



**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**


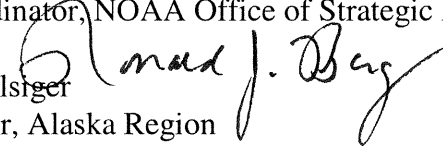
National Marine Fisheries Service

P.O. Box 21668

Juneau, Alaska 99802-1668

June 2, 2003

MEMORANDUM FOR: James P. Burgess
NEPA Coordinator, NOAA Office of Strategic Planning

FROM:  James W. Balsiger
Administrator, Alaska Region 

SUBJECT: Greens Creek Tailings Disposal DEIS

Attached for your signature are comments by the National Marine Fisheries Service Alaska Region on the Draft Environmental Impact Statement (DEIS) for the Greens Creek Tailings Disposal project. The comment period for this DEIS closes on 9 June 2003. Please fax the signed comments to Pete Griffin, Juneau District Ranger at 907-586-8808 and mail a signed copy to our office for our records.

Please contact Katharine Miller at (907) 586-7643 if you have any questions.

Attachment



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

RE: Greens Creek Tailings Disposal DEIS

Dear Mr. Griffin:

The National Oceanographic and Atmospheric Administration's National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Statement (DEIS) for the Greens Creek Tailings Disposal. The Greens Creek Mine is located in the Greens Creek Watershed within the Admiralty Island National Monument adjacent to Hawk Inlet. Under the current general plan of operations, tailings are placed in a dewatered state into the tailings pile. Non-contact water (surface and ground) is diverted around the tailings pile. Contact water is collected and treated before being discharged into Hawk Inlet through an existing National Pollution Discharge Elimination System (NPDES) permitted discharge system. The proposed preferred alternative would expand the existing tailings facility by 84.5 acres to a total area of approximately 140.5 acres. Tailings disposal would occur on approximately 40 acres within the new area, with the remaining 45 acres being used for rock quarries, a stormwater pond system, and storage for reclamation materials. Tailings would continue to be placed on the pile without chemical or biological additives. Non-contact water would continue to be diverted around the tailings pile, and treated contact water would continue to be discharged to Hawk Inlet under the NPDES permit.

Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act requires Federal agencies to consult with NMFS on all actions that may adversely affect Essential Fish Habitat (EFH). NMFS is required to make conservation recommendations which may include measures to avoid, minimize, mitigate or otherwise offset adverse effects. For the purposes of this DEIS, EFH includes all segments of streams where salmon reside during any period of the year as well as the marine waters and substrates of Hawk Inlet. These areas provide habitat for a number of anadromous and marine species including pink salmon, chum salmon, coho salmon, Dolly Varden char, cutthroat trout, several species of shrimp, halibut, black cod, and king crab. Unfortunately, the level of detail provided in the DEIS sections on the marine environment (sections 3.6.6 and 3.6.7) is insufficient for NMFS to make a determination on potential impacts to EFH from the proposed activity. Therefore, NMFS requests that

the U.S. Forest Service (USFS) initiate an EFH consultation to fulfill its statutory obligation under the Magnuson-Stevens Act.

NMFS' main concerns with respect to mine operations are related to sediment contamination of fish spawning and rearing habitat and the toxic effects of heavy metals and chlorine on aquatic life. Low concentrations of some heavy metals are extremely toxic to plant and animal life, and some metals have the potential to accumulate in greater concentrations as they move through the food chain. Because many animals residing in soft-bottom benthic communities are important food items in the diets of higher trophic level species, the possible cumulative impacts of mine activities on marine sediment and biota should be evaluated. During review of the initial EIS for operation of the Greens Creek Mine in 1982, NMFS recommended developing a monitoring program designed to detect changes in the quality of habitat for resident and migratory organisms associated with Hawk Inlet and its freshwater tributaries. This monitoring program included sampling of intertidal and subtidal bottom sediments, the corresponding biota, and the water column for heavy metal concentrations. NMFS' recommendations were included in the marine monitoring program required under the Greens Creek NPDES permit, which requires quarterly water column monitoring, bi-annual sediment sampling, and semi-annual testing of tissues from *Nephtys procera*, *Nereis ssp*, and *Mytilus edulus*.

Given the existence of an ongoing marine monitoring program, quantitative information should be provided in the DEIS regarding marine water quality or heavy metal concentrations in seafloor sediments and biota. Most of the information provided in sections 3.6.6 (Marine Water Quality) and 3.6.7 (Metal Concentrations in Seafloor Sediments and Biological Tissues) is presented in qualitative terms indicating that some metals were found in "generally high" levels prior to mine operations and some metals were "significantly higher" after mine operations. This level of detail is insufficient for NMFS to determine whether increases in metal concentrations as a result of mine operations pose a risk to living marine resources and EFH. To adequately assess the impacts of mine operations and proposed changes in mine operations on marine resources and EFH, NMFS requires data on the concentrations of metals measured, the timeframe over which sampling occurred, sampling frequency, and analysis of trends in the data over time.

Because of the lack of sufficient data in the DEIS, NMFS cannot agree with the conclusion in Section 4.10 (Essential Fish Habitat) that "no discernable effects are expected on marine habitats, subtidal substrata and biota, benthic (sea bottom) habitats in the project area, intertidal sands, submerged sill habitats, kelp habitats, rocky habitats, or freshwater fish habitats, thus no impact on EFH is expected." Although data or information may exist elsewhere to substantiate this conclusion, it is not supported by data or information provided in the DEIS.

Finally, based on the information in the DEIS, Alternative C would have the least impact on freshwater and marine resources during mine operation and after closure. This is the only alternative for which the water quality model indicates that zinc concentrations in the underdrain water will not exceed Alaska Water Quality Standards. This result is significant because zinc is readily bioaccumulated and thus can

pose a threat to fish, birds, and marine mammals. In addition, Alternative C would require the least amount of disturbance to wetlands. As a result, NMFS recommends that Alternative C be selected over the proposed alternative (Alternative B).

Specific Comments:

Section 3.6.6 indicates that “(m)arine water quality parameters are monitored on a regular basis” but does not provide information on the frequency of monitoring, the specific parameters that are regularly monitored, or any changes in marine water quality that have occurred during the period that the mine has been in operation. For inorganic nutrients, the document contains only a qualitative statement that concentrations of inorganic nutrients are “comparable to those at Auke Bay near Juneau.” No information is provided on what these concentrations are, when measurements were taken to determine these concentrations, and whether any changes in these concentrations have occurred over time. Likewise, this section indicates that lead concentrations “vary, with location, from below detection limits to near acute levels” but does not provide specific data on what the concentrations are at specific locations or during what period of time the data were collected. NMFS recommends that this section contain information on the marine water quality sampling program including the parameters being sampled, the frequency of sampling, and a summary of sampling results with both baseline data and data collected since mining operations commenced.

Section 3.6.7 states that studies have “documented the metal concentrations in seafloor sediment and seafloor creature tissues during the mine’s pre-operational, operational and temporary closure (post operational) periods” and that the “results of these studies are useful for ascertaining natural metal levels and for determining whether mine operations caused any increase above the natural levels for metal in sediments and tissue of marine organisms sampled.” Unfortunately, this section does not provide the quantitative results of these studies. Instead, it discusses the results in qualitative terms indicating that some metals were found in “generally high” levels prior to mine operations and some metals were “significantly higher” after mine operations. This level of detail is not sufficient for determining whether increases in metal concentrations as a result of mine operations pose risks to marine resources. To adequately assess the impacts of mine operations and proposed changes in mine operations on marine resources, NMFS recommends that this section provide the quantitative concentrations of metals measured, the timeframe over which sampling occurred, sampling frequency, and trends in the data.

Section 3.6.7 also states that “polychaete worms were sampled as indicators of heavy metals accumulating in marine life in Hawk Inlet” and that concentrations of lead and arsenic increased after mine operations, but no information is provided on the frequency of sampling or the timeframe for the sampling results. No data are provided for the arsenic increases. Specific data are only provided for lead. No information is provided about when the specific data were collected or whether lead levels have continued to increase. NMFS recommends that this section provide current quantitative data from the tissue sampling including frequency of sampling, a comparison of baseline and subsequent results and analysis of any trends in the data. Section 3.6.7 needs a discussion of the extent to which mine

operations are responsible for increases in metal concentrations in sediments and tissues so that the alternatives being considered can be evaluated for potential impacts to marine resources.

The paragraph on page 3-16 appears to indicate that tissue sampling occurred at three sites (S-1, S-2 and S-3), but the legend to the map in Figure 3-6 indicates that sites S-1 and S-2 were sediment sampling sites and sites 1, 2 and 3 were bioaccumulation sampling sites. No S-3 is shown in this figure.

Figure 3-11 in Section 3.8, Water Quality, should identify the wells and sampling stations by the names used in the text and tables (e.g. MW-25 FWMP #27) so that the location of the wells can be compared to the data for individual wells provided throughout this section.

Table 3-3 in Section 3.8.1 (Groundwater Quality) provides data on groundwater monitoring for four wells downgradient of the existing tailings pile. Values are presented as a range and average value for each parameter. The text or table should specify the time period over which the data were collected (e.g. is all of the data from 1998 through 2002?), the frequency of sampling, and the baseline (pre-mine) value for each parameter, if available. The time period (annual, monthly, daily, etc.) over which the average value is calculated is not specified. If this value is the average over several sampling periods (e.g. the entire timeframe over which the data were collected), the usefulness of this value is not clear. The determination of whether measured values are within allowable water quality parameters is not based on the average over several sampling periods. Data on instances, if any, when measured values have approached or exceeded allowable water quality parameters would be more valuable for assessing actual water quality impacts. The location of these wells needs to be identified in relation to freshwater sources into which they might drain.

Section 3.8.2, Surface Water Quality, states “(s)urface water quality has been evaluated from FWMP samples taken from Tributary Creek downgradient from the tailings facility and Cannery Creek upgradient and downgradient from the existing tailings facility (Figure 3-12).” Why Figure 3-12 is referenced here when neither Tributary Creek nor Cannery Creek are identified in Figure 3-12 is not clear.

Page 3-45 states “The data from Tributary Creek revealed dissolved levels of cadmium, copper, mercury and zinc having values above AWQS...” but no information is provided about what these values were. The document indicates that “since 1990 these parameters have been analyzed at levels below AWQS.” This statement is of only marginal value because the timeframe during which values exceeded AWQS is not specified, and the actual measurements are not provided.

Page 3-93, Section 3.13.4 (Freshwater and Salmon Habitat: Original Conditions). The final sentence in the first paragraph states “ (a)lthough few of these systems will be affected by any alternative of the proposed action (the exception being Tributary Creek tributary to Zinc Creek), salmon spawning in any of these streams will migrate through Hawk Inlet which does have the potential to be affected” This

statement appears to contradict the assertion made in Section 4.10 that “(n)o discernible effects are expected on marine life, phytoplankton, marine fish or shellfish, salmon, or Hawk Inlet area fisheries.”

Page 4-15, Section 4.5.1 states “(t)here would be negligible adverse effects if tailings effluent is discharged directly to marine waters in Hawk Inlet without treatment.” This statement is not supported by data or information presented in the DEIS. Although the water quality model indicates that allowable discharge levels under the existing NPDES permit will not be exceeded, the results from the water quality model do not take into account potential changes, if any, in heavy metals concentrations in marine habitats and biota. Because the DEIS does not present the results of the monitoring program for assessing heavy metal concentrations in marine sediment and biota, a conclusion based on the information presented that an impact to these resources has not occurred and will not occur in the future is not possible.

Page 4-27, Table 4-4. These tables are a repeat of the tables on Page 4-26.

In conclusion, NMFS is concerned with the potential for changes in the quality of habitat for resident and migratory organisms associated with Hawk Inlet and its freshwater tributaries due to accumulation of heavy metals from mine operations. The Final Environmental Impact Statement should include analysis of the data that have been collected from sampling of intertidal and subtidal bottom sediments, the corresponding biota, and the water column for heavy metal concentrations. This analysis should be of sufficient detail to support a determination regarding potential impacts to EFH and associated species, as well as any appropriate mitigation measures.

The USFS should initiate an EFH consultation with NMFS as required by the Magnuson-Stevens Act. For additional information on EFH consultation procedures, please contact Katharine Miller with the NMFS Alaska Region at (907) 586-7643.

Sincerely,

James P. Burgess
NEPA Coordinator
NOAA Office of Strategic Planning

cc: EPA Juneau, Chris Meade
USACOE, Colonel Griffith
ADEC, ADF&G, ADNR, USFWS, Juneau