

EXECUTIVE SUMMARY

Main Panel Finding

The Kemess North Mine Joint Review Panel (the "Panel") has concluded that development of the Kemess North Copper/Gold Project (the "Project") in its present form would not be in the public interest. In the Panel's view, the economic and social benefits provided by the Project, on balance, are outweighed by the risks of significant adverse environmental, social and cultural effects, some of which may not emerge until many years after mining operations cease. The Panel recommends to the federal and provincial Ministers of the Environment that the Project not be approved as proposed.

The Panel's main finding is based on a comprehensive synthesis and analysis of the information provided to the Panel regarding adverse and beneficial Project effects. These effects were used as the basis for the assessment of the pros and cons of Project development from a range of perspectives. One of the most important components of a panel review is to integrate public values, as well as government policy expectations, into the review process. In order to weigh the Project development pros and cons in the context of public values and policy expectations, the Panel chose to adopt what it considered to be an appropriate sustainability assessment framework. In developing this framework, the Panel consulted recent mining sector sustainability initiatives, as well as the B.C. government's 2005 Mining Plan. The framework was used to determine whether or not the Project is in the public interest.

The Panel has considered the Project from five sustainability perspectives: Environmental Stewardship; Economic Benefits and Costs; Social and Cultural Benefits and Costs; Fairness in the Distribution of Benefits and Costs; and Present versus Future Generations. The Panel notes that the Project's benefits accrue for only a relatively short period (two years of construction and 11 years of mining production). This period could be reduced if the Project, which is not economically robust, were to close prematurely. Key adverse effects include the loss of a natural lake with important spiritual values for Aboriginal people, and the creation of a long-term legacy of environmental management obligations at the minesite to protect downstream water quality and public safety. These obligations may continue for several thousand years, and include ongoing treatment of poor quality water from the open pit (the "North Pit"), and regular monitoring and maintenance of the waste disposal impoundment (the "Duncan Impoundment") and its three dams, to preserve the desired water balance and water chemistry in the Impoundment and to ensure the health of its aquatic ecosystem. The Panel also notes that it may be difficult for Aboriginal people to increase their share of Project benefits, although as the region's primary residents and users, they would experience first-hand any impacts on traditionally-used resources.

The Panel has prepared a comprehensive report that attempts to summarize and examine all of the information considered in the review process. The detail and scope of the report reflects the complexity of the Project and the challenges posed in weighing its pros and cons. The Panel's intent in preparing a detailed report is to allow interested parties the opportunity to consider all of the information that the Panel has taken into account in reaching its conclusions and recommendations.

Acknowledging that Ministers could disagree with the Panel's advice and approve the Project, the Panel has included thirty-two recommendations in this report which, in its view, would help to enhance Project benefits and facilitate efforts to manage and minimize adverse effects, should the Project proceed.

Project and Setting

The Proponent proposes to develop the Kemess North copper and gold deposit, which is located 6 km north of its existing Kemess South Mine, approximately 250 km northeast of Smithers, B.C., and 450 km northwest of Prince George, B.C. The Project represents an expansion of the existing Kemess South mine, and includes development of a new open pit, modification of the existing mill, and related infrastructure. Much of the infrastructure already in place for the Kemess South mine, including a 400 km access road, 383 km power line, mill, camp and airstrip, would be used for the expansion. The Project has the potential to increase the productive life of the existing infrastructure by 11 years. The development of the Kemess North mine would mean a continuation of the economic and social benefits provided by the Kemess South mine, including the 475 current jobs.

Ore milling capacity would be increased from the current 55,000 tonnes per day to up to 120,000 tonnes per day. Over the life of the Project, the Proponent estimates that 397 million tonnes of tailings and 325 million tonnes of waste rock would be generated. Due to the high sulphide content, much of this material would be prone to metal leaching (ML) and acid rock drainage (ARD) processes if not properly managed. To prevent ML/ARD, Northgate proposes to place most of the waste rock and tailings underwater in a natural water body – Duncan (Amazay) Lake. The Duncan Impoundment would be created by constructing three dams to expand the Lake's storage capacity, and would be managed to ensure a pH that is at least neutral, to minimize dissolved contaminants.

Within a few years after mine closure, various site reclamation activities would be completed, including decommissioning of facilities no longer required, recontouring and revegetation of terrestrial disturbances, dam spillway construction and replacement of lost wetland habitat in the Impoundment. Within five years after mine closure, the water quality of the Impoundment is expected to have stabilized and to be suitable for direct discharge to Duncan Creek. Once this commences, hydrological regimes are expected to revert to approximately their pre-mining condition. Late in the review, the Proponent committed to re-introduce functioning aquatic systems to the Impoundment once water chemistry is stable and acceptable. Some 40 to 80 years after closure, the contaminated waters of the North Pit lake would overflow. The overflow would require water treatment before being discharged to the Impoundment, to ensure that it does not adversely affect the Impoundment's water chemistry. The treatment process would generate sludge which would be stored in a landfill.

The Project has a well-defined construction phase (~2 years), operational phase (~11 years) and closure phase (up to 5 years). After closure, the minesite would need to be actively managed throughout an indefinitely long post-closure phase (likely lasting thousand of years) to ensure that the environment and public safety are protected. For convenience, the Panel has divided the post-closure period into two phases: (1) "early post-closure", the period of 40 to 80 years following closure prior to North Pit lake treatment; and (2) "longer-term post-closure", the period following commencement of North Pit water treatment and sludge disposal.

Throughout post-closure, site management activities would include dam inspection and maintenance, and monitoring of Impoundment water balance and water quality to ensure that any necessary measures are taken to maintain an adequate water cover over potentially reactive wastes and preserve acceptable water chemistry. Aquatic ecosystems established in the Impoundment after closure would also need to be monitored to ensure that they remain healthy if the water balance and water chemistry fluctuate over time. During the longer-term post closure period, both the water treatment plant and sludge landfill facility would require operation and maintenance until North Pit lake water quality was suitable for untreated discharge into the Impoundment. This would be expected to take at least several hundred years.

The proposed North Pit is located 2 km east of Duncan Lake (referred to as Amazay Lake by local Aboriginal people) in the Attycelley Creek watershed, which drains into the Finlay River immediately downstream of Thutade Lake. The closest communities by road are Germansen Landing and Manson Creek (respectively 230 km and 250 km from the mine). The closest communities by air are Kwadacha (approximately 70 km) and Tsay Keh Dene (approximately 120 km). Four Aboriginal traditional territories include or lie adjacent to the project location - the Kwadacha, Tsay Keh Dene, Takla Lake and Gitxsan House of Nii Kyap traditional territories. The first three groups have collectively identified themselves to the Panel as the Tse Keh Nay.

The Review Process

The Project is subject to the requirements of the British Columbia Environmental Assessment Act and the Canadian Environmental Assessment Act. The Panel was established in May 2005 to conduct an assessment of the potential environmental, economic, social, health and heritage effects of the Project, including such effects on Aboriginal people. The Proponent filed an Environmental Impact Assessment (EIA) in October 2005, as well as several subsequent submissions which were intended to respond to concerns raised by review participants. Opportunities for participation by interested parties, including three comment periods, were provided during the panel review process. Public hearings were held initially in October, November and December 2006 in Prince George, Smithers and Kwadacha. The hearings provided interested parties the opportunity to better understand the Project and its consequences and to present their views and concerns to the Panel. Public hearings were reconvened in Smithers in May 2007 to obtain additional information from Aboriginal people, particularly information on traditional land use and socio-economic conditions, and to give an opportunity for other parties to provide final submissions to the Panel.

Assessment of Alternatives

The Proponent conducted extensive geochemical testing to determine the potential for ML/ARD processes associated with the Project's waste rock and tailings. The Proponent's geochemical assessments, which characterized most of these materials as having significant ML/ARD potential, were supported by most technical specialists. The Panel concludes that the risk of significant adverse effects on water quality and fisheries linked to ML/ARD is a central and fundamental issue for this review. As a result, alternatives assessments have focussed primarily on the identification of waste rock and tailings disposal options which would be suitable for preventing ML/ARD. The Panel agrees with the waste disposal approach proposed by the Proponent, which is to store these materials underwater, thereby suppressing ML/ARD processes. Again, this approach was supported by most technical experts. In the Panel's view, other technology-based disposal alternatives pose greater environmental management risks.

The Proponent initially considered several sites for underwater waste disposal, and presented two options in its EIA. Option 1 (the Proponent's preferred option) centred on the use of Duncan (Amazay) Lake and the Kemess South Pit for underwater disposal of waste materials. Option 2 would have entailed flooded disposal of wastes in multiple on-land impoundments. The Panel concludes that Option 2 would pose a greater risk of adverse environmental effects than Option 1, even recognizing that Option 1 entails the loss of Duncan (Amazay) Lake. In addition, based in part on advice from independent economic consultants, the Panel agrees with the Proponent's own conclusion that Option 2 would not be economically feasible. The Panel, therefore, concludes that Option 1 is the only waste disposal alternative which is environmentally effective, and technically and economically feasible.

