cadmium, copper, lead, zinc and possibly mercury. Site S-4 also has elevated concentrations of these elements. This conclusion is based on the sediment concentration and the bioaccumulation data for *Nephtys* at S-4. The tissue concentrations of copper and lead are relatively high in this polychaete compared with those in the same species from other nearby sampling stations. The data show an increase in tissue copper over time, however this increase does not match the reported sediment concentrations. There are no data for biota at site S-5 even though evaluation of contaminants in biota at this site is included as a requirement of the NPDES marine monitoring plan.

Based on analysis of the data and the information provided in the FEIS, NMFS is unable to concur with the finding that proposed actions are not likely to adversely affect EFH. NMFS disagrees with the statement that the "potential effects of all action alternatives on metal accumulation in EFH, managed species and their prey cannot be quantified and are therefore considered



negligible.” The inability to quantify impacts of metals accumulation on EFH and managed species is a direct result of the limitations of the current marine monitoring program. A lack of data due to sampling design does not equate to a negligible impact.

Through its National Status and Trends (NS&T) Program, NOAA has developed numerical sediment quality guidelines. These guidelines are intended to be used in ranking areas that warrant further detailed study on adverse effects such as toxicity. Every element at site S-5 (Cd, Cu, Pb, Hg, and Zn) for the most recent sampling period (July 2002) exceeds the Effects Range Low (ERL) sediment quality guidelines. All sediments at S-4 also exceed or come very close to the ERL values during this same sampling period. At these levels, NMFS is concerned about the potential for bioaccumulation of metals in higher trophic level vertebrate and invertebrate species. Elevated levels of certain contaminants is associated with a reduction in the abundance and diversity of benthic communities, which has a direct impact on EFH through reduction in prey availability for managed species.

The “Review and Evaluation of Changing Concentrations of Trace Metals and Tissue for Kennecott Greens Creek Mining, Inc.” states that elevated concentrations of trace metals at S-4 and S-5 resulted from startup of the ore loading facility. A remedial investigation was undertaken in 1991 and remedial actions were completed in 1994. The concentrations of some contaminants may have declined since 1994, however NMFS notes that there have been significant recent increases in the concentrations of contaminants, notably zinc, lead and copper. Variability in the tissue and sediment concentrations may be due to changes in the discharges or sampling bias due to non-homogenous distribution of contaminants at a given site. Without multiple samples for each site it is not possible to analyze these data for trends or to compare between sites.

The FEIS evaluates sediment and biota sampling data for only two of the four marine monitoring sites: S-1 which is adjacent to outfall 002, and S-2 which is at the south end of Hawk Inlet. NMFS disagrees with the statement in the FEIS that “(t)he primary source of potential impact to the marine environment from mining activities in Hawk Inlet is through introduction of processed water through outfall 001 (treated human wastewater) and outfall 002 (treated mine contact and storm water).” Expansion of the tailings facility is directly related to the operating lifetime of the mine and the amount of ore that will be extracted and loaded onto ships in Hawk Inlet. The EFH assessment needs to be expanded to include an evaluation of past and proposed future impacts of ore loading and measures to avoid or mitigate these impacts. In addition, the impacts of other mine activities on the marine environment need to be considered as cumulative impacts in the FEIS.

The analysis provided in the FEIS demonstrates that average concentrations of metals in marine sediments at site S-1 are below ERL sediment guidelines and Washington State Marine Sediment Quality Standards. As with the sediment and tissue samples at sites S-4 and S-5, it is not possible to analyze for trends in the data. The lack of variance for tissue concentrations is also problematic as it precludes comparison of concentrations between sampling stations. It does appear, however that lead increased in sediment and tissues after commencement of mine operations.

negligible.” The inability to quantify impacts of metals accumulation on EFH and managed species is a direct result of the limitations of the current marine monitoring program. A lack of data due to sampling design does not equate to a negligible impact.

Through its National Status and Trends (NS&T) Program, NOAA has developed numerical sediment quality guidelines. These guidelines are intended to be used in ranking areas that warrant further detailed study on adverse effects such as toxicity. Every element at site S-5 (Cd, Cu, Pb, Hg, and Zn) for the most recent sampling period (July 2002) exceeds the Effects Range Low (ERL) sediment quality guidelines. All sediments at S-4 also exceed or come very close to the ERL values during this same sampling period. At these levels, NMFS is concerned about the potential for bioaccumulation of metals in higher trophic level vertebrate and invertebrate species. Elevated levels of certain contaminants is associated with a reduction in the abundance and diversity of benthic communities, which has a direct impact on EFH through reduction in prey availability for managed species.

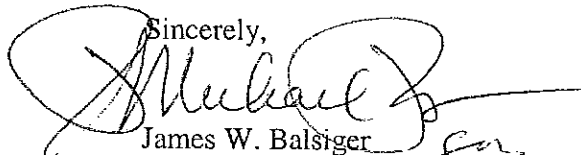
The “Review and Evaluation of Changing Concentrations of Trace Metals and Tissue for Kennecott Greens Creek Mining, Inc.” states that elevated concentrations of trace metals at S-4 and S-5 resulted from startup of the ore loading facility. A remedial investigation was undertaken in 1991 and remedial actions were completed in 1994. The concentrations of some contaminants may have declined since 1994, however NMFS notes that there have been significant recent increases in the concentrations of contaminants, notably zinc, lead and copper. Variability in the tissue and sediment concentrations may be due to changes in the discharges or sampling bias due to non-homogenous distribution of contaminants at a given site. Without multiple samples for each site it is not possible to analyze these data for trends or to compare between sites.

The FEIS evaluates sediment and biota sampling data for only two of the four marine monitoring sites: S-1 which is adjacent to outfall 002, and S-2 which is at the south end of Hawk Inlet. NMFS disagrees with the statement in the FEIS that “(t)he primary source of potential impact to the marine environment from mining activities in Hawk Inlet is through introduction of processed water through outfall 001 (treated human wastewater) and outfall 002 (treated mine contact and storm water).” Expansion of the tailings facility is directly related to the operating lifetime of the mine and the amount of ore that will be extracted and loaded onto ships in Hawk Inlet. The EFH assessment needs to be expanded to include an evaluation of past and proposed future impacts of ore loading and measures to avoid or mitigate these impacts. In addition, the impacts of other mine activities on the marine environment need to be considered as cumulative impacts in the FEIS.

The analysis provided in the FEIS demonstrates that average concentrations of metals in marine sediments at site S-1 are below ERL sediment guidelines and Washington State Marine Sediment Quality Standards. As with the sediment and tissue samples at sites S-4 and S-5, it is not possible to analyze for trends in the data. The lack of variance for tissue concentrations is also problematic as it precludes comparison of concentrations between sampling stations. It does appear, however that lead increased in sediment and tissues after commencement of mine operations.

In conclusion, NMFS finds that the EFH assessment included in the FEIS is incomplete. This assessment needs to include potential EFH impacts from other mine activities both as a direct result of expanding the tailings pile and increasing the longevity of the mine, and as cumulative impacts on the marine environment in addition to the impacts from the outfall. Additional information should be provided on how ore is loaded for transport and how this process is resulting in contamination of sediments at sites S-4 and S-5. The revised EFH assessment also should include a discussion of past remediation measures applied to these areas and proposed mitigation for existing impacts.

We look forward to future coordination to resolve these outstanding issues. Please contact Katharine Miller at (907) 586-7643 if you have any questions.

Sincerely,

James W. Balsiger
Administrator, Alaska Region

cc: James P. Burgess, NEPA Coordinator, NOAA Office of Strategic Planning
EPA Juneau, Chris Meade
USACOE, Colonel Griffith
ADEC, ADF&G, ADNR, USFWS, Juneau

