FORTUNE MINERALS LIMITED
148 Fullarton Street, Suite 1600, London, Ontario, Canada N6A 5P3
Tel. 519-858-8188 ~ Fax. 519-858-8155

October 22, 2012

Chuck Hubert
Senior Environmental Assessment Officer
Mackenzie Valley Review Board
200 Scotia Centre
Box 938, 5102-50th Ave
Yellowknife, NT
X1A 2N7

Dear Mr. Hubert

Re: Final Written Submission for the NICO Project - EA0809-004 Developer's Assessment Report

Fortune Minerals Limited ("Fortune") is pleased to submit its final submission to the Mackenzie Valley Review Board for the NICO Cobalt-Gold-Bismuth-Copper Project. It is our understanding that the public registry will be closed at the end of this business day. Fortune looks forward to the Review Board's Report of Environmental Assessment.

Please contact me if there are any questions concerning this submission.

Sincerely,

Fortune Minerals Limited

Rick Schryer, Ph.D.
Director of Regulatory and Environmental Affairs

Final Written Submission from Fortune Minerals Limited

Submitted to the Review Board for NICO Project – EA8089-004

October 22, 2012

Table of Contents

Appendices

1.0 INTRODUCTION

Fortune Minerals Limited (FML) has been participating in the Mackenzie Valley Environmental Impact Review Board's (Review Board) environmental assessment process since 2009 when it filed its water license application to construct and operate the NICO Project, a gold-cobalt-bismuth-copper deposit 160 kilometres (km) northwest of the city of Yellowknife and 50 km northeast of the community of Whati. During that time FML has interacted with government and regulatory agencies, including the Review Board, and the Tłı̨chǫ people to identify potential impacts of the NICO Project. Numerous improvements to the NICO Project design and operation have been identified and adopted. The most significant of these include: removal of the processing facility to a southern location, removal of the airstrip, development of the co-disposal facility (a vast improvement over a conventional tailings pond), and the change to a reverse osmosis water treatment system. These design changes allowed FML to:

- minimize the mine footprint;
- eliminate the visual impact of the NICO Project from Hislop Lake;
- recycle a large amount of the water used; and
- discharge a high quality effluent in that it is very clean for a mining operation.

These are examples of the environmental assessment process working as it should.

FML through its Developer's Assessment Report (DAR) and supplementary information and commitments, has established that, with the mitigations it has proposed, the NICO Project will not have significant adverse effects on the environment.

This document serves to address some of the points raised by parties in final submissions to the Review Board, particularly those from the Tłı̨chǫ Government.

2.0 TRADITIONAL KNOWLEDGE

Through ongoing discussions with Tłı̨chǫ people, concerns about previous experiences with mines in the area such as Rayrock became evident. The Tłı̨chǫ people's primary concerns were water quality in relation to wildlife and human health and the overall potential of the NICO Project to contaminate the environment, especially in relation to caribou. Many of these concerns were based on fears from events that took place a long time ago when mining regulations were virtually non-existent. It continues to be a challenge to distinguish these fears from substantiated concerns based on the specific details of the NICO Project and its specific potential impacts. FML believes there is a clear link between education and NICO Project transparency and reducing the impact of perceived risk. FML recognizes that these fears are real to Tłı̨chǫ people and has committed to work with the Tłı̨chǫ Government to inform people about how mining has changed and how there are numerous layers of design and regulatory safeguards in place to protect the environment, especially in specific areas identified by the Tlicho such as Hislop Lake and the Idaa Trail. FML is hard pressed to understand the link between additional Traditional Knowledge (TK) collection and mitigating perceived risk. FML respects the Tłı̨chǫ concern for protecting stories, histories, and place names and is willing to discuss, through the IBA process, appropriate measures and mitigations (e.g., providing support to convert previously gathered TK information that could be lost forever if not taken off tapes and put on current technology). Projects such as the example provided have value for retaining stories and FML is committed to working with the Tłı̨chǫ Government to determine a path forward for retaining stories, histories, and place names.

The Review Board also heard these concerns and included them in the Terms of Reference (ToR) as **key lines of enquiry** and subjects of note to be addressed in the DAR. FML heard from a number of Tłı̨chǫ people that Hislop Lake and the Idaa Trail are places of special significance and must be protected. In response, FML has designed the Project to have as little impact on these areas as possible. FML is proud to state that there will be no physical or visual impacts to Hislop Lake or the Idaa Trail as a result of the NICO Project, with the exception of a bridge across the Marian River.

To gain a better understanding of the importance of locations such as Hislop Lake to the Tłı̨chǫ people, FML completed a traditional knowledge study in 2009 that was submitted to the Review Board as part of the DAR in May 2011. In July 2009 the Review Board found that the DAR met the requirements of the ToR (conformity check). Shortly thereafter, the Tłı̨chǫ Government approached FML to fund a TK study of their own. Despite the results of the conformity check, FML agreed to fund the Tłı̨chǫ TK study, of which half the budget was dedicated to a field program, so that Tłı̨chǫ people could provide their own perspective on traditional knowledge issues. The field program was never completed which means the only field validation of heritage resources was completed by FML. These surveys done by FML, were only done after consulting with an elder chosen by the community and included Tłı̨chǫ and North Slave Metis Alliance representatives. With respect to the traditional knowledge work that was done by the Tłı̨chǫ Government, FML observes that, while there are similarities, there are also disparities between the results of the three heritage studies completed by FML and those reached by Tłı̨chǫ Government regarding heritage sites. FML notes that the Tłı̨chǫ Government TK Study report:

i. was on a regional rather than site specific basis;

ii. lacked field verification of specific site results;

iii. lacked precision regarding the location of sites indicated as being within the NICO lease boundary (i.e., use of a 5 km buffer) indicating those sites could be outside the geographic area of the lease boundary);

iv. did not describe the condition of identified sites (i.e., is there anything visible to the naked eye re: cabin or burial site); and

v. includes erroneous information that is being allowed to perpetuate (i.e., that the water quality from the Project will kill muskrats).

FML has committed to use the results of the Tłı̨chǫ TK study in the development of monitoring plans and mitigation of potential impacts. We feel that the Review Board has sufficient TK information related to the NICO Project to make its determination of significance. The results of the Tłı̨chǫ TK study demonstrated a desire to reflect past activities to inform future understanding and traditional use of the land in the area of the NICO Project. FML sees an opportunity for people to accomplish this goal by taking advantage of the access created by the mine to access areas that were previously difficult to reach. As stated earlier, there will be no impacts to Hislop Lake from the NICO Project. Excluding the NICO Project lease area, people will still have the opportunity to use this region as they have in the past, including Hislop Lake, Marian River, and Burke Lake.

3.0 DETERMINATION OF SIGNIFICANCE

FML is of the view that the Tłı̨chǫ Government use of the term ‘significant concern’ must be considered in context. The Tłı̨chǫ concern about Rayrock and ‘removal of the land from traditional use and memory’ is based on what happened over 55 years ago in relation to mining of a uranium deposit under a regulatory system that did not have:

- the technical capability or engineering that is present in the current day;
- the comprehensive sophistication of the current regulatory system;
- the heightened awareness of environmental issues and mandate to avoid significant adverse effects on the biophysical or socio-cultural environment;
- the legal mandate to take into consideration Tlicho cultural concerns and the impact on their way of life; and
- a market that demands that mining companies demonstrate environmental awareness and corporate social responsibility

The Tłįchǫ people have expressed their concerns about what they "perceive" the impacts of the NICO Project might be, especially as they relate to water. These concerns were largely grounded in their experiences with the Rayrock uranium mine that operated between 1957-1959. FML is sensitive to these concerns and has responded through design modifications and mitigation commitments that address water quality issues. The Tłįchǫ appear to have overlooked these measures, choosing not to temper their citizens' 'perceived' concerns with facts about how those concerns had been addressed in the design of the NICO Project.

While it is true that the NICO Project will temporarily remove a small geographic area from traditional use – the area that is taken up for mining – concerns about contamination of the land and water have been addressed through NICO Project design. In response to feedback from the Tłįchǫ and other parties, FML improved its NICO Project design, improvements that are outlined in the DAR, as well as FML commitments to further mitigations (attached as Appendix I to this submission). These measures are designed to avoid impacts where feasible, or, where unavoidable, to reduce the significance of residual impacts to the point where there are not significant. FML is of the view that we have soundly established that the impacts of the NICO Project will not be significantly adverse on the environment. Further we are highly confident that, with the proposed measures, the ability of the Tłįchǫ people to drink water downstream of Peanut Lake and to consume wildlife or wild vegetation from the land as they have done traditionally in the past, will not be affected as a result of the NICO Project.

FML is confident in the conclusion of its TK and heritage resources studies that the NICO Project will not change existing conditions related to the ability of the Tłįchǫ to communicate among themselves or to transmit their culture. In fact, the NICO Project may enhance Tłįchǫ ability to improve those conditions because they will have the financial resources as individuals and as a government to document past uses and to support programs of their choice and design.

FML notes that the Review Board has a mandate under both the MVRMA and the Tłįchǫ Agreement to consider traditional knowledge as well as other scientific information where such knowledge or information is made available to it. FML respectfully submits that the Review Board has sufficient TK before it to satisfy these provisions and to reach a conclusion that the net effect of all of the TK information presented to it, is that the NICO Project will not cause a significant adverse impact on the Tlicho ability to practice their traditional way of life and cultural practices.

The Review Board is also urged to consider 'significance' in the context of innovation and development that has occurred both technically and administratively in terms of regulatory oversight over the past half century. This includes FML's proposed engineering design for the NICO Project and Fortune's confidence in the design and proposed mitigation measures, particularly the:

- smallest possible footprint and therefore reduced impact on the biophysical footprint;

- Co-disposal of waste rock and tailings – which contrary to Tłı̨chǫ Government assertions is not a new or unproven technology. As stated in IR TG_27, there are a number of co-disposal facilities in operation internationally and the experience of these operations influenced the design of the NICO Project CDF; and

- use of wetlands for sequestration of Chemicals of Concern on closure – which contrary to Tłı̨chǫ Government assertions is not a new or unproven technology in arctic conditions. It requires only site specific design for maximum efficiency (i.e. size and location of constructed wetland cells, placement of and quantity of vegetation and adjustment of rate of flow of effluent/water), and not a proof of effectiveness of the technology to do the intended job.

FML notes that none of the technical experts advising the Review Board (i.e., internal analysts or government departments) have expressed concerns about either of these technologies.

3.1 Water Quality

We have heard from many Tłı̨chǫ citizens that water quality is their primary concern from the perspective of contamination at the NICO Project site and drinking water in Behchoko or while travelling on the land. The treated effluent from the NICO Project will be discharged into the Burke Lake watershed, downstream of Hislop Lake. During operations, the effluent that will be discharged by the NICO Project will be small in volume and will have been treated by a reverse osmosis system. Reverse osmosis is one of the best water treatment systems available. The chemicals that will be used in the process will be flocculants which are non-toxic. There will be no cyanide used at the NICO Project. FML demonstrated in the DAR and during the hearings that the water from the NICO Project will meet discharge requirements and will be protective of the aquatic environment, wildlife and people.

The development of the Site-specific Water Quality Objectives (SSWQOs) specifically focused on concentrations of the parameters of concern that would be protective of aquatic life under the specific conditions in each waterbody. The development of the SSWQOs were based on the components most sensitive to changes in water quality (i.e., invertebrates and fish). It included a review of toxicity data for invertebrates and fish, and considered those environmental concentrations that would protect the species present under continuous long term exposure. The approach taken in developing the SSWQOs is consistent with the approach to protect the most sensitive species in the most sensitive life stage under continuous exposure and meets the intent of the narrative objective statements. The SSWQOs developed were assessed in the Risk Assessment for their ability to protect wildlife species and human health. The results of the risk assessment showed no threat to any wildlife or humans from drinking water from the NICO Project. Site-specific Water Quality Objectives are appropriate because they can be measured and assessed on an ongoing basis and allow for adaptive management if water quality approaches SSWQOs. Narrative statements reduce the opportunity for adaptive management or mitigation since these are based on assessing changes only after impacts have been observed.

Fish and water quality will be monitored throughout NICO Project operations, both at the NICO Project site and in the Marian Lake watershed. The specific locations will be selected in cooperation with the Tłı̨chǫ people. It is our goal that this monitoring be completed in collaboration with Tłı̨chǫ people. FML has already started initial discussions with the Tłı̨chǫ Government on a framework for community based monitoring that would allow Tłı̨chǫ people to go out on the land and test the water for themselves. FML has also suggested that an Elders advisory committee be formed to provide advice on what should be

monitored, where it should be sampled and how the results should be interpreted. Together with FML's environmental management plans, we are confident that the NICO Project will not have significant adverse impacts on water quality and the people will be able to use the water in Burke Lake, the Marian River as they have in the past.

FML has incorporated project design measures so that the water quality downstream of Peanut Lake will be equivalent to baseline conditions. During operations reverse osmosis will be used to treat water. The CWTS will be built to establish its efficiency, and design considerations (i.e., size of CWTS, placement of and quantity of vegetation + rate of flow of effluent/water, and precise location of the cells) so that FML can demonstrate that it will work as planned prior to closure. At closure the CWTS will be fully developed and will have been tested to demonstrate its efficiency. It will also be monitored during active closure.

The FML approach is not like the Canadian Zinc Corporation Prairie Creek Mine where, in Review Board Report of Environmental Assessment and Reasons for Decision EA0809-002, two Board members issued a dissenting opinion. In that decision, the minority said they believed that "it remains unclear exactly what the developer will do to protect water quality" (page 75). That is not the case for the NICO Project where SSWQO have been designed to be protective of the aquatic environment and human health downstream of Peanut Lake.. As a result, FML is highly confident it has clear discernible measures in place to treat and release water to the receiving environment and that water quality in areas that are key to the Tłįchǫ, such as Hislop Lake, Burke Lake, and the Marian River system downstream of the mine at the Peanut Lake outlet will not be adversely affected by the NICO Project.

3.2 Geochemistry

FML is committed to developing this Project in an environmentally sound manner and takes all recommendations made by parties into thoughtful consideration. The mine design and project viability hinges on the use of an appropriate, reasonable and conservative cut-off criteria for sulphide sulphur. Using a lower criteria that the 0.3% wt. proposed by FML would result in insufficient material to develop the closure concept fully, thus lowering this criteria would likely result in a less robust design and plan due to material constraints.

In the Tłįchǫ Government's Closing Arguments the reviewer has argued against the sulphide cut-off proposed, while only making reference to a small portion of the overall geochemical database used to develop the sulphide cut-off of 0.3 wt. %. The sample size on which this calculation is based is much larger and more robust than that quoted in the Tłįchǫ Government Closing Arguments. A total of 293 samples were selected tested and used in the geochemical evaluation presented in the DAR.

Given the consequences to Project feasibility and in considering the standard practice in the mining industry, Fortune requested that Golder Associates Ltd. (Golder) prepare a technical report presents data from the entire data set as available in the supporting documents to the DAR. That report is included as Attachment 2 to this submission and is summarized below. This is not new information. For transparency, Attachment 2 presents Annex A of the DAR, specifically Appendix 3.1 of the Annex A that presents the Project Mine Rock Management Plan.

To summarize the key results of this Appendix:

1) **Sample Numbers and Adequacy** (See Appendix II for more detailed discussion and figures showing distribution of samples and results). There is substantially more data available and provided as part of the DAR than appears in the discussion on closure in the Tłįchǫ Government's

Closing Argument. As stated above, 293 samples were tested. Forty-two samples were tested for Net Acid Generating (NAG) to provide a full range of sulphide contents based on a review of existing data at the time, which is contrary to the 3 NAG tests referenced in the Tlicho Government closing remarks. Kinetic testing was conducted on site, under ambient conditions, which is considered more representative of conditions that might actually occur in the field. When considering the entire data set there are enough samples to satisfy current guidelines (MEND 2009; INAP 2009).

The Tłįchǫ Government indicated that no samples had been NAG-tested between 0.04 and 0.3% S, when our data shows that 37 of the 42 samples were analysed for sulphide and of these 37 samples 22 had concentrations between 0.1 and 0.5 % S and 16 samples were less than 0.3 wt %S. The Tłįchǫ Government asserts that Humidity Cell (HC) data does not cover range of sulphide conditions however they do not note that the objective of the kinetic testing program initiated in 2004 was to test "typical" samples of mine rock collected from the Project and that these were supplemented by field test cells. Further they do not note that the more conservative NAG test work (42 samples) was used in conjunction with Acid Base Accounting (ABA) testing (231 samples) to define a project cut-off criteria.

Available data (293 sulphide results; 291 ABA results; 42 NAG test samples) all support our proposed cut-off criteria of 0.3 wt. % sulphide. Humidity Cell tests (12 lab, 5 field test cells) help provide an understanding of the possible water quality that might result from the project site.

2) **Alignment with applicable guidelines** The geochemical characterization program was developed iteratively in response to changes in the Project and changes in the "state of the art" with respect to geochemical testing.

   The key guidance document when the geochemical characterization program was initiated in 2004 was the *"Draft guidelines and recommended methods for the prediction of metal leaching and acid rock drainage at minesites in British Columbia."* (Price, 1997). The rationale for sample selection is discussed in detail in Section 4.3 of Annex A. When the supplemental mine rock sample program was initiated in 2008, NAG testing was considered a more mainstream method rapidly confirming the acid generation potential of a sample. The more recent geochemical characterization guidance documents *"Prediction manual for drainage chemistry from sulphidic geologic materials. MEND Report 1.20.1."* (MEND, 2009) and *"Global acid rock drainage guide (GARD Guide)*" (INAP, 2009) support this and recommend NAG testing. The majority of the samples in the geochemical testing dataset were collected in 2004, thus the NAG testing dataset is not extensive as the ABA testing dataset however the 2004 data was used to help select an appropriately representative subset of NAG samples that would capture the range of conditions and sulphide content from the overall deposit.

3) **Consideration of form of NP minerals and their reactivity (NPR vs. CaNPR) -** As stated in the response to information request NRCAN_1-1, the NP:AP ratio (also called the neutralization potential ratio or, NPR) criteria derived with neutralization potential (NP)is considered to be an appropriate method of evaluating acid generation potential based on the Project dataset.

   Two results of ABA can be used to assess the neutralization potential of a sample: bulk NP or carbonate NP (CaNP). Bulk NP is measured by a titration, which consumes all potential mineral sources capable of neutralizing acidity in a sample. Carbonate NP is calculated based on the carbonate concentration measured in a sample.

The decision to use NP:AP rather than CaNP:AP was based on a large scale review of the geochemical dataset. This approach is consistent with the guidance in Price (1997) and MEND (2009). Acid generation potential was evaluated by NP:AP ratio, CaNP:AP ratio and NAG-pH. As outlined in Attachment 1:

- all samples that had NAG-pH less than 4.5 had NP:AP ratios less than 2, and contained less than 0.3% sulphide-sulphur
- all samples that had NAG-pH less than 4.5 had CaNP:AP ratios less than 1, and contained less than 0.3% sulphide-sulphur

Therefore, the criterion for evaluating acid generation potential could either be a CaNP:AP ratio of 1, or an NP:AP ratio of 2 based on the detailed comparison of ABA results to NAG test results and this is consistent with currently accepted guidelines (MEND 2009; INAP 2009). As such, the contention in the Tłįchǫ Government Closing Argument that many samples with low sulphur contents would be acid generating based on CaNP is not correct.

FML considers that a comprehensive, representative, and conservative geochemical assessment has been completed to date and presented in the available technical documents at a level appropriate for the DAR.

FML is confident in the samples collected, methods used, and conclusions of the test work done to date. FML is committed finalizing and implementing the mine rock management plan and is confident that the results collected to date will be sufficient to provide adequate guidance on mine rock management issues.

3.3 Closure

At closure, there are two Project elements that will control the quality of the water that would flow from the NICO Project: the co-disposal facility (CDF) and the Constructed Wetland Treatment System (CWTS). The CDF is the best means of dealing with mine rock and tailings from this site, as designed. FML has demonstrated during the Environmental Assessment review process that any synthetic cover would require long-term maintenance, does not eliminate flow (i.e., because it is not impervious), and would leave a larger visual impact because reclamation would be less effective. Therefore, a cover is not a feasible option.

The CWTS has a proven track record and its performance will be demonstrated early in operations to provide confidence that this technology will address concerns. These two technologies are not new technologies and are not new to northern climates. Nevertheless, they will be monitored during construction and operation to demonstrate they will provide the level of protection required for this site at closure. The results of the risk assessment completed for the site at closure, with no water treatment, showed no significant adverse impacts to the environment. The CWTS will be put in place to give people who wish to use the area for traditional activities the confidence that they can do so without being exposed to influences from the former mine. The CWTS is a safeguard, not a requirement to make the waters safe for Tłįchǫ people. It is designed to provide confidence in the safety of the water and subsequently reduce perceived risk.

FML is committed to involving Tłįchǫ people in the closure planning and in the implementation of closure plans such as re-vegetation and monitoring. It is FML's intention to demonstrate the success of the CWTS while the mine is still in operation. By involving the Tłįchǫ in the closure plans and reporting on the CWTS phases of testing people will be able to see that key components of the closure plan are working

early in operations. Closure plans will be re-visited on a regular basis throughout operations so that there are no surprises when the NICO Project reaches the end of its operational life.

3.4 Caribou

The scale of the NICO Project will be small in comparison to other mining projects. Fortune Mineral's effort to reduce the mine footprint means that only a small portion of the land will be affected for the period of operations. The site will be reclaimed at closure so that the effect on the landscape will be temporary.

FML has gone to great lengths to minimize the area of the caribou habitat that will be impacted. The NICO Project is located on the western boundary of the Bathurst caribou winter range and the eastern boundary of the woodland caribou range. Thus, there is a negligible to low potential for large numbers of caribou (barren-ground and woodland) to interact with the NICO Project from construction through operations.

Potential exposure to contaminants is also extremely limited which in turn limits the potential for adverse impacts to the health of the animals and to the health of the people that eat them. Together with FML's proposal to establish a no-hunting corridor along the access road and the numerous conservative assumptions made in the DAR, FML is very confident in the conclusion that Project-related impacts to caribou will not be significant. At the public hearings (30 August 2012) both Environment Canada and Environment and Natural Resources agreed with these assessment and predictions made by FML regarding boreal and barren-ground caribou that had been made in the DAR, it commitments, and responses to information requests. In Section 3.6 of the its Final Argument, the GNWT stated that "the GNWT believes that the NICO Project can be undertaken in a way that does not pose a significant adverse impact to the environment provided the commitments made by Fortune are carried out."

FML is confident that any remaining concerns can be dealt with either through the regulatory process or in direct discussions with the Tłįchǫ Government and Environment and Natural Resources.

3.5 Environmental Monitoring and Oversight

FML has either committed to or has already submitted a range of environmental monitoring plans, such as an Aquatic Effects Monitoring Plan (AEMP), an Air Quality Monitoring Plan, a Vegetation and Soils Monitoring Plan, and a Wildlife Effects Monitoring Program (WEMP), and has committed to their implementation. The Conceptual WEMP (Appendix 18.II) and AEMP (Appendix 18.I) already submitted as part of the DAR considered existing monitoring programs at other mines in the Northwest Territories, and proposes to use adaptive management principles in the implementation of monitoring and mitigation. FML has made a commitment to refine the WEMP and AEMP, prepare a Wildlife and Wildlife Habitat Protection Plan, and incorporate local and traditional knowledge through consultation with the Tłįchǫ Government, GNWT, and Environment Canada in other management plans such as closure.

Further, FML has also committed to contribute to regional cumulative effects monitoring, which requires further discussion with the GNWT and Tłįchǫ Government.

The Wek'èezhìi Renewable Resources Board (WRRB), the wildlife co-management authority established by the Tłįchǫ Agreement, is responsible for managing wildlife, plants, and forests in the public interest. Fortune believes that the WRRB is capable of fulfilling the role of watchdog in the public interest for wildlife concerns. Furthermore, the WRRB has the legislated authority to suggest and undertake management actions, a functioin that is beyond the capacity of an independent watchdog created by recommendation of the Review Board.

Some Parties have requested the establishment of an independent monitoring agency for the NICO Project as they feel this is the only way to provide protection for the environment. Yet, no one has provided an argument as to why the current regulatory system is incapable of performing this function. The Wek'èezhìi Land and Water Board (WLWB) now has extensive experience in administering and enforcing water license and land use permit requirements. Inspectors from AANDC will perform regular inspections of the NICO site to provide the on-site enforcement of license requirements. The WLWB has the resources of the various territorial and federal agencies to call upon when needed to provide expert advice on specific issues. These agencies also have their own regulations to enforce and will work collaboratively with the WLWB to ensure all environmental regulations are being met. Fortune believes the regulatory tools already exist to oversee NICO Project activities and does not see the benefit of adding another layer of administration when the current system is perfectly capable of performing its duties. Fortune will consult with the appropriate regulators, the Tłı̨chǫ people and other interested parties while developing management and monitoring plans during the permitting process to develop plans that people can have confidence in and that demonstrates how TK will be used in the development of those plans.

FML believes that independent monitoring and oversight for the CDF and CWTS could be achieved if the NICO Project were included in the environmental audit that is required under Part 6 of the MVRMA. Should the review board consider this option, such an audit would:

- be conducted at least once every five years by an independent body;
- be carried out on terms established in consultation with the Tłı̨chǫ Government and territorial government;
- analyze data collected by it, including scientific data, traditional knowledge and other pertinent information for the purpose of monitoring the cumulative impact on the environment of concurrent and sequential uses of land and water and deposits of waste in the Mackenzie Valley;
- evaluate the information collected to determine trends in environmental quality, potential contributing actors to changes in the environment and the significance of those trends;
- review the effectiveness of methods used for carrying out the above noted functions; and
- be in the form of a report that can include recommendations but must be made available to the public.

3.6 Socio-economic

There will be positive effects on the Tłı̨chǫ people through employment and business opportunities and on the Tłı̨chǫ Government through increased funds through royalties and taxes, from the NICO Project. The exact magnitude of those benefits can not be calculated at this time because some inputs are beyond the control of FML. There will be adverse effects on the Tłı̨chǫ people and, depending on funding arrangements with the Government of the Northwest Territories, on Tłı̨chǫ Government funding. Adverse effects could occur through in-migration and increased pressure on government delivered services such as housing, education, policing, health and social services. The magnitude of this impact will depend on the financial and program support contributed by the NWT and federal governments as applicable. On balance, FML concludes that there will be Project-related impacts on the socio-economic environment and that they will be positive.

3.6.1 Business Opportunities

FML has made efforts to be a valued member of the Tłįchǫ business community. Preference has been given to Northern Aboriginal businesses when sourcing goods or services and FML has engaged the local business development corporations to involve aboriginal businesses in our procurement activities, promoting capacity building and opportunities. FML has adopted policies - recognized by the Canadian Council of Aboriginal Business - that provide various types of contract possibilities for Aboriginal businesses and inclusion in all phases of the project such as construction, operations, and closure. We have also provided numerous sponsorships and financial support to education, fitness, and cultural awareness programs. FML has been a business member of the northern community for 20 years earning a proud record of hiring Tłįchǫ citizens and investing in Tłįchǫ and Northern businesses. We will continue these best practices as we develop and operate the NICO project in a collaborative effort with the Tłįchǫ people.

The Project will lead to an incremental increase in procurement levels. FML has had a positive experience to date in contracting with Aboriginal and other northern suppliers since exploration activities began (115 suppliers; of these, 99 are northern based of which 17 are Aboriginal). To increase Project-related opportunities for Northerners, FML will, when sourcing goods or services, give preference to those with capacity to perform the work, as follows:

- Tłįchǫ businesses
- Northern Aboriginal businesses
- Northern businesses
- Other companies

If an Aboriginal business is not found for a particular service, preference will be given to those with policies/strategies for capacity building of Aboriginal communities.

FML has opened an office in Yellowknife to facilitate procurement and recruitment activities, and has identified Project-related opportunities in the following areas:

- Food Services
- Trucking
- Labour and Machine Operators
- Environmental Support
- Waste handling
- Transportation
- Communications
- Reclamation

3.6.2 Employment

The number of jobs during Project construction, most of which will be contracted, will be approximately 300. During operations, total employment with contracted underground will peak at 269 jobs during the first two years whereas total employment without underground will peak at 188 jobs per year. Average annual wage (including overtime and employee contributions to pension and benefit plans) will be at or above $70,000. Other details about the measures to which FML has committed are in the DAR and the update of commitments in Appendix I.

Some of the benefits of the close proximity of the NICO Project to Tłįchǫ communities that are not offered by other mines in the NWT include: the opportunity for Tłįchǫ people to work close to home (rotation) which in turn can provide potential spin offs for other businesses and secondary employment; and greater and more flexible work opportunities to women from Whati.

FML is proud of the number of Tłįchǫ people it has been able to employ to date and intends to continue this practice in the future. FML is committed to building capacity within the Tłįchǫ communities through work opportunities, training opportunities and contract opportunities and is open to designing shift schedules and work opportunities that aren't available at other mines. FML has spoken on the public record about its willingness to consider candidates that the diamond mines haven't or won't hire due to their past records and/or lack of formal education. We made this commitment as part of our effort to maximize Tłįchǫ hires and have been public about stating that our hiring policy will be 'Tłįchǫ first'. While FML is determined to optimize the number of Tłįchǫ employees working on the Project site, we realize that setting and meeting realistic hiring goals may be a challenge based on the local and regional employment pool and workforce readiness as well as the availability of the workforce at the time the Project is able to proceed. FML will work with the Tłįchǫ communities to maximum employment opportunities.

3.6.3 Financial Expenditures and Revenues

Project expenditures during operations (i.e., economic benefits to territorial and federal governments) over a 19+ year mine life are anticipated to be:

- Wages and Benefits: $343 million (direct) Includes wages, salaries, and supplementary labour income (employer contributions to pension plans and benefit packages);
- Goods and Services: $1.4 billion (direct – wages not included); and
- Total Direct GDP: $1.8 billion.

Revenues to government will consist of royalties and taxes from income taxes and taxes on Goods and Services. Royalties payable to the federal government will flow to the Tłįchǫ Government under the terms outlined in Chapter 25 of the Tłįchǫ Agreement, as well as to other Aboriginal groups in the Mackenzie Valley that have settled land claim agreements or other fiscal arrangements in place with government.

With respect to taxes from income and from Goods and Services, it is anticipated that revenues to the territorial government will be $156 million and $363 million will flow to the federal government. The Tłįchǫ Government has authority under the Tłįchǫ Agreement to levy taxes on Tlicho citizens and on activities on Tłįchǫ lands. However, it is FML's understanding that no such laws are yet in place so it is not possible to calculate the amount of revenue that would flow to the Tłįchǫ Government from taxes on income or on goods and services.

3.6.4 Working with the Community

With respect to the Tłįchǫ concern regarding in-migration, FML has already begun discussions on a study and has agreed to work with a Tłįchǫ research team to maximize Tłįchǫ involvement in the study. FML will use the results of the study to refine an in-migration strategy. Overall, FML believes that the mine will not have a significant adverse impact on the communities around the mine.

FML has a long history of working with the Tłįchǫ as was set out by FML President, Robin Goad in his opening statement to the Review Board.

Long before FML filed its DAR in May 2011, FML consulted and engaged with the Tłįchǫ people and the North Slave Metis about what was important to them. Based on these results, FML identified key issues/lines of enquiry that formed the basis of the impact assessment in the DAR. In addition, FML concluded a number of agreements with the Tlicho Government including

- **EA Process Funding Agreement (October 2011)** to provide the Tłįchǫ Government with the financial means to examine the project from their perspective.
- **Cooperative Relationship Agreement (October 2011)** that designated liaison officers for both Parties that would communicate to promote meetings through which mutually beneficial agreement on matters affecting their respective interests could be discussed.
- **Traditional Knowledge Study Agreement (October 2011)** to conduct and provide a report on traditional knowledge related to the NICO Project area, inclusive of a workplan

In addition, FML is committed to working with the Tłįchǫ on a number of initiatives which include:

- an access agreement for the access road between the Project and the all weather road between Behchoko and Whati;
- an Impact Benefit Agreement (Participation Agreement) to enhance the positive benefits that could be available to the Tłįchǫ from the Project;
- an agreement to complete an “in-migration study” for Whati;
- community based monitoring (agreement in principle) which would include an elders advisory committee to guide the monitoring program in it’s development and implementation’ and
- focused “peer review” on the CDF and CWTS instead of monitoring agency.

FML feels it has contributed generously to fund the independent work done by the Tłįchǫ in relation to the NICO Project and has already has incorporated several of the Tłįchǫ recommendations into its list of commitments and/or proposed monitoring plans. FML will continue to work with the Tłįchǫ Government on any remaining concerns.

3.6.5 Health and Wellness

The Tłįchǫ Government has expressed concern about the potential impacts on the communities of Whati and Gameti as a result of the all land all weather road. This road, although a necessary component to the Project, is not within the scope of the Review Board’s assessment. FML has however, included in its impact assessment the impact on the communities associated with Project employees and has committed to a number of mitigations. FML feels that there will be positive changes associated with the all-weather

road such as decreased costs for food and materials, better access to essential services such as medical and dental care, more freedom to travel to other communities at considerably less expense and many others. FML believes that the Project will not substantially increase drug or alcohol consumption, or other negative lifestyle choices. These influences already exist in the community and it is only by working together that a solution to the problem can be found. The overall conclusion of the socio-economic impact assessment was that the Project will have both negative and positive impacts but on balance, negative socio-economic impacts will be limited and overall the socio-economic impacts will be positive.

4.0 RECOMMENDATIONS

FML recognizes that the Tłįchǫ People and Tłįchǫ Government are being cautious as this proposed mine will be in the heart of Tłįchǫ territory. We believe that through open and honest communication and a willingness to work together, we can address any outstanding concerns and move this project forward in a manner that will benefit both the Tłįchǫ people and Fortune Minerals. FML would like to re-emphasize its offer to the Tłįchǫ Government to begin discussions towards an impact benefit agreement and other agreements that will make this project a reality. FML has made it clear that the mine cannot operate without an all-season road. FML would like to offer its support to both the GNWT and the Tłįchǫ Government in the development of plans for the all-land winter road route re-alignment which would lead to the development of the all-season road.

5.0 NEED FOR AN ENVIRONMENTAL REVIEW

FML is of the view that referral to an Environmental review under section 128 (1) (a) of the *Mackenzie Valley Resource Management Act* is not needed because

- all of the matters that were technical issues in the course of the EA have been raised and resolved insofar as they can be at the EA stage prior to moving forward in the regulatory process;
- all of the parties that would participate in a Review have participated fully in the EA; and
- there are no new issues that could be resolved by going to a Review.

Finally, FML recommends that the Review Board conclude that:

i. the proposed NICO Project, with implementation of mitigation measures outlined in the DAR and FML's commitments, is not likely to have a significant adverse impact on the environment;

ii. an environmental impact review is not required for the NICO Project; and

iii. the NICO Project should proceed to the regulatory phase for approvals.

APPENDIX I

Updated List of the Commitments made by Fortune Minerals Limited in Relation to the NICO Project

Fortune Minerals Limited
NICO Cobalt-Gold-Bismuth-Copper Project

LIST OF COMMITMENTS

Developer's Assessment Report – May 2011
Information Requests – December 2011 and May 2012
Technical Session – February 2012
Miscellaneous Meetings – June 2011 to June 2012
Public Hearing – August and October 2012

Submitted to:
Mackenzie Valley Review Board
200 Scotia Centre
PO Box 938
Yellowknife, NWT, X1A 2N7
Canada

Report Number: **09-1373-1004** **October 2012**

Golder Associates

FORTUNE MINERALS LIMITED

Table of Contents

TABLES

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011

Section	Commitment #	Commitment Description
1 – Introduction		
1.1.4.1 – Environmental Policy	1.1	Fortune is committed to conducting its business activities in an environmentally sound manner and takes responsibility to minimize effects on the environment at all stages of development. Fortune will:
		• comply with all environmental laws and regulations and in absence of regulation, apply relevant best management practices;
		• establish and maintain clearly defined environmental management programs to guide its operations from exploration to final reclamation;
		• ensure that its directors, officers, and employees understand and adhere to its environmental management programs;
		• provide its managers and supervisors at each operations with the authority and resources necessary to carry out the applicable environmental management programs;
		• develop an adaptive management system that will periodically review environmental management programs as scientific knowledge and stakeholder expectations evolve;
		• openly communicate and work with governmental, indigenous people, employees, business partners, suppliers and local communities to develop mutual understanding of environmental issues and awareness that may affect the Company;
		• minimize and mitigate its environmental impacts and support environmental enhancement programs of common benefit;
		• continuously review environmental achievements and technology to seek and implement methods for further improvement;
		• conduct regular environmental response plan reviews to verify compliance with the corporate policy and applicable regulations. Identify revisions or improvements to current practices to minimize environmental impacts; and
		• allocate sufficient resources to meet the corporation's environmental goals.
1.1.4.2 – Health and Safety Policy	1.2	The management of Fortune is committed to preserving the health and safety of employees, client's employees, and any other personnel that interact with operations. Fortune will foster a culture conducive to reporting of unsafe acts or conditions in order that we may identify and negate those conditions before injuries occur. Fortune develops and maintains site-specific, comprehensive safety programs for each of each projects and offices. Fortune emphasizes proper implementation of programs and expects participation by all employees. Fortune will:
		• comply with or exceed all health and safety laws and regulations, requirements and industry standards applicable to activities;
		• identify and mitigate health and safety hazards arising from activities;
		• ensure that staff understands that working safely is a condition of employment and that all workers are responsible for their own health and safety, as well as the health and safety of those around them;
		• ensure the competency of staff is maintained and provide staff with training, knowledge, and resources to achieve health and safety excellence;
		• commit to the continual improvement of safety programs by setting health and safety objectives and targets, and measure and monitor performance through regular inspections, audits, and investigation of all incidents;
		• integrate health and safety into business planning and decision making;
		• commit to protect the health and safety of staff and the public; and
		• commit to always doing what is right when it comes to health and safety of staff and the public; if it cannot be done safely it should not be done at all.
1.1.4.3 – Sustainable Development	1.3	It is Fortune's goal to demonstrate that high standards of environmental stewardship and a commitment to sustainable development can be applied to all business activities undertaken by Fortune. Fortune is committed to making a positive difference in the communities in which we live and work. Fortune will:
		• maintain, communicate, and monitor its Code of Business Conduct guidelines established to set ethical standards for business practices in compliance with applicable laws, rules, and regulations and to promote responsible behaviour by the Company, its directors, officers, and employees;
		• observe the fundamental tenets of human rights, safety and non-discrimination in the workplace for all Company employees and commit to developing their full potential and encourage employment and business opportunities for indigenous peoples and local community members;
		• consider and evaluate social, cultural, environmental, governmental and economic factors in its exploration, development and mining activities with priority given to open dialogue and interaction with indigenous peoples and local community members to facilitate long-term and beneficial resource development; and
		• provide stakeholders with accurate, appropriate and timely information on Company activities.
1.1.4.4 – Community Engagement Policy	1.4	Through community investment, Fortune aspires to have a positive and meaningful impact by supporting: education, community, and environment.
4 – Engagement		
4.2.1 – Engagement Planning and Objectives	4.1	Fortune's approach to engagement for the NICO Project was, and continues to be, based on informing potentially affected communities and land users about the NICO Project, engaging community members in a dialogue about the NICO Project itself and their concerns, and informing them of the potential effects and opportunities. Fortune maintains an expressed openness to any community or meeting at any time with the Tłı̨chǫ Government's consent. Fortune values the input of the elders and land users and Fortune is committed to develop the NICO Project in the most environmentally logical manner possible taking into account the traditional and future uses of the land by the people on the land.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
4.2.2 - Engagement Approaches for Traditional Knowledge Holders	4.1	Fortune r remains committed to information sharing and dialogue with the First Nation and Métis communities beyond the Developer's Assessment Approach (DAR) community engagement program as the project moves through the approvals, permitting, development, operation, and closure phases. Fortune has offered to fund a Traditional Knowledge (TK) study by the Tłı̨chǫ to provide the information that Fortune requires for the Environmental Assessment (EA) process. Fortune has negotiated an agreement with the North Slave Métis Association (NSMA) to conduct its own Métis TK research to provide the information Fortune requires for its EA.
4.3 - Engagement Activities Proposed Community Engagement	4.3	Fortune proposed plans for community engagement include:
		• direct community consultation meetings to further discuss the NICO Project using the 3-dimensional physical models developed to help demonstrate the NICO Project and its natural setting once consent from the Tłı̨chǫ Government is provided.
		• plans to form a Tłı̨chǫ advisory board, or being subject to a board formed by the Tłı̨chǫ Government that will become the primary conduit for consultation between Fortune and the Tłı̨chǫ people; however, this has not been negotiated.
		• plans that the environmental monitoring of the NICO Project will be either undertaken by a Tłı̨chǫ owned company or government agency, funded by Fortune and mandated by the Wek'èezhìi Land and Water Board (WLWB).
5 – Traditional Knowledge		
5.4.3 - Monitoring and Mitigation	5.1	In addition to the monitoring and mitigation plans detailed in the following Sections for the NICO Project, Fortune has committed to including the following:
		• Fortune is committed to having discussions with hunters and trappers who approach Fortune with the belief that their hunting and trapping practices have been compromised by the NICO Project;
		• Fortune will hire Tłı̨chǫ people to perform on-site monitoring whenever possible, and assist in the design of monitoring programs;
		• Fortune has completed initial site visits for the Elders of all communities to assist in the design of site monitoring plans;
		• burial sites will be avoided, and archaeological sites will be avoided or mitigated according to acceptable procedures;
		• Fortune will examine ways to mitigate dust generation on the road to limit potential impacts on plant and animal life;
		• Fortune will have a monitoring program in place to monitor water quality;
		• Fortune has added a baseline water quality station at Behchokǫ̀ that will be monitored now and during the operation of the NICO Project to check water quality;
		• Fortune has added 2 water quality stations in Hislop Lake and will add another in Behchokǫ̀ to satisfy concerns over water quality in that lake; and
		• Fortune has committed to developing a monitoring program with the help of the Tłı̨chǫ that will examine the health of streams and lakes potentially affected by the NICO Project.
7 – Key Line of Inquiry: Water Quality		
7.5.2.1 – Pathway with No Linkage	7.1	Sediment releases from road construction including watercourse crossings can affect surface water quality of nearby surface waters. The following mitigation steps will be undertaken:
		• sediment and erosion control measures (e.g., silt curtains, runoff management) will be used to control sediment releases during construction; and
		• in-stream work during road crossing construction will either be avoided or be limited to when watercourses within or adjacent to the construction area are not flowing or during low flows conditions.
		Sediment releases from land disturbance during mine construction can affect surface water quality of nearby surface waters. The following mitigation steps will be undertaken:
		• sediment and erosion control measures (e.g., silt curtains, runoff management) will be used to control sediment releases during construction, and during reclamation; and
		• construction runoff will be captured and discharged into a polishing pond (e.g., Surge Pond), to settle out suspended sediments prior to release to peanut lake.
	7.2	Sediment releases during the construction of the water intake in Lou Lake and the effluent outfall in Peanut Lake can affect surface water quality in Lou Lake and Peanut Lake.
		• construction work will be under dry conditions (i.e., a cofferdam will be constructed to isolate the construction area in the lake) and sediment and erosion control measures (e.g., silt curtains, runoff management) will be used to control sediment releases during construction.
7.5.2.1 – Pathway with No Linkage	7.3	Spills and leaks from equipment operation (e.g., petroleum products, reagents, wash-down) on the mine site or along the NICO Project Access Road (NPAR) can affect groundwater, surface water, and sediment quality of nearby surface waters. The following mitigation steps will be undertaken:
		• hazardous materials and fuel will be stored according to regulatory requirements to protect the environment and workers (i.e., Materials and Waste Management Plan);
		• smaller storage tanks (e.g., engine oil, hydraulic oil, and waste oil, and coolant) will be double walled, or located in lined and bermed containment areas;
		• separate areas will be established for the handling and temporary storage of hazardous wastes;
		• reagents and fuel Enviro-Tanks will be located in larger, double-walled containers;
		• domestic and recyclable waste dangerous goods will be stored on-site in appropriate containers to prevent exposure until they are shipped off-site to an approved facility;
		• individuals working on-site and handling hazardous materials will be trained in the Transportation of Dangerous Goods;
		• soils from petroleum spill areas will be deposited and spread in a lined landfarm cell for bioremediation;

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
		• an Emergency Response and Spill Contingency Plan has been developed and will be implemented;
		• emergency spill kits will be available wherever toxic materials or fuel are stored and transferred; and
		• construction and mining equipment, machinery, and vehicles will be regularly maintained.
7.5.2.2 – Secondary Pathways	7.4	If water quality does not meet site-specific water quality objectives, water will be impounded in the Surge Pond or in Seepage Collection Ponds (SCPs) No. 1, 2, and 3 until the Effluent Treatment Facility (ETF) is commissioned where it will be treated prior to release to Peanut Lake.
7.5.2.2 – Secondary Pathways	7.5	Process and potable water requirements for the NICO Project may decrease drainage flows and surface water levels, and affect surface water quality. To mitigate these possibilities the following will be done:
		• capture and reuse site water to reduce fresh water requirements;
		• recycle water from tailings thickener and from the Open Pit for grinding operations; and
		• recycle excess water from the SCPs and treat prior to entering the receiving environment.
7.5.2.2 – Secondary Pathways	7.6	The following mitigation steps will be undertaken for site water management:
		• the Water Management Plan will control surface water on-site;
		• runoff from the mine site will be captured and will either be treated in the ETF and discharged to Peanut Lake or will be re-used in the Mineral Processing Plant (Plant);
		• any water that cannot be released will be impounded in the Water Management Ponds (e.g., Surge Pond, SCPs);
		• the site will have sufficient storage capacity in Surge Ponds to store both operating flows and storm event;
		• water from the Open Pit will be pumped to the Surge Pond and then either to the Plant for re-use or to the ETF for treatment prior to discharge to Peanut Lake; and
		• sewage and grey water will be treated with a Rotary Biologic Contactor and the effluent will be pumped to Reclaim Pond in the Co-Disposal Facility (CDF), only if unsuitable for discharge. Water from the Reclaim Pond will be treated in the ETF prior to discharge.
7.5.2.2 – Secondary Pathways	7.7	The CDF will prevent vertical and lateral seepage by:
		• capturing runoff from the CDF in SCPs and diverting it to the Plant for recycling or to the ETF;
		• sequestering any potential acid-generating Mine Rock within the interior of the CDF;
		• covering any areas in the core of the pile with overburden where potential acid-generating Mine Rock is to be sequestered to reduce any infiltration; and
		• directing runoff flow at closure and post-closure to the Open Pit.
7.5.2.2 – Secondary Pathways	7.8	To mitigate the possibility that water quality in the Flooded Open Pit and outflow affecting surface water quality in downstream surface waters, Fortune will treat water from the Flooded Open Pit using a Wetland Treatment System (if required) prior to discharge into Peanut Lake.
7.5.2.3 – Primary Pathways	7.9	Fortune will employ the following air emissions and dust deposition mitigation measures at the NICO Project to limit the effects to surface water:
		• water roads to suppress dust production;
		• use of upswept exhausts on construction equipment;
		• enforce speed limits to assist in reducing dust;
		• ensure equipment and fleet are equipped with industry-standard emission control systems;
		• enclose conveyance systems and processing facilities;
		• ensure processing equipment have high efficiency bag houses to reduce emissions of particulate matter;
		• develop operating procedures that reduce dust generation and air emissions (e.g. regular maintenance of equipment to meet emission standards);
		• limit the road footprint disturbance area while maintaining safe construction and operation practices.
7.5.2.3 – Primary Pathways	7.10	The discharge of effluent from the ETF can affect surface water quality in Peanut Lake and in downstream surface waters. The following mitigation steps will be undertaken:
		• treated water from the ETF will be pumped through a diffuser directly to Peanut Lake; or
		• if additional settling, polishing, or further treatment is required, then the treated water from the ETF will be discharged to the Contingency Pond.
7.5.2.3 – Primary Pathways	7.11	Long-term seepage from the CDF can affect surface water quality in downstream surface waters. The following mitigation steps will be undertaken:
		• the CDF will be capped during closure to isolate Mine Rock and tailings and minimize leaching.
		• any seepage from the CDF will be intercepted in passive Wetland Treatment Systems prior to discharge to Nico Lake.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
7.14 Monitoring and Follow-up	7.12	Upon approval of the NICO Project, an Aquatic Effects Monitoring Program (AEMP) will be implemented to limit effects to water quality and other aquatic components and to test impact predictions. The final AEMP will include provisions for environmental effects monitoring as required under the Metal Mining Effluent Regulations of the Fisheries Act. Specific objectives of the AEMP include the following:
		• provide information to test predicted impacts from the NICO Project DAR and reduce uncertainty;
		• incorporate local traditional and ecological knowledge, where applicable and available;
		• propose action levels or adaptive management triggers that can be used as early warning signs for reviewing and implementing mitigation practices and policies;
		• design studies and data collection protocols that are consistent with other programs in the region; and,
		• consider existing regional and collaborative programs, such as Cumulative Impact Monitoring Program.
8 – Key Line of Inquiry: Caribou and Caribou Habitat		
8.4.2 Results Table 8.4-1	8.1	To mitigate direct loss and fragmentation of caribou habitat the current layout of the mine footprint will limit the area that is disturbed and the NPAR will be as narrow as possible; and
	8.2	To reduce potential of the NICO Project footprint to cause changes to soils, vegetation and caribou habitat, culverts and other design features to reduce changes to local flows and drainage patterns and drainage area have been added.
8.4.2.1 - Pathways with No Linkage Changes to Habitat Quality, Movement, and Behaviour	8.3	See 7.7 for commitments related to vertical and lateral seepage which can affect surface water quality, soils, vegetation, caribou habitat and caribou mortality
	8.4	See 7.6 for commitments related to site water management which can affect surface water quality, soils, vegetation, caribou habitat and caribou mortality
8.4.2.1 - Pathways with No Linkage Changes to Habitat Quality, Movement, and Behaviour Changes to Survival and Reproduction	8.5	See 7.3 for commitments related to spills on the mine site or along the NPAR that can affect surface water quality, soils, vegetation, caribou habitat, and caribou mortality.
	8.6	See 7.9 for commitments related to air emissions and dust deposition that can cause changes to chemical properties of surface water, soils, vegetation, wetlands, and caribou habitat.
	8.7	To mitigate the possibility that water quality in the Flooded Open Pit and outflow affecting caribou health or long-term seepage from the CDF impacting groundwater and surface water quality, which can affect soils, vegetation and caribou habitat Fortune will:
		• treat water from the Flooded Open Pit using a wetland treatment (if required) system prior to discharge into Peanut Lake;
		• use wetland treatment systems prior to discharging water from the CDF into Peanut Lake; and
		• cap the CDF during closure to isolate tailings and mine rock and prevent leaching.
8.4.2.2 - Secondary Pathways Changes to Habitat Quality, Movement, and Behaviour	8.8	See 7.5 for commitments related to the process and potable water requirements for the NICO Project that may decrease drainage flows and surface water levels, and affect vegetation, wetlands, and caribou habitat.
8.4.2.2 - Secondary Pathways Changes to Survival and Reproduction	8.9	Physical hazards on the mine site and collisions with vehicles and aircraft will be mitigated using the following measures:
		• temporarily suspending surface blasting when caribou is spotted within the danger zone identified by the blast supervisor;
		• speed limits will be established;
		• the presence of caribou will be monitored and communicated to site personnel;
		• all employees will be provided with environmental awareness training; and
		• removal of physical hazards will be part of the decommission plan.
	8.10	Attraction to the NICO Project may increase predator numbers and predation risk, which can affect caribou populations. To mitigate this Fortune will:
		• base most of the construction of the NPAR out of the NICO site to reduce the number of camps along the route;
		• skirt all buildings and stairs to the ground to limit opportunities for use as shelter;
		• development and implement a Domestic and Industrial Waste Management Plan;
		• collect food wastes in suitable receptacles that limit attraction;
		• store recyclables and waste hazardous materials on-site in appropriate containers to prevent exposure until shipped off-site to an approved facility;
		• prohibit littering and feeding of wildlife;
		• education and reinforcement proper waste management practices with all workers and visitors to the site;
		• education on the risk associated with feeding wildlife and careless disposal of food garbage;
		• conduct ongoing reviews of the efficiency of the waste management program and improvement through adaptive management; and

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
		• develop and implement a Wildlife Effects Monitoring Program (WEMP) (see Section 8.10).
8.4.2.3 - Primary Pathways	8.11	Sensory disturbances can change the amount of different quality habitats and alter caribou movement and behaviour (distribution), or change energetic costs to caribou and wildlife from disturbance or displacement. Fortune's NICO Project design will:
		• use conventional insulation, baffles and noise suppressors on equipment;
		• temporarily suspended surface blasting if caribou are observed within the danger zone identified by the blast supervisor;
		• house stationary equipment inside buildings;
		• ensure regular maintenance of equipment to limit emissions; and
		• provide all employees with environmental awareness training.
	8.12	To mitigate the effect that improved access for harvesting can have on caribou population size Fortune will:
		• develop and enforce "no hunting, trapping, harvesting, or fishing policy"; and
		• prohibit the use of recreational all-terrain vehicles at site.
8.10 - Monitoring and Follow-up	8.13	Fortune's NICO Project WEMP specific objectives include the following:
		• provide a process for regulators and communities to participate in the development of caribou effects mitigation and monitoring;
		• consider and incorporate, where possible, traditional knowledge;
		• provide mine managers with clear reasons for making decisions regarding NICO Project environmental management;
		• provide the proposed environmental design features, and mitigation policies and practices;
		• assess the effectiveness of mitigation; and
		• verify the accuracy of impact predictions made in the DAR, reduce uncertainty of impact predictions, and identify unanticipated effects.
9 – Key Line of Inquiry: Closure and Reclamation		
9.4.1.1 - Progressive Closure and Reclamation and Goals	9.1	The NICO Project Closure and Reclamation (C&R) goals and principles include the following:
		• progressive reclamation will be undertaken whenever practical;
		• landforms will be geotechnically stable;
		• drainage systems will be designed to minimize erosion rates and substance loadings;
		• reclaimed areas will eventually develop into self-sustaining ecosystems with an acceptable degree of biodiversity;
		• on-site public health and safety will be protected; and
		• natural colonization and recruitment of native vegetation will be encouraged in ecologically receptive areas.
9.4.1.1 - Progressive Closure and Reclamation and Goals	9.2	Fortune's corporate policies relevant to the ongoing closure process include the following:
		• final land use objectives will be developed in consultation with stakeholders;
		• there will be an ongoing consultation process with regulators and local stakeholders; and
		• adaptive management of the C&R Plan will be pursued through the incorporation of results from Fortune's site specific studies and any available regional research.
9.4.1.1 - Progressive Closure and Reclamation and Goals	9.3	Fortune's basic end land use goals for the NICO Project include the following:
		• reclaim the landscape to optimize the value of watershed, wildlife habitat, fish habitat, or other resources and taking into account stakeholder preference;
		• protect the aesthetic qualities of the landscape; and
		• provide for traditional land uses (e.g. hunting and trapping) as preferred by key stakeholders.
	9.4	Areas where Fortune's progressive reclamation and closure is planned for the NICO Project include the following:
		• the cover on the sideslopes of the CDF (i.e., the CDF Perimeter Dyke) will be placed and re-vegetated progressively throughout the operational life of the NICO Project;
		• once underground mining is completed, the mobile equipment will be removed, decommissioned and shipped off-site;
		• the underground mine workings will be backfilled in strategic locations; and
		• Wetland Treatment Systems No.1, 2, and 3 will be constructed and tested during the operational life of the NICO Project to confirm they are fully operational when closure occurs.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
9.4.4.2 - Design Objectives	9.5	Short-term C&R objectives for Fortune's NICO Project include the following:
		• progressively reclaim disturbed areas during operations as soon as they are no longer required;
		• establish physical and chemical stability at the site, consistent with conditions existing prior to the start of operations;
		• minimize the risk of erosion and sediment loss as a result of on-site runoff;
		• stabilize slopes on all structures to maintain sage working conditions and facilitate reclamation activities;
		• cover ground to prevent soil drifting and dust production; and
		• maintain an environmentally safe site.
	9.6	Long-term C&R objectives for Fortune's NICO Project include the following:
		• return the site to a state similar to other habitats in the same region that are not affected by the NICO Project which should facilitate similar wildlife use to baseline conditions; and
		• create, to the extent practicable, an aesthetically pleasing final landscape.
9.4.4.3 - Role of Climate Change in Development of Closure and Reclamation Plan	9.7	Fortune's general mitigation measures to reduce the potential for permafrost degradation and subsequent subsidence of areas around the NICO Project mine site include the following:
		• during winter months, clear areas for construction using a snow packed surface;
		• re-vegetate disturbed areas as soon as possible;
		• manage drainage around infrastructure to reduce pooling of water at the surface;
		• insulate thaw-sensitive slopes;
		• limit the mine footprint disturbance area;
		• limit the road footprint disturbance area, while maintaining safe construction and operation practices;
		• use coarser materials for road construction to minimize frost effects;
		• building foundations will be built on bedrock not susceptible to frost heave to minimize thawing of permafrost in sensitive areas; and
		• stripping of organic horizons containing ice-rich permafrost will be limited to areas where it is absolutely necessary to reduce the potential for an increase in thaw depth and related thaw subsidence.
9.4.4.4 - Wildlife Considerations	9.8	Environmental design features and mitigation that will be implemented by Fortune at the NICO Project to limit wildlife injury and mortality include the following:
		• blasting will be temporarily suspended when wildlife (ungulates and carnivores) are spotted within the "safe zone";
		• the CDF will be regularly monitored for wildlife activity and wildlife hazards;
		• reflectors or other deterrents will be installed to discourage wildlife from crossing the roads;
		• ditches will be contoured at closure as appropriate to remove any hazards to wildlife;
		• wildlife deterrent actions will be implemented by knowledgeable and trained personnel; and
		• at closure, borrow pits, the Plant area, stockpile areas, etc. will be re-contoured to reduce hazards to wildlife.
9.4.4.5 - Key Closure and Reclamation Activities 9.4.4.5.6 - Erosion Control	9.9	Specific erosion control practices available for the general NICO Project area include the following:
		• minimize soil exposure and control surface runoff, especially during wet weather and in areas close to watercourses;
		• construct temporary cross ditches to redirect surface runoff;
		• construct temporary berms of imported logs, construction timers, sandbags, or other material as appropriate and available;
		• construct roads so natural drainage patterns are not impeded and in a manner that runoff to road ditches enters natural drainage systems or contoured containment areas;
		• use temporary erosion control measures such as mulches, mats, and netting, to control erosion prior to establishment of a protective vegetation cover;
		• apply tackifiers, where necessary, to stabilize soils and use hydroseeders for seeding on steep slopes; and
		• promptly seed exposed areas and topsoil stockpiles with a self-sustaining, erosion controlling seed mix appropriate to the region.
9.6.2.4 - Terrestrial Monitoring Wildlife (Appendix 18.II)	9.10	See 8.13 for commitments relevant to the specific objectives of the WEMP.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
10 – Subject of Note: Air Quality		
10.3.2.1 - Good Practices to Mitigate and Reduce Emissions	10.1	Fortune is committed to the following general management approaches for air emissions from the NICO Project:
		• mine equipment and haul vehicles will be regularly maintained to reduce emissions and maximize fuel efficiency;
		• low sulphur (15 parts per million by weight) diesel will be used in fleet vehicles;
		• site road surfaces will be regularly maintained for operational efficiencies and to minimize fuel consumption; and
		• NICO Project waste will be screened. Material containing metal and chlorinated organic waste will be segregated and shipped off-site. The remainder will be combusted in an approved incinerator. The waster incinerator will be engineered and operated to meet the Canadian Council of Ministers of the Environment emission standards for dioxins and furans.
	10.2	Fortune will minimize nitrogen oxide emissions through the following measures:
		• using corporate fleet vehicles that meet applicable emission standards at the time of purchase and encouraging contractors to do the same with their vehicles;
		• considering nitrogen oxide emissions as a criterion in future engine and boiler upgrades;
		• consider energy conservation initiatives such as maintaining site road surfaces to improve the energy efficiency of the fleet; and
		• consider the use of catalytic converters to reduce nitrogen oxide emissions from the mobile fleet.
	10.3	See 7.9 for commitments for transport-related dust and particulate emissions
10.9.1 - Monitoring Program and Mitigation and Adaptive Strategies	10.4	The following monitoring programs and mitigation and adaptive management strategies will employed by Fortune at the NICO Project:
		• regulatory review that identifies legislation, regulatory, and policy requirements considered in the program;
		• scope that provides a description of the scope of the program;
		• goals that outline all of the goals of the program;
		• air quality monitoring program (Section 10.9.1.1);
		• emissions monitoring program (Section 10.9.1.2);
		• mitigative and adaptive strategies (Section 10.9.1.3);
		• response planning describing strategies for responding to events of significant emission rates or air quality impacts; and
		• annual report describing procedures for the preparation of annual reports and their ancillary components (e.g. references, glossary, concordance tables).
11 – Subject of Note: Water Quality		
11.5 - Monitoring and Follow-up	11.1	Fortune will conduct hydrological monitoring at the NICO Project as part of AEMP.
12 – Subject of Note: Fish and Aquatic Habitat		
Table 12.3-1 Potential Pathways for Effects to the Persistence of Fish and Condition of Aquatic Habitat	12.1	Environmental design features and mitigation will be incorporated by Fortune into the design of the NICO Project to mitigate a potential impact or limit changes to fish and aquatic habitat during construction includes:
		• construction runoff will be captured and discharged into a polishing pond to settle out suspended sediments prior to release to Peanut Lake;
		• a single clear-span bridge will be installed at the Marian River crossing to mitigate impact to fish habitat;
		• appropriately sized fish screens which meet DFO guidelines will be fitted to Lou Lake intake line to limit fish access and to protect fish from entrainment and impingement;
		• See 7.3 for commitments related to spills on the mine site or along the NPAR hazardous materials
		• changes to local surface waters and drainage patterns will be minimized through use of constructed ponds;
		• See 8.2
		• rip-rap and aggregate placed on top of the intake structure will create higher quality habitat than what is affected;
		• if required, fish habitat compensation will be developed in consultation with DFO and other regulatory agencies;
		• See 7.7. for commitments related to the CDF and vertical and lateral seepage
		• See 7.5 for commitments related to the process and potable water requirements for the NICO
		• See 7.1 for sediment and erosion control measures
		• if water quality in the discharge from the open pit does not meet water quality standards at the time of discharge, then discharge water will be treated using an active (water treatment plant) or passive (wetland treatment system) prior to discharge into Peanut Lake;

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
		• See 9.1 for C and R commitments
		• See 7.12 for commitments related to long-term seepage of the CDF
		• See 8.7 for mitigation related to the Flooded open pit;
12.3.2.2 - Primary Pathways Mine Infrastructure and Access Road Footprint Mine General Operation		• See 8.1
		• see 7.9 for commitments regarding air emissions and dust mitigation
		• See 7.6 for commitments related to site water management
		• site staff will not be permitted to fish; and
		• the use of recreational all terrain vehicles will be prohibited at site;
12.10 - Monitoring and Follow-up	12.2	See 7.12 for commitments related to the AEMP
13 – Subject of Note: Terrain and Soils		
13.3.2.1 - Pathways with No Linkage Mine Infrastructure Footprint and NICO Project Access Road Footprint	13.1	See 7.7. for commitments related to the CDF and vertical and lateral seepage
		See 7.6 for commitments related to site water management which can affect surface water quality and soil quality
13.3.2.1 - Pathways with No Linkage Mine Infrastructure Footprint and NICO Project Access Road Footprint	13.2	See 7.3 for commitments related to spills on the mine site or along the NPAR hazardous materials
	13.3	See 7.11 for commitments related to the t water quality in the Flooded Open Pit and outflow that may affect soil or long-term seepage from the CDF
13.3.2.2-Secondary Pathway Permafrost Melting and Subsequent Subsidence Effects	13.4	See 9.7 for Fortune's general mitigation measures to reduce the potential for permafrost degradation and subsequent subsidence to terrain and soil
Flows and Drainage	13.5	See 8.2
Air Emissions and Dust Deposition	13.6	See 7.9 for commitments related to air emissions and dust deposition that can cause changes to chemical properties of soils
13.4.1 - Effects to Terrain Units, Soil Quality and Distribution	13.7	Environmental design features and mitigation incorporated by Fortune into the design of the NICO Project to mitigate changes to terrain and soils include:
		• See 8.1
		• erosion control practices will limit wind and water erosion on soil and overburden stockpiles (e.g. vegetation, erosion mats);
Physical loss or alteration of local soils from the NICO Project footprint		• admixing of topsoil with subsoil during salvage and reclamation will be limited;
		• topsoil horizons may be stripped from the mine area and then stored in stockpiles along the perimeter of the site for eventual replacement upon decommissioning and closure of the NICO Project;
		• organic and/or topsoil horizons will not be stripped in areas containing ice-rich permafrost to reduce potential for an increase in thaw depth and related thaw subsidence; and
		• the underground mine will be backfilled in strategic locations.
Residual ground disturbance from permanent NICO Project components.	13.8	Environmental design features and mitigation incorporated by Fortune into the design of the NICO Project to mitigate changes to terrain and soils include:
		• See 8.1
		• soil salvage and reclamation;
		• continue to refine a C&R Plan;
		• See 8.7

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
14 – Subject of Note: Vegetation		
14.3.2 - Results Mine Infrastructure Footprint and NICO Project Access Road Footprint	14.1	Environmental design features and mitigation incorporated by Fortune into the design of the NICO Project to mitigate a potential impact or limit the effects to vegetation are listed in Table 14.3-1. These include commitments from the following commitment #:
		• See 8.1
		• See 8.2
		• See 7.6
14.3.2.1 - Pathways with No Linkage Co-Disposal Facility	14.2	See 7.7. for commitments related to the CDF and vertical and lateral seepage
Spills and Hazardous Materials	14.3	See 7.3 for commitments related to spills on the mine site or along the NPAR hazardous materials
Outflow from Flooded Open Pit or Seepage	14.4	See 7.11 for commitments related to the t water quality in the Flooded Open Pit and outflow that may affect soil or long-term seepage from the CDF.
14.3.2.1. - Secondary Pathways Permafrost Melting and Subsequent Subsidence Effects	14.5	See 9.7 for Fortune's general mitigation measures to reduce the potential for permafrost degradation and subsequent subsidence effects to vegetation:
Air Emissions and Dust Deposition	14.6	See 7.9 for commitments related to air emissions and dust deposition to limit the effects to vegetation:
Introduction of Non-Native Species	14.7	Fortune will employ the following measures to limit the introduction of non-native plant species at the NICO Project:
		• regular cleaning of construction equipment/vehicles; and
		• develop and implement an invasive plant management strategy.
14.3 - Pathway Analysis 14.3.2 - Results Process and Potable Water Requirements	14.8	To mitigate the possibility of process and potable water affecting vegetation on the NICO Project site the following will be done:
		• capture and reuse site water to reduce fresh water requirements;
		• recycle water from tailings thickener and from the Open Pit for grinding operations; and
		• recycle excess water from the SCPs and treat prior to entering the receiving environment.
14.3.2.3 - Primary Pathways	14.9	The following mitigation steps will be undertaken to prevent/limit the residual ground disturbance effect on vegetation at the NICO Project site and along the Access Road:
		• See 8.1
		• salvage and store growth media for re-vegetation;
		• See 13.8; and
		• develop a re-vegetation Plan.
14.10 - Monitoring and Follow-up	14.10	Environmental monitoring will include the implementation of a Vegetation Management Plan designed to work in conjunction with other programs (e.g., soils, closure and reclamation, and Biophysical Management and Monitoring Plans). The monitoring activities would include the monitoring of re-vegetation following reclamation and weed surveys. More information on the Vegetation Management Plan can be found in Section 18.
15 – Subject of Note: Wildlife		
15.3.2.1 - Pathways with No Linkage Changes to Habitat Quality, Movement and Behaviour	15.1	For the NICO Project site and along the NPAR, all vegetation clearing would take place outside of the migratory bird season where possible. In the event that construction activities must be completed during the migratory bird breeding season, then the vegetation and Growth Media will be removed prior to the nesting season.
15.3.2.2- Secondary Pathways Changes to Survival and Reproduction	15.2	See 8.9 for commitments that relate to mitigation that will be implement to decrease risk to animals from physical hazards

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
Section 15.10 - Monitoring and Follow-up	15.3	See 8.13 for commitments relevant to the specific objectives of the WEMP.
16 – Subject of Note: Human Environment		
16.2.4.2.1 - Employment	16.1	Hiring preferences will be given to Wek'èezhìi Settlement Area residents, Aboriginal peoples, and other Northerners. Priority will be given to the residents of Tłı̨chǫ communities.
	16.2	A Tłı̨chǫ human resources professional will be hired to lead the recruitment process to facilitate the ability to recruit people from the area. All job postings will be given to the Tłı̨chǫ community employment coordinators to give them first opportunity to source an appropriate candidate from their communities.
16.2.4.2.1 - Employment: Employability	16.3	The NICO Project will mainly require workers with prerequisite skills to do the job rather than using trainees. Fortune is committed to finding ways to attract and retain local study area community members to work at the NICO Project, particular Tłı̨chǫ residents. As community interests and basic skills are well suited to the majority of skilled and semi-skilled positions required during mine construction, Fortune will focus its pre-employment training around developing skills in those areas.
16.2.4.2.3 - Mitigation Measures for Employment and Contracting	16.4	Fortune has developed several plans, strategies, and commitments for the NICO Project to maximizing direct employment, contracting, advancement, and retention of Wek'èezhìi Settlement Area residents and other Aboriginal and northern people. General mitigation measures are, as follows:
		• Fortune will be flexible with the entry requirements, where possible, and make every effort to support employees or community residents to upgrade their skills.
		• Rosters may vary, influenced by the nature of the work, the level of responsibility, and the place of residence of the employee. A flexible shift roster, as well as the relatively close proximity of the mine, may be attractive to Tłı̨chǫ residents and potential new entrants to the labour market.
		Employees will be provided with free scheduled round-trip, work-related transportation from the following local study area communities: Yellowknife, Behchokǫ̀, Wekweètì, Whatì, and Gamètì. The daily bus service (including weekends) will be scheduled for employees. Care and maintenance workers will be based out of Whatì and will be brought by bus to and from Whatì daily on 10-hour shifts. Workers from Wekweètì would be transported to and from site via small aircraft.
		• Equivalent skills and qualifications will be considered when recruiting and hiring. As long as safety can be maintained, and in accordance with specific position requirements, Fortune will try to hire workers at all levels of proficiency, including pre-literate workers. Fortune will attempt to overcome these challenges by incorporating essential skills into safety training, technical training, and production planning.
		• Fortune will provide and encourage opportunities for apprenticeships where there are sufficient available journeymen and eligible apprentices.
		• Fortune will seek opportunities to encourage and support Aboriginal workers who would like to pursue supervisory or management roles.
		• Fortune will develop a strategy directed at women to create more opportunities or remove barriers to women working at the site.
		• Fortune will communicate clearly their Criminal Record Check policy so that no one is unjustly denied a job due to a criminal record.
		• Fortune will encourage employees and contractors affected by substance abuse to seek assistance with the assurance of their support and confidentially through that process.
		• Fortune will make information available to local study area schools and other community organizations so that female youth, in particular, become more knowledgeable about the various types of available jobs and the required education and training to fill these positions.
		• Fortune will provide summer employment for students on the NICO Project, giving priority to those from the Tłı̨chǫ communities.
		• All contractors and employees will be expected to participate in a Cultural Awareness Training Workshop.
		• An Employee and Family Assistance Program will be offered to support all employees when working at the mine site. Fortune will liaise with the communities to support the issues with shift rotations and the difficulties of home life. If an employee terminates their employment due to family or personal issues, then every reasonable opportunity will be given to re-hire the employee after a reasonable period. Consideration will be given to work with the provider to make available more Aboriginal speaking counselors for employees and their families.
		• Fortune will monitor the effectiveness of its local hiring and contract policies and programs.
16.2.4.2.4 - Employment Polices for Aboriginal and Other Northern Women	16.5	In consultation with the Tłı̨chǫ people, Fortune will develop specific strategies for the employment of Aboriginal and other northern women at the NICO Project site. These strategies include an on-the-job training program during the construction phase, student achievement awards, work term placement opportunities, and summer employment with priority for students from the Tłı̨chǫ communities. Where possible, work rosters will be made flexible to provide opportunities to women who have not previously been able to seek employment outside of the community.
		Security: It is imperative that all women feel safe and secure at the worksite. Trained security staff will be on-site overseeing any concerns. The enforcement of a zero tolerance policy for drugs and alcohol will contribute to a respectful and comfortable workplace. Arrangements will be in place for separate women's quarters to give women a more secure environment. Supervisory staff will be trained to be sensitive and communicative with women to maintain a respectful workplace. A buddy system will be in place for women who use the outdoor recreational trails.
		• In addition, access on-site by non-employees will be restricted. Most transportation to the site will be by company-operated vehicles. No other mines or industry are currently on, or expected to be on, the NPAR. Site access will be controlled by security professionals.
		Safety: Work safety will be paramount on-site with qualified safety professionals providing direction and oversight. Safety will be the responsibility of all employees, contractors, and visitors. Training will be provided for all employees before commencing work to provide a safe work environment. Thus, training will be appropriate to each position.
		Anti-harassment: Anti-harassment policy and procedures are currently in place. These will be communicated to all employees and contractors and strictly enforced. Communications links will be implemented for workers to report any incidents of harassment without reprisal. Fortune will implement a process for reporting any cases of harassment and how to manage and resolve the situation.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
16.2.4.2.5 - Training Commitments	16.6	Fortune is committed to designing plans, strategies, and other commitments meant to increase the mine-ready workforce, support career paths in mining, and offer training programs. Fortune is currently making plans and preparations to begin pre-employment training. The following mitigation steps for training will be implemented:
		• Fortune will partner with the Mine Training Society, which has likewise teamed up with Aurora College, to consider the Underground Miner Training Program. Recruitment of an Aboriginal workforce may be accomplished through a dedicated underground/open pit training program. Fortune also expects to develop an apprenticeship program where there are sufficient available journeyman and eligible apprentices.
		• Fortune will support potential employees from the Tłı̨chǫ communities to attend Class 1 Driver Training in Fort Smith. Training will be focused on specific job skill development.
		• Fortune will offer workplace orientation sessions in the community for new workforce entrants. Mine orientation will also include money management and adapting to mine lifestyle and work habits.
		• Several people in the communities have had heavy equipment experience or training, although not necessarily with mining. If hired, they will be provided with site-specific on-the-job training. Community meetings will be held about training and job opportunities with the NICO Project. Community leaders will be consulted on recruitment and education support decisions. The company will increase community visits, on-site information presentations, and tours as the NICO Project is approved, as well as before and during construction.
		• An Impact Benefit Agreement (IBA) that is satisfactory to all parties is being considered with the Tłı̨chǫ communities. This agreement may include measures to protect social and cultural values as well as addressing training, employment, and business opportunities.
		• A Tłı̨chǫ human resources professional will be hired to lead Fortune's recruitment program. Opportunities will be sought for new work entrants to be further developed for more advanced or diverse roles through on-the-job training and support for educational upgrading.
16.2.4.2.6 - Employment: Drugs and Alcohol	16.7	Fortune's strategies to maximize employment of Aboriginals and northern residents through its contractors include:
		• Preference will be given to Tłı̨chǫ businesses that have the capacity to perform the work, followed by Aboriginal, northern, and other companies, in this order of priority. Fortune's procurement practices will particularly benefit Tłı̨chǫ businesses, with human resource and labour force development activities directed to Tłı̨chǫ communities and people. This support will result in stronger communities and individuals with increased entrepreneurial, business, and technical skills.
		• Fortune will expect its contractor companies to have and implement Aboriginal hiring policies and procedures similar to its own. Every effort will be made with all contractors to maximize hiring from the Tłı̨chǫ communities, Aboriginal people, and across the regional study area. To the extent possible contractors will be expected to draw their labour from qualified local sources, support training and recruitment initiatives at the pre-employment phase, provide employee development, and focus on employee retention, particularly of Aboriginal people.
		• Orientation meetings will be held with contractors to make sure that they understand Fortune's policies, procedures, and commitments. All contractor personnel will complete the orientation process on-site. Penalties will be built into the contracts to improve compliance.
16.2.6.2.1 - Public Infrastructure and Services	16.8	During construction, equipment and supply will be hauled to the NICO Project site locally using a combination of the proposed NPAR, the existing Whatì and Gamètì winter roads, the Proposed Tłı̨chǫ Road Route, and regionally using the NWT highway system. Fortune will be paying royalties and taxes to all levels of government that will be allocated as appropriate, including most likely for road infrastructure.
16.2.6.2.2 - Labour Shortages for Local Services	16.9	Fortune has proposed the following environmental design features for the NICO Project that relate to demands on infrastructure, including any effect on social services from in-migration.
		• Fortune will offer pick-up points throughout the local study area communities.
		• The mine camp will include the necessary facilities to sustain the workforce at the site, including having medical personnel accessible on a continuous basis, reducing demand on transport of material and people.
		• Fortune will offer a volunteer incentive that employees can apply for; it will be provided to those employees interested in volunteering their time for social or cultural programs or activities in their home communities.
16.2.7.2.2 - Education Completion Rates	16.10	Fortune's aim is to fill as many of the skilled positions and semi-skilled positions as possible with Aboriginal and northern workers during the NICO Project. Unskilled workers will receive on-the-job training to bring them up to an acceptable productivity level. As vacancies in skilled and semi-skilled positions occur, concerted efforts will be made to fill these positions with northern Aboriginal workers. Fortune will consider the experiences of individuals not meeting minimum education requirements for entry level positions on a case-by-case basis.
	16.11	Education completion rates are expected to be positively affected by the NICO Project with the following mitigation steps:
		• Employees will be brought in at a level so that the person is able to do the work and remain safe. Fortune will be flexible with its minimum literacy requirement for employment for residents of the Wek'èezhìi Settlement Area and as long as safety can be maintained, workers will be accepted at all levels of proficiency, including pre-literate workers. Fortune will attempt to overcome these challenges by incorporating essential skills into safety training, technical training, and production planning.
		• Opportunities will be sought for new work entrants to be further developed for more advanced or diverse roles through on-the-job training and support for educational upgrading. On-the-job training will be provided in as many situations as possible to provide opportunities for Tłı̨chǫ residents.
		• Fortune will try to carry out relevant training programs that are offered in cooperation with other agencies in the Territory, such as the Mine Training Society and Aurora College. Discussions have begun with the Mine Training Society to seek training opportunities, although issues about academic preparedness still need to be addressed.
		• Fortune will work diligently to engage with youth, particularly those who are Tłı̨chǫ. Fortune plans to attend career fairs, participate in classrooms, and develop relationships with schools. Summer employment will be offered to young people as well as work terms, and apprenticeship and training opportunities.
		• Fortune will contribute to student achievement awards.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
16.2.7.2.3 - Alcohol and Drug Access and Use	16.11	Fortune is committed to maintaining a drug-free workplace and promoting high standards of health and safety, and recognizes alcohol or drug dependency as a treatable condition. Several mitigation and benefit enhancement strategies will be implemented to reduce potential negative effects of substance abuse, as follows:
		• Fortune will provide workshops on money management, alcohol and substance abuse, family adaptation, and coping mechanisms.
		• Employees who suspect they have an alcohol or drug dependency will be encouraged to seek advice and to follow appropriate treatment promptly before it results in job performance problems. Medical staff will advise and assist in securing treatment.
		• Fortune will conduct "for cause" testing; circumstances might include such things as reasonable suspicion that an employee may be in violation of the policy, reports from any witnesses, bizarre, unsafe, or threatening behaviour on the employee's part, or involvement in a work-related accident.
		• No employee with alcohol or drug dependency will be terminated due to the request for help in overcoming that dependency or because of involvement in a rehabilitation; however, an employee who has had or is found to have a substance abuse problem will not be permitted to work in designated positions identified as being critical to the safety and wellbeing of employees, the public, or Fortune.
		• Even with these mitigation measures, some substance abuse can be expected to occur, particularly when an employee or contractor is off-site. This situation is not the responsibility of Fortune or within its power to prevent. As such, Fortune will work with local study area communities to develop and implement strategies to limit negative health outcomes such as increased alcohol and drug consumption.
16.2.7.2.5 - Crime Rates	16.12	Fortune will continue to engage with the communities and their leadership throughout the operational life of mine. Sponsorship of community events and promotion of activities will improve life for community members. Fortune believes that its role in helping to bring greater health and vibrancy to the local study area is their best approach to mitigating negative social outcomes, which includes the rate and severity of crime.
16.2.7.2.6 - Access to Childcare	16.13	Fortune will implement the following mitigation and benefit enhancement strategies to reduce potential negative effects of limited access to childcare and to maximize women's participation in the NICO Project:
		• The potential for shorter shift rotations due to the proximity of the site to some local study area communities may offer more opportunities for women with young children to enter the workforce.
		• Potential exists for secondary employment that may be generated in the communities themselves as a result of the NICO Project; this possibility may add flexibility for women to enter the workforce.
		• Fortune will develop a strategy directed at women to create more opportunities or remove barriers to women working at the site.
16.2.7.2.7 - Language Retention and Other Key Indicators of Cultural Maintenance	16.14	Mitigation measures by Fortune for language retention and other key indicators of cultural maintenance include the following:
		• Fortune will make every effort to support the culture and language on the worksite, including offering cultural sensitivity workshops, which will be done in collaboration with the Tłı̨chǫ.
		• Any Tłı̨chǫ employee who does not have knowledge of the English language, either written or verbal, will be given reasonable opportunities, where the lack of language does not compromise the safety of the individual or of others or work performance.
		• Tłı̨chǫ speaking counselors will be hired for employees and their families, and translation of policies and important documents to Tłı̨chǫ language will be done, where feasible.
		• Through policy development and practices, Fortune will also be sensitive to the culturally-extended family kinship ties; in other words, absence from the site for cultural or family needs will be considered on a case by case basis.
16.2.7.2.8 - Community Cohesiveness and Pride in Cultural Identity	16.15	Fortune requires that all employees take cultural awareness and cross-cultural training. Fortune will take the following specific mitigation steps to reduce negative effects related to cultural interactions and to enhance links to community to the extent possible:
		• through its employee benefits package, offer counseling and mentoring to employees who pursue it;
		• allow employees to continue speaking their traditional language on-site if it does not pose a health or safety issue;
		• provide quality accommodations for permanent employees on-site with two people per room during construction and single individual rooms after the construction phase;
		• provide quality food services with nutritional food, with options that will include country food (when available);
		• provide communication links for employees to maintain relationships with their families while at site, such as telephone and internet; there will also be cell phone satellite coverage;
		• provide indoor and outdoor recreation and leisure options on-site for a relaxing and healthy lifestyle while away from home;
		• provide a family and employee assistance program should they encounter stress associated with their work or other family concerns, including relationships, family, youth, and elder care;
		• hold annual open house days; community members and employee families will be invited to visit the site and see where people work;
		• provide workshops on money management, alcohol and substance abuse, and family adaptation and coping mechanisms;
		• provide cultural sensitivity training to all employees to reduce work-related stress in a cross-cultural work environment; and
		• offer a volunteer incentive, which employees can apply for; these will be provided to those employees interested in volunteering their time for social or cultural programs or activities in their home communities.
16.2.8 - Effects to Public Safety	16.16	Fortune will consider several mitigation measures to reduce the risk of accidents and improve public safety, including the following:
		• offering driver training for truck drivers;
		• making road improvements (if determined to be necessary) on the NPAR;

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
		• applying and monitoring strict controls on speed limits;
		• advising communities about approximate time trucks will be passing;
		• minimizing commuter traffic, especially at night;
		• implementing contingency and emergency response procedures, including for spill clean-up and medical emergencies, to reduce the consequences of an accident;
		• using only transportation contractors with proven safety records; and
		• mitigation measures applied for the local roads will also be applied to the regional highways.
16.2.9 - Economic Effects from Closure	16.17	Fortune's mitigation strategy is a plan designed to help potentially-affected communities adjust to economic fluctuations, including unforeseen early closure or project hiatus, and to assist the post-closure transition for mine employees, Fortune commits to the following measures:
		• design and implement a targeted communications strategy, including a Media Management program, for an effective, ongoing community consultation and engagement process;
		• regularly meet with different business, educational, civil, and local government organizations to begin and/or maintain 2-way communication, including providing information on and discussing the NICO Project operations, lifecycle, and closure plans;
		• hold company-community meetings with all 3 levels of government (community, territorial, federal), and build consensus through meaningful discussions that foster trust and collaboration;
		• support sustainable communities to the extent possible by investing in communities and employees;
		• improve employee and business capacity building through continued training and transferable skills development;
		• develop a Human Resources Closure Plan and a Sustainable Development Strategy;
		• form a mine closure committee during operations. The committee will consist of staff and employees, with responsibilities that include how to best support employees with mine downsizing and eventual closure. This committee will also deal with any issues related to unforeseen early closure or project hiatus;
		• establish a transition centre with the following tasks and objectives:
		• maintain a database of all employees and their respective skills and training;
		• provide access to government programs for further training or for Employment Insurance;
		• arrange financial planning and employment information sessions for all employees;
		• help with resume writing, job searching, and job interviewing skills;
		• contact other mining companies to recommend employees and contractors to other projects; and
		• involve all potentially-affected communities in the process.
16.2.12 - Uncertainty	16.18	Fortune will liaise with relevant federal, territorial, and Tłı̨chǫ Government agencies, and relevant transportation, health, social, education, and other relevant regional agencies in the planning process and during construction and operations.
16.2 - Socio-Economic Impacts 16.2.13 - Ongoing Engagement and Follow-up	16.19	Fortune will work to support sustainable communities as much as possible. Capacity building, training, and development will be designed for mobility. Employability will be a key element of the opportunities that are offered to employees or prospective employees.
	16.20	As part of the closure planning, a closure committee will be formed in adequate time prior to closure to plan for some of the issues that employees would be facing because of the closure. The committee will consist, in part, of employees. Some of their key responsibilities will be to consider how to best support employees with the downsizing. A Transition Centre will be set up (specific location subject to negotiations with the Tłı̨chǫ) to include the following:
		• create a database of all employees and their skills and training;
		• practice interview skills;
		• provide access to government programs for further training or for Employment Insurance;
		• help transition employees to other mining projects;
		• arrange financial planning and employment information sessions for all employees; and
		• help with resume writing, job searching, and job interviewing skills.
	16.21	All Wek'èezhìi Settlement Area communities will be involved in the process with meetings involving the communities and all 3 levels of government, and there will be a building of consensus through meaningful discussions that foster trust and collaboration.
16.2.13.1.1 - Income and Money Management	16.22	Fortune will assist every new employee in opening a bank account if they do not already have one.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
16.2.13.1.2 - Stress Management and Support Programs	16.23	Consideration will be given to work with the provider to make available more Aboriginal speaking counselors for employees and their families. Fortune will try to re-hire the employee after a reasonable period. The NICO Project will also be providing transportation by road for the employees in the communities that are accessible by road (i.e., Whatì and Behchokǫ̀ early in the NICO Project and likely Gamètì later on as the road goes through to the community).
	16.24	Other specific mitigation steps will be taken to reduce negative effects associated with long-distance commuting and stress management, and to support community and family relationships, including the following:
		• Provide quality accommodations for permanent employees on-site with 2 people per room during construction and single individual rooms after the construction phase.
		• Fortune will provide quality food services with nutritional food in consultation with the employees.
		• Fortune will provide communication links for employees to maintain relationships with their families while at site, such as the internet (e.g., Skype, e-mail). There will also be cell phone satellite coverage. Computers will be available for ongoing learning and training through computer based programs.
		• Fortune will provide indoor and outdoor recreation and leisure options on-site for a relaxing and healthy lifestyle while away from home. A Recreation coordinator will be responsible for scheduling a varied daily program that will appeal to those looking to exercise before or after their shift. A gymnasium will be part of the living complex to provide workers with opportunities for exercise.
		• A living complex will be available, and decorated with traditional art from the Tłı̨chǫ communities. A library will be part of the living complex with reading materials and movies, some of which will be based on the Tłı̨chǫ culture.
		• Fortune will hold annual open house days to invite community members and employee families to visit the site and see where people work.
		• Fortune will provide workshops on money management, alcohol and substance abuse, and family adaptation and coping mechanisms.
		• Fortune will provide cultural sensitivity training to all employees so as to reduce work-related stress in a cross-cultural work environment.
16.2.13.1 - Human Environment Monitoring and Management Plans	16.25	Fortune is committed to maintaining a drug-free workplace and promoting high standards of health and safety. It will be a violation for any employee to use, possess, distribute, manufacture, sell, trade, or otherwise engage in the illegal use and/or consumption of prohibited and mood altering substances (including, but not limited to, alcohol, marijuana, and other illegal substances) at or in the workplace. Fortune will conduct "for cause" testing.
16.2.13.1.3 - Substance Abuse and Treatment Policies	16.26	Fortune recognizes alcohol or drug dependency as a treatable condition. Employees who suspect they have an alcohol or drug dependency will be encouraged to seek advice and to follow appropriate treatment promptly before resulting in job performance problems. The NICO Project medical staff will advise and assist in securing treatment. No employee with alcohol or drug dependency will be terminated if they request help in overcoming that dependency or because of involvement in a rehabilitation effort. An employee who has had or is found to have a substance abuse problem, however, will not be permitted to work in designated positions identified by management as being critical to the safety and wellbeing of employees, the public, or Fortune.
16.2.13.1.4 - Cross-Cultural Training	16.27	Fortune will employ the services of elders from the Tłı̨chǫ communities for this purpose as well as Aboriginal companies. Training opportunities that are being reviewed currently include the following:
		• community education;
		• community wellness events;
		• cross-cultural strategic planning and training;
		• front-line skill development;
		• peer support and counseling;
		• professional development;
		• team building and facilitating community partnerships; and
		• workplace wellness training.
16.2.13.1.5 - Employment and Training	16.28	Fortune will implement human resources information systems to effectively capture any changes to recruitment, vacancies, training received, shifts and rosters, and any information related to employees. While information about any individual will be confidential, cumulative summaries will be developed monthly and reported on a regular basis.
		• All employees will be asked, at hiring time, to self-disclose information on their ethnicity, place of residence and Aboriginal status to determine the total number of workers and the numbers and percentages of those from the Tłı̨chǫ communities and other Aboriginal or northern resident workers. During construction these will be monitored on a "number of days worked" basis. Training hours will be tracked and reported by categories such as on-the-job training, external training, and apprenticeships.
		• In addition, an IBA to be negotiated with the Tłı̨chǫ will be a comprehensive tool to include hiring and training of Aboriginal people.
16.2.13.1.6 - Local Businesses	16.29	All business providing goods and services to the NICO Project will be tracked including types of business participating in construction and the value of the business. Semi-annually, this information will be reviewed and gaps identified to maximize Aboriginal business participation.
		Issues and concerns associated with the socio-economic environment will be addressed through plans that support the Environmental Health and Safety management system, such as the community relations plan. Potential adverse effects will be monitored such as new business opportunities that, while positive for contractors and their employees, may generate a shortage of local skilled workers in the community.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
		In addition, an IBA to be negotiated with the Tłı̨chǫ will be a comprehensive tool that will address the benefits for local and regional businesses. Implementation and monitoring of the IBA will assist organizations and businesses servicing the region, particularly helping them to counter mobilization of local skilled labour away from the Tłı̨chǫ communities and associated impacts on maintenance of infrastructure and basic service provision. This can be done through training, rotational flexibility, and other measures to be developed with the smaller communities in the local study area.
16.2.13.1.7 - Employee Retention	16.30	Employee retention will be monitored and analyzed monthly through human resource information systems. The company will review hiring and termination of workers to determine an annual rolling forward turnover rate. Particular attention will be given to address any increase in turnover rates for Aboriginal people.
16.2.13.1.8 - Worker and Family Wellness	16.31	Fortune will meet with the local staff of the service providers and agencies on an ongoing basis to both provide and share relevant information. The site medical staff will make ongoing contact with local health officials to both report any relevant concerns and also to make Fortune aware of any issues.
		Through its adaptive management system, Fortune will incorporate knowledge about worker and family wellness from multiple sources, make use of multiple systems models, and support new forms of cooperation among stakeholders. At the site level, Fortune will monitor concerns brought forward by the medical staff, by community employees, and information gathered at community visits.
		Worker and family wellness will be specifically monitored in several ways, including the following:
		• monthly reports from the Employee and Family Assistance program will be prepared, advising the number and type of contacts and any notable patterns or concerns;
		• Fortune will communicate and collaborate with community health care providers in the potentially-affected communities for any concerns or changes to worker and family wellness that might require mitigation.
		• worksite medical personnel will provide support services to those with health issues. They will also monitor Fortune's commitment to healthy diet and nutrition and the availability of country food;
		• Fortune will monitor time lost due to illness; and
		• statistics on the termination of Fortune employees related to homesickness, rotational employment, and emotional stress factors will be gathered through exit interviews and follow up.
16.2.13.2 - Contributions to Beneficial and Adverse Social Impacts	16.32	A Socio-Economic Monitoring Plan will be designed to determine the effectiveness of Fortune's mitigation measures. The Socio-Economic Monitoring Plan will supplement, not duplicate, areas covered by the IBA to be negotiated for this project. In particular, the plan will be designed to include the following:
		• monitoring will be done through proactive policies and procedures early in the NICO Project;
		• determine the effectiveness of the measures in reducing adverse effects and enhancing positive ones associated with the NICO Project;
		• show where adjustments in those measures need to be made;
		• help Fortune adjust, augment, or replace measures to correct any adverse effects; and
		• work in partnership with government and Aboriginal organizations to collect, analyze, and interpret information related to the impacts of the NICO Project.
	16.33	A key feature of the Socio-Economic Monitoring Plan will be its ability to be modified and improved through experience and input. The plan will direct those responsible for its implementation to undertake the following actions throughout the lifetime of the NICO Project:
		• verify the accuracy and completeness of the socio-economic effects described in the DAR;
		• monitor the effectiveness of planned mitigation measures;
		• identify additional adverse effects;
		• review the effectiveness of data gathering;
		• modify the Socio-Economic Monitoring Plan to improve its effectiveness; and
		• share information about the effectiveness of the plan with Fortune personnel, contractors, community service agencies, and Tłı̨chǫ community residents.
16.2.13.2 - Contributions to Beneficial and Adverse Social Impacts	16.34	A Committee to oversee the effectiveness of Fortune's mitigation procedures and monitor socio-economic effects will be convened after a favourable decision to proceed with the NICO Project is given. The Committee will be comprised of representatives from interest groups affected by the construction, operation, and closure of the NICO Project. Representatives will include Fortune personnel, Department of Health and Social Services, the RCMP, representatives from some or all of the Tłı̨chǫ communities, and representatives of associations and organizations, and territorial, regional, and local and Tłı̨chǫ governments. Those who serve on the Committee must agree to contribute to data gathering and information sharing in their "sphere of influence".
		In its ongoing work with the Tłı̨chǫ, Fortune has been communicating with the Tłı̨chǫ Government's Kwe Beh Working Group, recently established to manage relationships with mining companies in Mowhi Gogha De Niitl'ee. Fortune will continue to build its relationship with the Kwe Beh Working Group, whose mandate includes matters of direct relevance to the NICO Project.
16.3.3.2 - Mitigation Proposed Mine Site Development	16.35	Fortune environmental design features for effects to Physical Heritage due to the NICO Project include:
		• construction and operation activity leading to ground disturbance that affects physical heritage resources;
		• completed archaeological assessment for areas that are considered likely to contain heritage resources;
		• avoid previously recorded heritage resource sites;
		• complete additional archaeological assessment for any changes to NICO Project footprint in areas considered to have moderate to high potential to contain heritage resources;
		• monitor condition of known heritage resource sites near the NICO Project footprint; and

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
		• provide awareness training and a manual for recognizing heritage resources to construction crews
16.3.3.2 - Mitigation Proposed NICO Project Access Road 16.3.3.2 - Mitigation Proposed Borrow Source	16.36	Fortune environmental design features for effects to Physical Heritage due to the proposed NPAR and Nico Footprint include:
		• completed archaeological assessment for areas that are considered likely to contain heritage resources;
		• avoid previously recorded heritage resource sites;
		• complete additional archaeological assessment for any changes to NICO Project footprint in areas considered to have moderate to high potential to contain heritage resources;
		• monitor condition of known heritage resource sites near the NICO Project footprint; and
		• provide awareness training and a manual for recognizing heritage resources to construction crews.
16.3.3.2 - Mitigation Proposed NICO Mine Site Development, NICO Project Access Road, and Borrow Source	16.37	Fortune environmental design features for construction and operation activity leading to impacts on heritage resource sites in the vicinity of the Įdaà Trail or Hislop Lake include:
		• reduce visibility of the NICO Project components from identified physical heritage resource (Įdaà Trail, Hislop Lake);
		• monitor condition of known heritage resource sites near the NICO Project footprint; and
		• provide awareness training and a manual for recognizing heritage resources to construction crews
16.3.3.2 - Mitigation Construction and Operation Activity Leading to Impacts on Heritage Resource Sites in the Vicinity of the Įdaà Trail and Hislop Lake: Proposed NICO Mine Site Development, Access Road, and Borrow Sources	16.38	Construction and operation activities of the proposed NICO Project will avoid known physical heritage resources in the vicinity of the Įdaà Trail and Hislop Lake
16.3.7 - Monitoring	16.39	Monitoring of the condition at known heritage resource sites near the NICO Project footprint will also occur.
16.4 - Traditional Land Use General construction and operation of mine and supporting infrastructure	16.40	Fortune is planning the following design features and mitigations plans to address the possibility that the NICO Project may affect the availability of wildlife (including fish) for harvesting or viewing.
		• cultural awareness programs;
		• impacts on wildlife will be managed by site environmental staff and through meetings and interviews with the local residents;
		• See 8.12
Table 16.4-1 Potential Pathways for Traditional Land Use Effects	16.41	• See 5.1 for commitments related to use of Traditional Knowledge
16.4 - Traditional Land Use General construction and operation of mine and supporting infrastructure	16.42	See 8.12
		Fortune is committed to having discussions with hunters and trappers who approach Fortune with a case that their hunting and trapping practices have been compromised by the NICO Project.
17 – Subject of Note: Accidents and Malfunctions		
17 – Accidents and Malfunctions Appendix 3.VI	17.1	The preliminary ERSCP addresses human-caused emergencies and natural disasters that threaten life, the environment and/or property, and that are beyond routine operational control. The document continues to be refined. As a minimum, the final ERSCP will address the following:
		• on-site and off-site spills;
		• tailings pipeline rupture;
		• failure of the CDF;
		• pit wall failure;
		• underground head failure;
		• extreme drought;
		• extreme precipitation, including effects on the CDF and Open Pit;
		• plane crash;
		• bus crash;

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
		• pressure vessel failure;
		• facility fires;
		• serious injury or fatality on-site and off-site;
		• earthquakes; and
		• on-site forest fires.
18 - Biophysical Management and Monitoring Plans		
18.2 - Summary of Community Engagement	18.1	See 4.1 for engagement related commitments
	18.2	Fortune believes it is essential that communities be involved with monitoring to judge how well Fortune is doing at reducing effects and improving environmental management. Fortune plans to involve communities in environmental monitoring by:
		• developing monitoring programs that include input from communities, including people holding local and traditional knowledge;
		• developing monitoring programs that reflect community priorities and values;
		• including community members in monitoring activities and hiring local residents as environment staff;
		• presenting the results of monitoring with the communities; and
		• providing an opportunity for communities to comment on the findings.
18.3.1 - Proposed Framework	18.3	Fortune intends to implement an Environmental Management System incorporating the principles of adaptive management that reviews all monitoring information, identifies areas of concern, and then makes appropriate changes to the operation of the mine to reduce or remove effects to the biophysical environment. from all monitoring would flow into a Monitoring Response Plan. The Monitoring Response Plan would require documenting the following: information:
		• a summary of environmental pathways and effects predictions from the NICO Project;
		• a description of how changes to the biophysical environment will be measured and considered;
		• a description of action levels and significance threshold, where available, for measurement endpoints (or indicator variables) of valued components; and
		• a description of the mitigation and management actions that will need to be submitted if action levels are reached.
18.5.2 - Monitoring Programs	18.4	For the NICO Project, Fortune is proposing 4 biophysical monitoring programs which will be developed and completed with input from the communities and government and regulatory agencies. These include. See 7.12, 8.13, 10.4 and 14.10
Appendix 8.III - Noise Assessment		
8.III.3.2 - Environmental Design Features	8.III.1	During the development of the NICO Project environmental design features were incorporated by Fortune that reduce or eliminate potential impacts from noise, these include:
		• terrain changes (i.e., height of CDF and slopes of the Open Pit) to partly deflect or reduce noise by physical impediment;
		• noise is partly deflected or reduced by buildings or other structures (i.e., structures situated between noise source and receptor); and
		• stationary equipment is housed inside buildings, thereby reducing the amount released into the environment provided doors are kept close.
Appendix 18.II - Conceptual Wildlife Effects Monitoring Program		
18.II.1 - Introduction	18.II.1	See 8.13 for commitments related to Fortune's conceptual WEMP
18.II.1.1 - Objectives	18.II.2	The WEMP for the NICO Project will be designed to achieve the following objectives:
		• provide information to test predicted impacts from the NICO Project DAR, and reduce uncertainty;
		• implement environmental design features and mitigation to reduce the risks and disturbance to wildlife and wildlife habitat;
		• determine the effectiveness of environmental design features and mitigation;
		• Incorporate local traditional and ecological knowledge, where applicable and available;
		• propose action levels or adaptive management triggers that can be used as early warning signs for reviewing and implementing wildlife mitigation practices and policies;
		• design studies and data collection protocols that are consistent with other programs in the region; and
		• consider existing regional and collaborative programs, such as Cumulative Impact Monitoring Program and the NWT Environmental Stewardship Framework.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
18.II.3.1 - General Mitigation	18.II.3	Fortune is committed to remove or limit effects to wildlife and wildlife habitat. A summary of the environmental design fearless ad mitigation that will be implemented for the NICO Project include the following:
		• limit the spatial extent of NICO Project footprint (i.e., anticipated mine site and NPAR);
		• promote natural re-vegetation and practice progressive reclamation;
		• remediate ad decommission the site when mining operations are complete;
		• skirt all buildings to the ground to limit opportunities for animals to find suitable shelter;
		• locate noisy equipment inside buildings or underground;
		• house the incinerator in an enclosed structure to improve combustion and reduce the availability of attractants while garbage awaits incineration;
		• use double-walled containers or single -walled container in lined containment areas for all fuel storage;
		• provide spill containment supplies in designated areas;
		• use a fuel transfer house with double-locked mechanisms;
		• use culverts and other design features that reduce changes to local flows, drainage patterns and drainage areas;
		• capture and reuse site water to reduce fresh water requirements;
		• recycle and treat excess water from the SCPs prior to release;
		• use high efficiency scrubbers in processing equipment to limit emissions of particulate matter;
		• use dust control systems on rock crushing and other dust generating equipment;
		• enforce speed limits and use water on roads during summer and fall to suppress dust;
		• manage and isolate attractants, particularly food waste;
		• report raptor nesting activity observed within 1.5 kilometres of the NICO Project to the Department of Environment and Natural Resources (ENR);
		• if feasible, clear land only outside of the breeding season for migratory birds (15 May through 31 July) for all facilities where migratory birds may nest;
		• report all relevant observation of wildlife (particularly of caribou, fox, wolverine, and black bear) to environment staff;
		• implement an effective Waste Management Plan, particularly as it related to the disposal of food waste;
		• identify and monitor birds nesting on NICO Project infrastructure;
		• prohibit hunting, trapping, harvesting, and fishing by site employees and contractors;
		• contact ENR to receive additional direction regarding new issues that arise;
		• provide wildlife the right-of-way;
		• enforce a minimum flying altitude of 300 metres above ground level (except during take-off and landing and aerial surveys) for cargo and passenger aircraft outside of the NICO Project;
		• enforce a minimum flying altitude of 300 metres for helicopters, whenever possible;
		• restrict vehicle use to designated roads and prohibit recreational off-road use of vehicles;
		• use signage and radio to warn drivers when wildlife move through an area; and
		• suspend surface blasting temporarily if large mammals are observed within the danger zone identified by the blast supervisor.
8.II.3 - Mitigation 18.II.3.2 - Deterrent Actions	18.II.4	Fortune is committed to using humane wildlife control methods that keep both humans and wildlife safe including wildlife deterrent actions. For deterrents to be successful there must be:
		• knowledgeable, trained personnel who will select corrective deterrent actions based on each wildlife situation;
		• consistent application of deterrents;
		• effective implementation of the Waste Management Plan;
		• safe and effective methods to prevent the presence of continuous presence of wildlife within the anticipated NICO Project Lease Boundary;
		• procedures to remove wildlife from the Airstrip or roads during an emergency;
		• the absence of food, shelter and other rewards for animals that investigate the site; and
		• evaluation of every deterrent action to determine the reason for the animal's presence and the method it used to gain access to a hazardous area.

Table 1-1: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Developer's Assessment Report – May 2011 (continued)

Section	Commitment #	Commitment Description
18.II.3.3 - Caribou Protection Section 8	18.II.5	Fortune commits to the following mitigation to protect caribou:
		• hunting by NICO Project staff and contractors will be prohibited while on-site;
		• all incidents involving deterrent action, interaction and injury of caribou will be reported;
		• all sightings of caribou will be reported to the environment staff on-site;
		• caribou will not be blocked from crossing NICO Project roads and the Airstrip;
		• if caribou are crossing or attempting to cross the NPAR or site roads, then traffic will stop and wait for them to cross; and
		• caribou will only be herded away from roads or the Airstrip in specific circumstances, such as an emergency.
18.II.3.4 - Waste Management Section 3	18.II.6	Fortune's Waste Management Plan for the NICO Project contains the following wildlife-specific mitigation strategies:
		• follow procedures outlined in the Waste Management Plan and the Emergency Response and Spill Contingency Plan;
		• no littering policy;
		• no feeding of wildlife policy;
		• separate food waste and non-food waste at source;
		• disposal of food waster and non-toxic combustible waste according to the Waste Management Plan to limit the presence of food attractants;
		• providing contained areas for lunch and coffee breaks with waste containers for food waste;
		• clearly identifying all food waste containers and those for which food waste is not permitted; and
		• store food waste in an isolated area and incinerate quickly.
18.II.4 - Monitoring	18.II.7	Fortune's WEMP for the NICO Project includes:
		• recording the presence of all wildlife within and around the NICO Project footprint;
		• mitigate hazards to wildlife within the NICO Project site;
		• identify non-compliance with Waste Management Plan; and
		• continually improve waste management practices to limit the potential for risks to wildlife.
18.II.5 - Reporting and Adaptive Management	18.II.8	If negative effects to wildlife are detected at the NICO Project, Fortune will review the situation and consider the use the following options:
		• increase monitoring effort;
		• implement new monitoring programs to further understand the effects; or
		• implement additional mitigation to reduce the effects.

Source: Fortune (Fortune Minerals Limited). 2011. NICO Cobalt-Gold-Bismuth-Copper Project: Developer's Assessment Report. Submitted to the Mackenzie Valley Review Board. May 2011.

AEMP = Aquatic Effects Monitoring Program; CDF = Co-Disposal Facility; C&R = Closure and Reclamation; DAR = Developer's Assessment Report; EA = Environmental Assessment; ETF = Effluent Treatment Facility; Fortune = Fortune Minerals Limited; IBA = Impact Benefit Agreements; INAC = Indian and Northern Affairs Canada; NPAR = NICO Project Access Road; NSMA = North Slave Métis Alliance; SCP = Seepage Collection Pond; STP = Sewage Treatment Plant; WEMP = Wildlife Effects Monitoring Program

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category

Document	Commitment Description
Footprint	
TG_4 (4.1)	Fortune Minerals Limited (Fortune) has decided to reduce its footprint and environmental impact by using the existing Whatì airport in lieu developing and airstrip at the mine site.
Commitment #12	No longer needing to construct a contingency pond as part of the NICO Project.
Transportation	
TG_4 (4.2)	The airport at Whatì will not be the main transportation hub for the NICO Project. The vast majority of supplies and staff will be mobilized on the all-weather road. The airport at Whatì will only be used for emergencies and for the transportation of workers in remote location such as Wekweètì.
TG_20 (20.1)	Bus routes will be free of charge, as are rotational work fly-ins from Tłı̨chǫ communities not linked by road.
TG_20 (20.3.1)	Whatì resident workers at the mine will be transported to and from home every day according to the job they are employed to do (see Section 16.2.4 of the Developer's Assessment Report [DAR]).
Undertaking #7	Fortune is to provide the technical and economic feasibility information used when it made the determination that an all-season road was the only appropriate haul system for the NICO Project.
RND2_TG_15 (d)	Rock haul trucks will frequently move into and out of the Co-Disposal Facility (CDF). However, they will only travel on haul roads or cell dykes composed of mine rock. They will not, and cannot traffic directly on top of the tailings.
Socio-Economic Meeting Report[c]	Fortune commits to explore its range of employee transportation to accommodate labour from other regions in the NWT. Details on this commitment will be provided and posted to the registry.
Engagement and Consultation	
TG_4 (4.5.2)	Fortune will invite the Tłı̨chǫ Government and the community government of Whatì to participate in discussions with the Government of the Northwest Territories (GNWT) DOT concerning expansion of facilities at the Whatì airport.
TG_10 (10.2), Commitment #5	Fortune commits to assisting communities with monitoring use of the proposed Tłı̨chǫ Road Route and NICO Project Access Road (NPAR), if requested to do so by the Tłı̨chǫ Government. Work with the Tłı̨chǫ Government and the Wek'èezhìi Renewable Resources Board to jointly develop a monitoring plan for the access road routes.
TG_10 (10.4)	Fortune will work with the Tłı̨chǫ Government and the Kwe Beh working group to incorporate local and traditional knowledge into monitoring plans once the Tłı̨chǫ traditional knowledge study has been completed.
TG_7 (7.2)	Consultation on the issues of actual borrow site locations will occur prior to construction, once approvals for the NICO Project have been received. Fortune will provide the location of the proposed borrow sites and the estimated amount of material that will be removed from each site.
TG_19 (19.1.3), Commitment #19	Fortune commits to doing more to liaise with the communities to support the issues with shift rotations and the difficulties of home life, such as through its Employee and Family Assistance Program.
TG_11 (11.2)	Fortune will engage the Tłı̨chǫ Government in discussions on their involvement in the monitoring of caribou in the region of the NICO Project. Annual reports from this monitoring will be made available to the Tłı̨chǫ Government for review and discussion.
TG_22 (22.2), TG_22 (23.8), YKDFN_4.2, YKDFN_4.6 (a), YKDFN_4.6 (b)	In the short-term, Fortune has recently received approval from the Kwe Beh working group to complete a community consultation tour in the Tłı̨chǫ communities. With the aid of the 3D models developed for the NICO Project, Fortune will seek input from the communities on closure objectives and concerns. Details of engagement logistics for closure planning will be developed in cooperation with the Tłı̨chǫ Government. In the longer term, as the NICO Project moves into operations, the closure plan will be a living document that will be periodically revisited and updated with input from the communities. Traditional knowledge will be incorporated into the closure planning, where practical, with the aid of Tłı̨chǫ citizens and elders. Input will be sought prior to closure once Fortune has an understanding of what might be available for use by communities
YKDFN_4.6 (b), TG_22 (23.9.2)	Details of engagement logistics for closure planning will be developed in cooperation with the Tłı̨chǫ Government. Fortune intends to engage the communities in the closure planning process through the following:
	• initiating meetings with leaders of the communities and government organizations;
	• engaging each community through community-based activities such as open houses, presentations, and meetings;
	• inviting community leaders and representatives to visit the NICO Project site; and
	• granting specific requests for site visits from elders.
Commitment #25	Work with the Tłı̨chǫ Government in terms of determining taxation, benefits, impacts on social services, and the financial analysis in relation to the Tłı̨chǫ Government revenues from the NICO Project and in-migration
Commitment #28	Discuss and negotiate various agreements with the Tłı̨chǫ Government.
GNWT_10	Fortune will incorporate knowledge from multiple sources, make use of multiple systems models, and support new forms of cooperation among people interested in the NICO Project. Any opportunity for improvement will be acted upon accordingly. Fortune will liaise with relevant federal, territorial, and Tłı̨chǫ Government agencies and relevant transportation, health, social, education, and other relevant regional agencies in the planning process and during construction and operations.
RND2_GNWT_2-2, RND2_NSMA_2-2	Fortune will meet with the GNWT and co-management partners to discuss the details of the Wildlife Effects Monitoring Plan (WEMP) during the permitting phase until the plan meets regulatory requirements and the requirements specific to the NICO Project. Fortune would welcome the input of the NSMA when the discussions on the details of the WEMP occur.

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category (continued)

Document	Commitment Description
Heritage Resources	
TG_7 (7.1)	If requested, Fortune would complete a heritage resource survey on proposed borrow sources with the assistance of the Tłı̨chǫ.
NSMA_1-2	Should any future archaeological investigation, including assessment, monitoring, or mitigation be required, permit applications will be submitted to the PWNHC and community members from within the Tłı̨chǫ communities and from the NSMA would be asked to participate.
Health Risk	
TG_8	Fortune was not in a position to have detailed discussions on absolute or relative health risks of the NICO Project until the DAR was complete. Fortune will make company representatives available to discuss risk issues at the request of the Tłı̨chǫ Government or Tłı̨chǫ communities
Review of Meeting[h]	Provide rationale for the elimination of essential elements, such as calcium, magnesium, potassium, and sodium as chemicals of potential concern in the aquatic risk assessment.
Review of Meeting[h]	Review Franklin et al. (2005) for further consideration in aquatic risk assessment.
Health and Safety	
TG_9 (9.3)	Tłı̨chǫ citizens wishing to come close to the mine site will be given direction on what areas to avoid. With a description of these restricted areas, a safe travel option can be developed.
TG_9 (9.4)	A safety buffer from the mine site will be developed and communicated to the Tłı̨chǫ Government or any Tłı̨chǫ citizens that wish to access the property.
TG_17 (17.3)	Fortune is committed to maintaining a safe, healthy, and productive work environment for all of our employees, contractors, visitors, and customers.
TG_31 (31.10)	While working on-site, all required personal safety equipment will be supplied as a method of prevention. All required environmental testing will be periodically completed, including dust suppression, where and as required
MVRB_4	Fortune will post a sign on the portage into Peanut Lake from Nico Lake, indicating to snowmobilers that the lake may have weakened ice. Snowmobilers will have the option of using the lake margins to cross Peanut Lake.
GNWT_6 (1)	The policy (Harassment and Discrimination Policy) will be strictly enforced to provide a safe, secure, and respectful working environment. The policy will be communicated as part of the orientation process for any employees. All policies will be re-communicated to all employees on an annual basis and employees will be asked to sign-off that they have knowledge of and understand the policies. Supervisors will be trained in how to recognize any harassment incident and manage the process sensitively.
Socio-Economic Meeting Report[c]	Once a Health and Safety Manager is employed, Fortune will work directly with the GNWT Department of Health and Social Services regarding the emergency evacuation plan and address concerns regarding government costs associated with non insured medical services. GNWT and Fortune will discuss health care arrangements further.
Employment and Training	
TG_16 (16.1.1), Commitment #21, Commitment #22	Fortune will complete a labour skills survey in the communities to help answer questions and work with the Tłı̨chǫ to increase the percentage of Tłı̨chǫ working. As part of Fortune's commitment to provide employment and business opportunities to Northerners (see Section 16.2.4 in the DAR), priority will be given to the residents of local northern and Aboriginal residents, and priority will be given to residents of Tłı̨chǫ communities. A Tłı̨chǫ human resources manager will be hired to lead the recruitment process from an office in Behchokǫ̀ to facilitate the ability to recruit people from the area. All job postings will be given to the Tłı̨chǫ community employment co-ordinators to give them first opportunity to source an appropriate candidate from their communities. Minimum targets are 50 to 60 percent of all operational jobs for Northerners, with 30 to 50 percent of those jobs for Aboriginal residents; and 60 to 80 percent of contract positions for Northerners, with 30 to 50 percent of those jobs for Aboriginal residents. Tłı̨chǫ citizens would have first priority.
TG_16 (16.3), Commitment #23	All employees will receive on-the-job training in their workplace to enhance their knowledge, skills, and competencies. All employees will have opportunities for advancement through further training, work experience, performance review, and coaching to determine their interests and abilities. Tłı̨chǫ employees (along with all employees) will be offered opportunities for on-the-job training to advance to a different role and also opportunities to upgrade their skills and qualifications. This on-the-job training is provided during the NICO Project life. In some areas, such as heavy equipment where workers have had experience in other industries or the communities, they will be provided with on-the-job training to adapt their skills to the mining industry. While employed with Fortune, there will be a policy to define the process for career development for employees. Professional development will be encouraged and financially supported by Fortune to the extent possible.
TG_16 (16.9), Commitment #24	Fortune will value work experience and general knowledge for candidates who do not have the minimum level of formal education.
TG_16 (16.9.1)	While high school graduation is considered a minimum requirement for most jobs available at the mine site, Fortune will conduct competency assessments and consider work experience in place of requiring grade 12 education for Tłı̨chǫ citizens or Aboriginal workers in general. Fortune will value work experience and general knowledge for candidates who do not have the level of formal education.
TG_17 (17.2), Commitment #26	Fortune will adopt several measures to ensure that there is career advancement. All employees will receive on-the-job training in their workplace to enhance their knowledge, skills, and competencies. All employees will have opportunities for advancement through further training, work experience, performance review, and coaching to determine their interests and abilities. Employees will be offered opportunities for on-the-job training to advance to a different role and also opportunities to upgrade their skills and qualifications. On-the-job training is provided during the NICO Project life. In some areas, such as heavy equipment where workers have had experience in other industries or the communities, they will be provided with on-the-job training to adapt their skills to the mining industry.
GNWT_9 (3)	Fortune will ensure that businesses from the NWT will have the opportunity to compete for procurement contracts by developing clear standards and operation procedures for current and potential suppliers. Fortune currently uses Tłı̨chǫ services, such as The Tłı̨chǫ Investment group, Tłı̨chǫ Logistics, and Tłı̨chǫ community level resources to identify NWT suppliers. Fortune will continue to expand this key relationship to identify and award Northern contracts. Fortune will always reserve the right to award contracts based on competitiveness, quality of goods or services, commercial benefit to the NICO Project, and the Northern communities
TG_31 (31.8)	Fortune has made the commitment that Tłı̨chǫ people will be hired at the mine site as environmental monitors, whenever possible.

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category (continued)

Document	Commitment Description
GNWT_2 (a)	Fortune will train supervisors for the work. They will be provided with all mandatory safety training including WHMIS, and other Occupational Health and Safety standards and procedures. In addition, Fortune will provide all supervisors with an intensive orientation at the commencement of employment or to employees when promoted to a supervisory position. Fortune will seek opportunities to encourage and support Aboriginal workers who would like to pursue supervisory or management roles. Workers selected for supervisor positions as a developmental opportunity will be provided the training for all safety, health, and environment procedures. They will also be trained in supervisory skills such as conflict management, problem solving, decision making, and communications. They will be made familiar with all company policies including human resources, environment health and safety. They will be mentored and coached by their supervisor or manager to further enhance their skills and abilities. In addition, they will be provided with performance feedback for learning purposes. Training will be provided for supervisors during the NICO Project life and for those promoted during NICO Project life
GNWT_2 (b), Commitment #26	All employees will receive on-the-job training in their workplace to enhance their knowledge, skills, and competencies. All employees will have opportunities for advancement through further training, work experience, performance review, and coaching to determine their interests and abilities. Employees will be offered opportunities for on-the-job training to advance to a different role and also opportunities to upgrade their skills and qualifications. On-the-job training is provided during the NICO Project life. In some areas, such as heavy equipment where workers have had experience in other industries or the communities, they will be provided with on-the-job training to adapt their skills to the mining industry.
GNWT_2 (c), (d)	It is not expected that there will be a formal apprenticeship and trades training program on-site due to the small operation. If there is an opportunity for an individual, this will be arranged on a one-on-one basis to provide any support for an apprentice to continue their training with a journeyman and be provided with a salary and time-off during the NICO Project life. Fortune will provide and encourage opportunities for apprenticeships where there are sufficient available journeymen and eligible apprentices.
GNWT_2 (e), GNWT_6 (4)	Fortune will have computers available for those who might wish to participate in on-line education programs at site while on their time-off. All efforts will be made to support individuals in any literacy programs. Any community resources that could provide literacy education for employees on their days off will be supported. Financial management programs will be made available to employees during their orientation and this would include such procedures as the opening of bank accounts. Fortune also plans to offer financial management workshops for family and any interested community members in all the communities as appropriate. Health and wellness programs will be integrated into the workforce as appropriate during the work time. These may include site-based workshops on diet and exercise, general hygiene, or specific health issues as they are of interest and pertinent to the workforce. These programs would also be provided to individuals through the health care providers on-site.
GNWT_2 (f)	Training for heavy equipment operators, introduction to open pit mining and open pit miner training, and pre-trades training will be part of the programs negotiated at the time of NICO Project approval.
GNWT_1 (2), (3), (4) GNWT_2 (g)	All new employees will be provided with an extensive orientation to Fortune at the mine site. This will include review of all policies and procedures related to their work including human resources, environment, health and safety, on-the-job training for the specific role that they have been hired for, and orientation to the work site. There will be additional training provided for entry level roles and those new to the workforce to verify their success. In some cases, additional training will be provided to new workforce entrants and women entering the workforce to provide skills training.
GNWT_2 (h)	While employed with the Fortune there will be a policy to define the process for career development for employees.
GNWT_2 (i), GNWT_6 (4)	Before and during the mine operations, there will be educational programs conducted in the communities by Fortune officials to encourage students and other community members to consider careers in mining. There will be a direct appeal to women who might not have previously considered a career in mining. During the operations, school visits will be made and students will be brought to the site to experience the possibilities of employment after they leave school or consider options for further education. Fortune will develop a strategy directed at women to draw them into the mining workforce. More flexibility of shifts is being proposed as it might remove barriers for women with a young family.
GNWT_2 (k)	Potential employees will be provided with training through Aurora College in Yellowknife and Fort Smith. Fortune will make every effort to bring training to any of the communities as is practicable.
GNWT_2 (m)	Training will be negotiated and scheduled as the NICO Project is approved. Recruitment strategies have been drafted and will be put in place as needed, with a local study area office opened in Behchokǫ̀ to assist recruitment as the time to recruit is closer. A Tłı̨chǫ human resources professional will be hired to lead the recruitment efforts in the communities. There will be some incentives, such as production bonuses provided for some of the mining roles. The compensation and benefits packages will be developed to be a factor in attraction and retention. Other retention incentives will be developed and incorporated closer to the time of production commencement.
GNWT_3 (1), GNWT_9 (1), Socio-Economic Meeting Report[c]	Preference will be given to local northern and Aboriginal residents as part of Fortune commitment to provide employment and business opportunities to Northerners. Fortune will locate a business office in the NWT to support procurement and human resources. Fortune committed to providing more specific details on their HR and procurement offices in the NWT.
GNWT_4 (4), Commitment #20	Fortune understands the present labour supply is not large enough to be able to accommodate most of the employment and contracting opportunities, but will adopt strong management practices to support local and regional hiring. Fortune will work with the Tłı̨chǫ Government in both the collection and joint analysis of employability information and on the implications of the NICO Project in terms of Tłı̨chǫ employment and in-migration.
GNWT_6 (3), GNWT_6 (4)	During the construction phase, Fortune will require bidders to include gender equity provisions in their tenders that comply with Fortune's Women's Employment Plan. Contractors will be required to sign-on to respectful workplace policies. During construction and operations, orientation sessions will focus on gender sensitivity. There will be on-going monitoring of the Women's Employment Plan. Female-friendly accommodations will be made available. During construction and operations, women's employment will be supported by anti-harassment and discrimination policies. The human resources management system will support the Women's Employment Plan. Fortune will work with post-secondary institutions, women's organizations, and the GNWT to ensure ready access to basic training in literacy and numeracy skills that will enable workers to increase their core competencies. Fortune will develop and implement a human resources strategy for recruitment, retention, and promotion that will contribute to the creation of a diversified workforce. Fortune will communicate and promote the employment of women through Fortune's newsletters and website, and in the communities through information meetings and community outreach. A school program will be initiated to inform students of potential employment opportunities and educational pathways to pursue employment in the mining sector. There will be an emphasis on women considering non-traditional employment and discussion of the benefits. There will be gender equity for employee wages. There will be mentoring and coaching for women in their current roles and to facilitate promotion. Policies that will be family-friendly will be in place including flexible work hours and family leave. There will be support for child care initiatives of local community organizations and employee groups. Women will be engaged in ways to improve or increase employment conditions and employment opportunities.

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category (continued)

Document	Commitment Description
Undertaking #8, GNWT_8 (3)	Fortune is to identify the range of shift rotations possible for the NICO Project, as well as the pros and cons associated with those rotations. Fortune will discuss shorter rotations with employees
GNWT_11 (1)	If there is unforeseen closure, including temporary or early closure, Fortune will advise employees as soon as possible after a decision is made, if it is unforeseen. It is expected that if there is lead time, senior management will come to the site and communicate with employees in a face-to-face meeting. Otherwise, available site managers will communicate the message. Employees at home will be contacted using a number of media including telephone, e-mail, and social media to verify they have any information very quickly and prior to hearing of changes in the news media. Management representatives would go to the local communities to meet with employees and local officials to communicate such information. Written communication would follow. If the closure is immediate, due to an extraordinary event or circumstance beyond the control of the management, any notice may be immediate, if the situation is a critical and unforeseen event. However, employees would be paid for an appropriate notice period which is difficult to determine at this time, without specific information regarding the situation. It would also be dependent on the expected time for any temporary closure. The GNWT program departments would be notified at the same time as the employees are apprised of the situation. Discussion meetings would be immediately arranged to communicate the situation, as well as seeking advice and input. The government departments would be advised by telephone and followed-up with written communications, as well. Employees would be advised using the most expedient communications methods to advise them of the situation and the impact on their jobs. An early closure would likely be seen with adequate advance time to communicate fully with employees in a planned way and a plan for lay-offs and notice would be developed at that time.
Socio-Economic Meeting Report[c]	Fortune will work with GNWT program departments in the event of unforeseen or planned closure including Fortune's decision to terminate or temporarily lay off 25 or more employees, including contract employees. Fortune will provide in writing to the GNWT program departments with the following information:
	• the number of employees who will be affected;
	• the name, community of residence, job title, and qualification of each employee who will be affected;
	• the effective date or dates of termination; and
	• the reasons of termination.
GNWT_6 (4)	Professional development opportunities will include the following:
	• Fortune supported attendance at relevant professional conferences;
	• seminars and workshops;
	• support for membership in professional organizations;
	• support for participation in on-line courses, webcasts, and training and, in some cases, support for attendance at courses relevant to the work; and
	• time off for writing exams and preparing for professional opportunities.
Cultural Awareness and Community Impact	
GNWT_2 (j)	Cultural awareness and diversity training will be part of the initial orientation for employees. Opportunities will be sought to bring elders and community members to the site for cultural events to further support the First Nations employees to share their culture and also to support diversity for employees from other cultures. This training will be provided on an annual basis for all employees. Local elders and cultural experts will be engaged to design and provide the training. Cultural awareness and diversity training will be part of the supervisors' training and orientation.
TG_17 (17.5)	To allow for healing, grieving, and prayer in ways that are considered appropriate, Fortune will have rooms available on-site for this use.
TG_17 (17.7)	To ensure that people are not wrongfully dismissed for reasons related to cultural misunderstandings, Fortune will provide training to all workers on-site. Cultural awareness and diversity training will be part of the initial orientation for employees. Opportunities will be sought to bring Elders and community members to the site for cultural events to further support the First Nations employees to share their culture and also to support diversity for employees from other cultures. This training will be provided on an annual basis for all employees. Local Elders and cultural experts will be engaged to design and provide the training. Cultural awareness and diversity training will be part of the supervisors' training and orientation.
TG_17 (17.1)	All employees will be eligible for the same number of paid leave days for bereavement but Fortune will be flexible to allow Aboriginal workers additional time off without pay to attend funerals or associated arrangements.
TG_17 (17.6)	Fortune will collect and publicly report annually on total number of NWT resident employees who resigned or who were laid off, fired, or otherwise terminated in the previous year.
GNWT_9 (1)	Fortune has, and will continue to use the Tłı̨chǫ communities employment counsellors to help ensure the success of the NICO Project
GNWT_1 (1)	The financial management, alcohol and substance abuse, family adaptation, and coping mechanisms workshops will be implemented as part of each employee's orientation procedure.
Undertaking #9	Fortune is to provide a list of references for the case studies it used to estimate the in-migration levels into the smaller communities (e.g. Whatì) as a result of the NICO Project.
Undertaking #11	Fortune is to identify some existing proxy or case studies about communities that have previously had only seasonal access and provide a summary of the effects of new all-season roads on those communities.
Commitment #27	Provide a copy of the First Nations First Policy, information about membership with the Canadian Counsel for Aboriginal Business, and information on progressive Aboriginal relationship (PAR) certification to the Tłı̨chǫ Government.
Commitment #30	Discuss with the Tłı̨chǫ Government the potential impacts - direct, indirect, and cumulative - on Treaty or Aboriginal rights or on the rights protected under the Tłı̨chǫ land claim.

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category (continued)

Document	Commitment Description
GNWT_11 (2)	The framework of the Human Resources Closure Plan will be established as the operation commences. It would be expected to be in effect to prepare for the cessation of operations and continue for the expected 2-year closure period as decommissioning and reclamation takes place. The Sustainable Development Strategy will be established when the NICO Project is approved so that decisions will be made with the construction of the mine. It will be implemented prior to the commencement of operations. It will be in effect for the life of mine operations, the closure, and the decommissioning and reclamation time frame.
GNWT_6 (2)	Numerous communications means will be available to employees to communicate with family while at the worksite.
Closure and Reclamation Planning	
TG_22 (23.4)	Fortune has commissioned a Tłı̨chǫ traditional knowledge study which will be used in the development of a more detailed closure and reclamation plan. In addition, as detailed in response 22.2, Fortune will continue to seek traditional knowledge and other sources of information as the NICO Project moves forward and the closure and reclamation plan is updated.
TG_22 (23.9.1), TG_22 (24.2.2), YKDN 4.5 (f), Commitment #18, Informal Information Requests[i]	A Preliminary Closure and Reclamation Plan (PRCP) is being developed. PCRP will be updated to an Interim Closure and Reclamation Plan (ICRP) and that in turn will be reviewed with the Tłı̨chǫ Government and communities and updated every 5 years during operations. Details of the cover system modelling and field monitoring system will be included in the updated version of the closure and reclamation plan.
YKDNF_1.3	Fortune will complete during operations, to the extent possible, reclamation including the construction of infrastructure and systems required for future reclamation while equipment and personnel are on-site to reduce future work required and associated costs with final closure. Fortune will also post security during the life of the mine to address 2 issues. The first is the reclamation required immediately at the end of the mine life. The second is for dealing with potential water quality issues once the open pit overflows, if required, subsequent to the mine closure. A long-term monitoring. The amount of the security required will be agreed upon with Aboriginal Affairs and Northern Development Canada during the regulatory period. The security will be deposited at agreed upon dates and milestones to ensure that the funds required for future reclamation will be available. The security will be held in-trust and deposited in low-risk investments intended to meet or exceed the cost of inflation over time so that additional funds will not be required in the future.
YKDFN_1.4	Once closure and reclamation objectives for the mine have been reached after closure, Fortune will relinquish those leases.
TG_28 (28.2 & 28.3)	Conceptual design of the post-closure passive treatment options will take place prior to the detailed design stage of the NICO Project and will be submitted during water licensing. .... Field trials, based on actual site conditions and detailed from conceptual designs, will take place during mine operations. The detailed engineering design will be completed following scale-up of the field trial cells, using design criteria and operating parameters optimized from those trials
YKDFN_4.4 (a)	Reclamation and re-vegetation activities will start during the active mining period and will be completed within 10 years after mining ceases. Reclamation activities related to redundant site roads, the Effluent Treatment Facility, camp facilities, etc will be completed within 10 years after mining.
YKDFN_4.5 (d)	Fortune agrees that a re-vegetation plan will be developed and it will be integrated with the closure objectives and potential criteria for evaluation. This plan will be developed in cooperation with the Tłı̨chǫ Government.
RND2_TG_13	Pilot testing will be conducted over several seasons during the active mining period to characterize seasonal performance of the aerobic wetland.
RND2_TG_19 (19.1)	During the passive treatment development program a second type of passive system will also be evaluated in the event the desired treatment cannot be effectively implemented with a strictly wetlands type approach.
Co-Disposal Facility	
TG_27 (27.2)	A case history document on co-disposal will be provided
TG_27 (27.6)	During operations routine laboratory testing of rock samples will be used to confirm rock types on an ongoing basis such that it can be disposed of appropriately.
TG_27 (27.7), TG_22(23.4), YKDFN_4.5 (a), YKDFN_4.5 (e), RND2_TG_15 (f)	The physical stability of the CDF will be monitored by direct observation throughout the operating life. The protocols for the observations and the keeping of records will be codified in a formal Operation, Maintenance and Surveillance (OMS) System manual, which will be put in place by the start of operations. The surveillance will range from shift by shift inspections by mine personnel to periodic review by geotechnical engineers. The OMS manual will also address the monitoring of the environmental performance of the CDF. In addition to the visual inspections, the environmental monitoring will include a protocol of frequent sampling and testing of the water quality of the toe seepage/Seepage Collection Pond water, as well as tracking of the results. The post-closure surveillance program will be specified in PCRP.
TG_27 (27.7), TG_22(23.4), YKDFN_4.5 (a), Informal Information Requests[i]	The field cell program that was initiated in July of 2011 is a first step in testing to optimize the cover design. Further steps include the following: • A test pitting program will be carried out to identify the sources, quantity and quality of borrow materials (i.e., till and sand) that will be used to construct the covers. • Samples from the test-pitting program will be tested in a soils laboratory to identify the relevant material properties (i.e., gradation, water content, saturated permeability, and soil-water characteristic curves). • Predictive modelling of the soil cover performance will be carried out (using SVFlux), considering the expected range of climatic conditions, as well as vegetation effects. The results of the modelling will be used to define the technical specifications for acceptable cover materials. • Once pre-stripping of the Open Pit begins, samples of mine rock will be available with a representative gradation. At that stage, large scale lysimeters cells will be constructed on site using representative mine rock and tailings from the process development work as the substrate and representative samples of sand and till as the cover material. The water content in the till layer will be monitored over time by means of instrumentation and direct sampling. Leachate will be collected from the cells for measurement of infiltration amounts and chemistry.
TG_27 (27.3)	The volume and chemistry of the leachate from the 3 cells will be monitored over the next few years. The interim results will be reported when they are available.

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category (continued)

Document	Commitment Description
TG_27 (27.7), TG_22(23.4), YKDFN_4.5 (a), YKDFN_4.5 (e)	Test plots will be set up in the early stages of mining to select the most suitable re-vegetation techniques for the soil covers. This will involve testing of various seed mixtures, fertilizers, and organic amendments. Fortune will consider both passive and active re-vegetation strategies. Fortune will undertake a literature review of vegetation species in the region and will evaluate their suitability for re-vegetation. Reclamation research from other mine operators will also be reviewed. Local residents will be consulted for their views on the most suitable vegetation species. The suitable species will be evaluated in field plot trials.
TG_27 (27.8), Undertaking #6, Commitment #16	Fortune will involve Tłı̨chǫ people in the determination of the vegetation cover for the CDF. Fortune is to submit a description of the types of covers that have been utilized on existing co-disposal facilities, including the materials used, the depths of the covers (layers) and the nature of their performance (criteria).
YKDFN_4.1, YKDFN_4.7 (c)	The perimeter dyke of the CDF will be raised continually in 5 metre (m) lifts using the upstream construction method. On every second 5 m lift, a 10 m wide bench will be provided on the exterior slopes of the perimeter dyke. After a bench is created, the previous 10 m height will be reclaimed by placing the soil cover and allowing the surface to re-vegetate. By the time the mine operation is completed, all but the final 10 m height of the perimeter dyke will have been reclaimed. Portions of the top surface of the CDF will be re-graded, covered, and reclaimed after they reach their final grade. Overall, about 85% area of the CDF will be reclaimed by the end of the operations of the proposed mine. The success of the reclamation will be evaluated by undertaking a monitoring program. Fortune will work with the local residents and regulators to better define how reclamation will be judged. This conceptual closure will be updated during operations of the proposed mine to verify its alignment with the local cultural and traditional values and other relevant closure guidelines (such as Wek'eezhii Land and Water Board Draft closure guidelines). .... Lesson learned from other mines in the Northwest Territories will also be incorporated in the updated conceptual closure plan.
YKDFN_4.4 (b), YKDFN_4.5 (c)	The surfaces of the CDF will be actively re-vegetated by planting grasses through progressive reclamation. Areas will be allocated for seeding and re-vegetation once they become available.
YKDFN_4.7 (a)	The cover system will comprise 0.5 metres (m) of glacial till underlain by 0.25 m of sand on the top of the CDF, and 1 m of glacial till on the sloped perimeter dyke. The top surface of the closed CDF will be sloped at about 2%
YKDFN_4.7 (b), Commitment #15	Design a CDF performance monitoring program using instrumentation and on-going monitoring (e.g. lysimeters).
MVRB_1	The proposed configuration of the CDF (i.e., with thin layers of tailings interspersed between rock layers, and with a surrounding perimeter dyke constructed of rock) will both facilitate the consolidation of the tailings and provide an inherently stable structure
MVRB_2 (b)	All equipment leaving the CDF will be pressure washed prior to leaving the area.
Air Quality	
TG_31 (31.7)	Fortune will provide the Tłı̨chǫ Government with their annual report on environmental monitoring results, which will include air quality data.
TG_31 (31.1), TG31(31.4), YKDFN_3.2, Review of Meeting[h]	Fortune is committed to the following dust mitigation:
	• spraying water on haul roads to maintain sufficient surface moisture during summer months;
	• establishing and enforcing speed limits on unpaved surfaces to minimize dust from vehicle operations;
	• equipping construction equipment with upswept exhausts to enhance dispersion of exhaust;
	• equipping the fleet and other equipment with industry-standard emission control systems;
	• constructing the NICO Project Access Road as narrow as possible, while maintaining safe construction practices;
	• enclosing conveyance systems and processing facilities;
	• limiting the height from which material is dropped;
	• using high efficiency bag houses for point sources of releases;
	• watering ore stockpiles and the primary crusher;
	• re-vegetating the parts of the mine site that will not be disturbed in the future; and
	• controlling dumping or transfer rates of materials.
TG_31 (31.5), YKDFN_3.2	The measurement of the following compounds will be included in the proposed ambient air quality monitoring program:
	• total suspended particulate (TSP);
	• particulate matter with a mean aerodynamic diameter of 10 micrometres (PM10);
	• particulate matter with a mean aerodynamic diameter of 2.5 micrometres (PM2.5); and
	• dustfall.

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category (continued)

Document	Commitment Description
YKDFN_1.1, TG_31 (31.9), YKDFN_3.1, Commitment #4, RND2_EC 2_5	In regards to the air quality management plan, based on communication with Environment Canada (D. Fox, Environment Canada, 2010, pers. comm.) in May 2010, it was agreed that management plans for the NICO Project will be developed when the NICO Project progresses to the permitting stage. Fortune will develop and implement appropriate adaptive management plans that will include a systematic process to mitigate exceedances of emission standards, should they occur
YKDFN_3.1	Dioxin and furan emissions will comply with standards through the use of an incinerator designed to meet the standards outlined in Section 10.3.2.1 of the DAR. The waste incinerator, will be engineered and operated to meet the Canadian Council of Ministers of the Environment (CCME) emission standards for dioxins and furans (i.e., 80 pico-grams of International Toxic Quotients per cubic metre [pg I-TEQ/m^3]) (CCME 2001)
EC_10 (3)	Fortune will attempt to find a few other mines using this type of bag before the Technical Sessions.
EC_11 (3), Commitment #3	Fortune will consult with Environment Canada to develop a stack testing program and will conduct stack testing while burning sludge
Undertaking #14	Fortune is to review and report on its proposed NOX treatment methods for emission sources.
Commitment #1, RND2_YKDFN_1.1	The operational management of the incinerator will be directed by the Incineration Management Plan (IMP) that Fortune has committed to producing in due course. It will be developed consistent with the Environment Canada Technical Guidance Document on Batch Incineration and in cooperation with representatives from Environment and Natural Resources and Environment Canada. Those representatives are currently Ms. Aileen Stevens and Mr. Dave Fox, respectively. Testing the incinerator will be carried out under typical load conditions, including during the incineration of sewage sludge if it is ultimately decided that disposal of the sludge will be by incineration. It is expected that testing under these conditions would represent a worst-case scenario. In the event that the monitoring shows non-compliance with the standard, the pending IMP will direct an appropriate response. Also, as stated above, further details on the standard operating procedures, thresholds, and triggers for response to potentially unfavourable emissions releases will be developed during the regulatory phase of the application. The planning will be conducted consistent with the Environment Canada Technical Guidance Document on Batch Incineration and in cooperation with representatives from Environment and Natural Resources and Environment Canada
Post-Closure	
AANDC_10 (1)	This seepage water will be passively treated in constructed wetlands and then released directly into Nico Lake.
AANDC_10 (2)	If at that time the efficiency of the passive treatment system has been demonstrated, the active treatment system will be decommissioned. Development and testing of the constructed wetland system will be initiated during the operational years of the proposed mine.
AANDC_11	Conceptual design of the post-closure passive treatment options will take place prior to the detailed design stage of the NICO Project and will be submitted during water licensing. Field trials, based on actual site conditions and detailed from conceptual designs, will take place during mine operations. The detailed engineering design will be completed following scale-up of the field trial cells, using design criteria and operating parameters optimized from those trials.
Wildlife	
EC_2 (3)	Mitigation and monitoring will be similar to that practiced at other operating mines in the Northwest Territories. Any nests identified will be reported to Environment Canada, and efforts will be made to limit activity in the vicinity of the nest.
EC_3 (4), EC_3 (7), EC_3(5)	Monitoring will be undertaken to determine if waterbirds are using surface water ponds (all water management ponds or mine-related waterbodies that may attract waterbirds). If the exposure of waterbirds to high concentrations of harmful substances results in a risk to waterbirds in excess of the existing risk, then adaptive management will be undertaken as per the Environmental Management System, described in Subject of Note: Biophysical Environment Monitoring and Management Plans (Section 18)
EC_3 (6)	Should monitoring of the surface water management ponds indicate that water quality and the frequency of use by waterfowl (i.e., exposure levels) may result in health risks to birds that exceed existing levels, adaptive management will be undertaken as per the Environmental Management System.
EC_8 (3)	All of the monitoring stations would be sited in accordance with a slightly modified version of the Alberta Monitoring Directive. The Alberta Monitoring Directive will be modified to include consideration of site accessibility and electrical service accessibility. The program will also be designed to be responsive to changing conditions and monitoring results. The detailed siting assessment will be conducted in consultation with Environment Canada and the Northwest Territories Department of Environment and Natural Resources.
Undertaking #3	Fortune is to indicate the significance of potential adverse environmental effects on overall abundance and distribution of the Bathurst caribou populations including each of the five primary pathways for incremental and cumulative effects on abundance and distribution of the Bathurst caribou population and related effects to people (physical footprint, sensory effects, change in energetic costs from disturbance and displacement, improved access for harvesting, effects on population size and distribution).
Undertaking #4	Fortune is to calculate the level of disturbance and create a disturbance map showing the predicted level of habitat disturbance, including buffer zones, that the proposed NICO Project may have on the boreal caribou ranges (as identified in the Recovery Strategy for the Woodland Caribou, Boreal Population, in Canada - 2011). This should include the proposed mine footprint, the existing winter road, the proposed over-land road route and other cumulative effects as a function of existing boreal caribou habitat disturbance.
Undertaking #5	Fortune is to provide a more detailed assessment of the direct and indirect impacts of the NICO Project on SARA listed upland breeding birds (i.e. common nighthawk, olive-sided fly catcher, and rusty blackbird) and upland breeding bird habitat based on their distribution in the regional study area and the proposed mine footprint.

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category (continued)

Document	Commitment Description
Commitment #7, Report of Meeting between Golder and YKDFN[g]	Further discuss habitat suitability modelling with the Yellowknives Dene First Nation. Fortune committed to providing an analysis of the level(s) of development above and below treeline and within the annual range of the Bathurst caribou along with clear criteria for project inclusion and the dates of data compilation. Any re-analysis will consider the reasonably foreseeable future projects suggested by the Yellowknives Dene First Nation in Information Request YKDFN-2.3.
Commitment #8	Conduct post-closure caribou monitoring
Commitment #9	Re-examine caribou assessment endpoints and refine management plans using Tłı̨chǫ based values on the Tłı̨chǫ traditional knowledge study is complete.
Report of Meeting between Golder and YKDFN[g]	Fortune will provide maps showing collared caribou locations in reference to the proposed NPAR for the period from 1996 through 2010.
Water Quality and Aquatic Resources	
EC_3 (3)	Thresholds will be developed according to the principles and approach outlined in the Water and Effluent Quality Management Policy (MVLWB 2011), and will be identified in permitting phase.
Commitment #10	Carry out additional zooplankton and phytoplankton baseline sampling as a 2011 spring/summer/fall program which will allow for the inclusion of the results into the Aquatic Effects Monitoring Program. Fortune will provide an outline of its proposed sampling plan for Parties' review and comment prior to final sampling design.
Commitment #11	Further discuss the determination of site water quality objectives and significance of water quality impacts in relation to the Tłı̨chǫ Agreement with the Tłı̨chǫ Government.
Commitment #14	Active treatment of water from the open pit after operations if wetland treatment results are not acceptable.
Commitment #17	Ensure sufficient funds are in place to guarantee acceptable water quality based on all foreseeable eventualities after mine closure.
Commitment #13	Develop a formal surveillance program for mine operations.
RND2_EC_2-1	Additional work will be done to continue to refine site-specific water quality objectives and develop effluent quality criteria (EQCs) as part of the water license permitting process. These objectives and EQCs will take into account ambient conditions, including characteristics of Peanut Lake (e.g., volume and variability in flow rates and residence time) that may limit achievable levels of mixing within Peanut Lake, and reasonably achievable effluent quality and source predictions
Review of Meeting[h]	Provide a breakout of the annual loading from various project-related sources to Nico, Peanut, and Burke lakes. These include: effluent from the diffuser, dust, and seepage from the site.
Update on Receiving Water Quality Predictions[e]	Follow-up monitoring will be used when operations commence to assess whether effects are occurring and to track the uncertainties of projections. Fortune is committed to undertaking regular monitoring and follow-up testing or water quality and aquatic health during the NICO Project.
Geochemical	
NRCan_1-1 (11, i), RND2_TG_18 (18.2)	A monitoring plan will be developed during operation, once approvals are received to proceed with mine development. Mine rock contact water quality will be assessed as part of the environmental monitoring program for the NICO Project, as described in Section 3.I.8 of the Mine Rock Management Plan (Appendix 3.I of the DAR). It is anticipated that the requirements for water quality monitoring will be defined as part of the permitting process. This monitoring plan is expected to include the following options:
	• testing for ARD potential; and
	• testing to characterize the Type of mine rock
NRCan_1-1 (11, iii)	The geochemical criteria developed to classify the rocks will be confirmed prior to their use during operations
NRCan_1-5 (i)	Fortune will complete geotechnical investigations once the final road route has been approved by the Tłı̨chǫ Government.
NRCan_1-5 (iv)	Fortune will develop a geotechnical investigation study that will meet the requirements for the detailed design of the road once the final route for the road has been chosen. This plan will be shared with the Tłı̨chǫ Government and regulatory authorities once completed to ensure it meets the necessary standards
NRCan_1-11 (i)	The upcoming 2011 report will provide an overview of stability assessments for the pit shell shown in the Developer's Assessment Report (DAR) and the revised underground workings
Commitment #2	Provide a memo to follow-up on discussions between itself and Natural Resources Canada regarding the classification of rock types using calcium neutralization potential, acid generation potential, and total sulphur content calculations.
RND2_TG_16	Ongoing monitoring will be completed during operations to determine if thiosalts are being formed.
RND2_TG_19 (19.4)	It is expected that Fortune will factor in the potential worst cast seepage quality scenario by considering the available geochemical results to determine possible worst case conditions (Annex A of the Developer's Assessment Report) and will consider water quality predictions as provided in Appendix 7.II and monitoring data collected over the life of mine.
Sedimentation	
DFO_3	Best management practices for erosion and sediment control will be employed through the design, procedural planning, and construction of project components (TAC 2005). Measures taken to limit sedimentation and erosion will be specific to the NICO Project component, as well as the associated flow quantity and velocity, soil characteristics, topography, climate, and season of construction. In this response, potential sediment and erosion control measures discussed will be limited to those planned for the installation of the Peanut Lake Diffuser, the water intake at Lou Lake, and all watercourse crossings along roadways. The intake itself will be screened according to Department of Fisheries and Oceans (DFO) Guidelines (DFO 1995).

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category (continued)

Document	Commitment Description
Water Intake and Diffuser	
DFO_5, TC_3 (i)	The design of the freshwater intake pipe to be constructed at Lou Lake will consider recommendations and input from Fisheries and Oceans Canada. The design will include the installation of a fish screen for the protection of resident fish in Lou Lake and will follow the specifications in "Freshwater Intake End-of-Pipe Fish Screen Guidelines" (Fisheries and Oceans 1995). Fortune commits to using appropriate sediment control measures (i.e., cofferdams) in Lou and Peanut lakes during installation of the water intake and diffuser.
RND2_EC_2-4	Fortune will continue to look for economically feasible opportunities to further improve design and mitigation throughout the detailed design phase of the NICO Project. Fortune will work with regulators and stakeholders during the water licensing phase to come to an agreement on an appropriate mixing zone that would apply to the Effluent Treatment Facility discharge to Peanut Lake.
Review of Meeting[h]	Provide a recommendation for a mixing zone. Although this is discussed in general terms in the water quality key line of inquiry, Appendix 7.IV, a specific demonstrable point of assessment is necessary.
Reverse Osmosis	
Undertaking #1	Fortune is to provide a model and summary of the waste streams generated from the reverse osmosis effluent treatment facility, including all water quality, sediment quality and biotic effects. The information provided should include a discussion about where the waste streams travel, how they will be treated, final performance predictions, and downstream effects. Fortune should also include a discussion about the processing of the brine, management of the post□processed brine, water flow, and how it will be handling the precipitates from the brine process.
Undertaking #2	Fortune is to indicate if it has any Eco-toxicological information with respect to the flotation agents used in the milling process, including the anticipated rates of removal and concentrations expected in the effluent.
Undertaking Response Clarification[d]	The results of the water quality model under the RO will be available on April 13, 2012.
Economics	
Undertaking #12	Fortune is to indicate at what commodity prices the viability of the NICO Project would become in question, including an analysis of the cutoff line for metal prices where the NICO Project might experience a potential temporary shutdown or closure.
GNWT_5 (1)	• Fortune will collect and publicly report annually on training, employment, and business spending information. • Fortune will collect and publicly report annually on hiring by hiring priority and job category in total numbers and percentage of total hires;
	• Fortune will collect and publicly report annually on hiring by Northwest Territories (NWT) community in total numbers and percentage of total hires;
	• Fortune will collect and publicly report annually on total employment in person years by hiring priority and job category in total numbers and percentage of the workforce;
	• Fortune will collect and publicly report annually on total employment in person years by NWT community in total numbers and percentage of the workforce;
	• Fortune will collect and publicly report annually on total number of NWT resident employees who resigned or who were laid off, fired, or otherwise terminated in the previous year;
	• Fortune will collect and publicly report annually on participation in and results of training activities;
	• Fortune will collect and publicly report annually on the gross value of goods and services purchased during the calendar year by major category of purchase in relation to each phase of the NICO Project. ('Purchases' based on the gross value of all purchases of goods and services including both goods and services produced in the NWT and goods and services produced outside the NWT that are purchased through NWT Businesses); and
	• Fortune will collect and publicly report annually on business forecast and assessment for the upcoming year.
GNWT_5 (2)	Fortune will establish the above listed measurements as key performance indicators that will be tracked through human resources and supply chain personnel at site.
GNWT_11 (5)	There will be on-going dialogue with the communities and local and regional businesses well in advance of the scheduled closure. A team will be engaged in identifying the negative effects and engaged in seeking solutions to mitigate these effects. During the life of the mine, Fortune will make every effort to support businesses that are suppliers to Fortune and help them diversify their customer base in order that they are not as significantly impacted when Fortune ceases operations. Fortune will make every effort to find alternative sources of business for any local and regional businesses, where possible, and make referrals to other companies on behalf of any of the impacted businesses. Fortune will assist and support any business with business and financial advice to help further develop their businesses in any other areas. The impact on most of the smaller communities will be the loss of disposable income from wages that would have been in the community. Fortune will work with the communities to assist in leveraging any other projects that might be in development.
Socio-Economic Meeting Report[c]	GNWT and Fortune Minerals will set up a meeting prior to the public hearing to discuss all outstanding socio economic concerns. Minutes from this meeting will be provided to the Review Board.
Socio-Economic Meeting Report[c]	Fortune committed to provide GNWT with further information regarding total estimated procurement from NWT-based companies for the closure and reclamation phase and total estimated procurement from NWT-based Aboriginal companies for each phase of the development.
Commitment #29	Meet with the GNWT finance department to go over some of the financial and economic numbers that underscore its model. This will allow for a better estimate of the net fiscal position of the potential operations to the GNWT.

Table 1-2: Post-Developer's Assessment Submission: Summary of Commitments by Category (continued)

Document	Commitment Description
Traditional Knowledge	
Undertaking #13	Fortune is to identify whether it has included any questions relating to the loss of use or areas of avoidance by harvesters in their traditional knowledge study, including any questions about the psychosocial impacts associated with perceived contamination in the vicinity of the proposed mine site as a result of the NICO Project.
Undertaking #13 (response)	When the results of the studies become available, Fortune will discuss any identified potential effects of the NICO Project with the Tłı̨chǫ Government, and any reasonable mitigation or avoidance measures. Similarly, Fortune is supporting the North Slave Métis Alliance in their Traditional Knowledge and Traditional Land Use studies for the NICO Project. When the results of the studies become available, Fortune will discuss any identified potential effects of the NICO Project, and any reasonable mitigation or avoidance measures.
Commitment #6	Review the traditional knowledge monitoring program as put forward by the Wek'èezhìi Renewable Resources Board in 2010 for a TK monitoring program that complements its science monitoring program and discuss further with the Tłı̨chǫ Government.
Commitment #31	Incorporate traditional knowledge into monitoring programs at the NICO Project.
Construction	
TC_3 (iii)	Fortune will provide Transport Canada with the exact location of the cofferdams once construction details have been confirmed with the contractor.
TC_3 (iv)	Transport Canada will be notified as to the timing of construction prior to initiation.
Response to Additional Information Requests[b]	For the Marian River, a single clear-span bridge will be installed in accordance with DFO's Operational Statement for such structures.

Sources:

[a] Fortune (Fortune Minerals Limited). 2011. Memorandum: NICO Project (EA0809-004) Update for the Developer's Assessment Report. Submitted to Mackenzie Valley Review Board. 30 September 2011.

[b] Golder (Golder Associates Ltd.). 2012. Memorandum: Response to Additional Information Requests NICO Developer's Assessment Report. Submitted to Fisheries and Oceans Canada. 10 January 2012.

[c] GNWT (Government of the Northwest Territories). 2012. Memorandum: EA0809-004, NICO Project, Fortune Minerals Limited – GNWT and Fortune Minerals Socio-economic Meeting Report, February 8, 2012. Submitted to Mackenzie Valley Review Board. 20 February 2012.

[d] Fortune. 2012. Memorandum: Undertaking Response Clarification for the NICO Project File EA0809-004. Submitted to Mackenzie Valley Environment Impact Review Board. 29 February 2012.

[e] Golder. 2012. Technical Memorandum: NICO Project: Update on Receiving Water Quality Predictions for the Operations Period with Revised Effluent Treatment Facility Discharge Quality. Submitted to Fortune Minerals Limited. 13 April 2012.

[f] Golder. 2012. Technical Memorandum: NICO Cobalt-Gold-Bismuth-Copper Project: Incorporation of Water Quality Predictions for Reverse Osmosis Water Treatment Option into Human Health and Ecological Risk Assessments. Submitted to Fortune Minerals Limited. 13 April 2012.

[g] Golder. 2012. Memorandum: Report of Meeting Between Golder Associates (Representing Fortune Minerals Limited) and the Yellowknives Dene First Nation, NICO Project. Submitted to Mackenzie Valley Review Board. Dated 27 February 2012, Submitted 23 April 2012.

[h] Golder. 2012. Meeting Report – Updated Receiving Water Quality Predictions, Site-specific Water Quality Objectives, and Aquatic Risk Assessment. Submitted to Mackenzie Valley Review Board. 5 June 2012.

[i] Fortune. 2012. Response to Informal Information Requests from Aboriginal Affairs and Northern Development Canada. Submitted to Mackenzie Valley Review Board. 7 June 2012.

Table 1-3: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Public Hearings – August and October 2012

Document	Commitment Description
27 August 2012 - Transcripts	
p.43, line 21 to 23	Committed to continued consultation with both people in the area and the Tłı̨chǫ Government
p.52, line 25 & p.53, lines 1 to 2	There's a commitment from Fortune Minerals that active on-site dust mitigation is planned.
p.64, lines 7 to 11	Fortune Minerals committed to actively filling the open pit in order to reach its final closure condition earlier than 120 years. This would take approximately 12 years, and the water would come from the Marian River.
p.67, lines 12 to 18	Fortune Minerals is committed to involving Tłı̨chǫ people in the determination of the vegetation cover on the CDF, and also for the infrastructure components where it needs to be re-vegetated. Fortune Minerals fully expects that traditional knowledge would be incorporated into the closure planning as the NICO projects moves into operation.
28 August 2012 – Transcripts	
p.49, lines 7 to 10	Fortune Minerals is committed to ongoing mitigation and monitoring of air emissions associated with the emissions from the site and dust generation.
p.75, lines 20 to 25	Commitments to work with the Tłı̨chǫ people and other interested parties in the development and implementation of Fortune Minerals aquatic effects monitoring plan, wildlife effects monitoring plan, and closure plan which will be revisited every five (5) years.
p.239, lines 2 to 6	Fortune Minerals agreed with NRCan recommendations regarding stability analysis and committed to further geo-technical investigations to refine seepage stability analysis and to support detailed final design.
p. 285, lines 14 to 16	If the North Slave Metis are interested in participating in specific working groups, Fortune Minerals will ask them to participate.
p. 292, lines 20 to 23	The Air Quality Monitoring Program will be developed in consultation with ENR and EC, which Fortune Minerals has already committed to.
p.299, line 25 & p. 300 lines 1 and 2	Fortune Minerals did commit to post-commissioning stack testing in IR response EC-11 (3), commitment number 3.
30 August 2012 - Transcripts	
p.47, 3 to 5	Fortune Minerals stands behind its commitments and will work the with Tłı̨chǫ people to resolve any outstanding issues.
p.48, lines 6 to 13	Fortune Minerals has always worked hard with the Tłı̨chǫ government to build strong relationships with the Tłı̨chǫ people. Fortune also has been working cooperatively with the Tłı̨chǫ companies to provide partnering and contracting opportunities and have offered an open door policy to complete impact and benefits agreements. This is a continuous standing offer and Fortune Minerals commitment to the Tłı̨chǫ people.
p.142, lines 1 to 11	Fortune Minerals reaffirmed the commitment made to the Tłı̨chǫ Government in the technical meetings in February, that the closure of the public registry does not mean the closure of Fortune Minerals use of the traditional knowledge information. Fortune Minerals made the commitment to use that information as much as possible on the development of such plans as the wildlife effects monitoring plan, the aquatic effects monitoring plan, and the overall development and operation of the mine.
p.164, lines 3 to 6	Fortune Minerals will provide continuous updates on the NICO project through direct participation, and regular communication through annual reports, site visits, and public information sessions.
p.164, lines 14 to 21	Environmental monitors will document the presence of caribou near the construction areas, near the work areas, and summarize observations of caribou, communicate this information to managers, and carry out mitigation as necessary to reduce risks to wildlife. Further, the movement of collared caribou will be monitored to provide an indication of approaching caribou to the Nico project.
p.164, lines 22 to 25	Means of monitoring caribou presence along the Nico project access road will be discussed with the Wek'eezhi Renewable Resources Board, and the Tłı̨chǫ government, and other interested parties.
p.165, lines 2 to 6	Fortune Minerals is committed to working with the Tłı̨chǫ government and the Wek'eezhi Renewable Resources Board to develop this monitoring plan, to implement this monitoring plan, and to incorporate traditional knowledge.
p.165, lines 24 to 25 & p.166, lines 1 to 8	Fortune Minerals is committing to implement onsite monitoring, onsite education, including orientation for all site personnel, contractors and visitors. Staff will be reminded of the policy that wildlife have the right of way at NICO. They will be reminded of all strategies employed to reduce employee wildlife interactions. There will be a no hunting policy at the site. Staff will be reminded of the waste management policies and the prohibition on feeding wildlife.
p.166, lines 13 to 14	Fortune Minerals is committed to adhering to the Waste Management Plan
p.180, lines 2 to 8	Fortune Minerals has committed to a workshop, and has committed to work cooperatively with the GNWT and other co-management partners, such as the Wek'eezhii Renewable Resources Board, in the development of that plan (WEMP). Fortune Minerals feels that is sufficient at this time to move forward with our commitment to develop this plan.
p.182, lines 4 to 5 (committed to throughout Hearings)	Fortune Minerals has committed to the Tłı̨chǫ people and the GNWT to develop a wildlife effects monitoring plan, and will include monitoring of caribou throughout the construction, operation, and closure phases of the Nico project.
31 August 2012 - Transcripts	
p.22, lines 10 to 16	Fortune Minerals made the commitment to revisit the closure plan every five (5) years, because as Fortune Minerals has learned from other mining projects, things change, and there's always a need to go back and revisit the closure plan and revisit your plans and update things, and Fortune Minerals thinks that's the most efficient means of getting things done.
p.31, lines 6 to 12	Fortune Minerals will be building the wetland treatment system for the CDF early in operations to demonstrate the technology throughout operations and into closure.
p.40, lines 10 to 12	Fortune Minerals is willing to commit to a review of the closure plan every three (3) years instead of the five (5) year review proposed.
p.52, line 6 to 9	Fortune Minerals will be reporting on the performance of the wetland treatment system to the Tłı̨chǫ people.

Table 1-3: Summary of Commitments Made by Fortune Minerals Limited in the NICO Project Public Hearings – August and October 2012 (continued)

Document	Commitment Description
p.52, lines 21 to 23	Fortune Minerals committed to waste rock monitoring and sampling programs.
11 October 2012 – Transcripts	
p.284, line 25 & p.285, lines 1 to 4	Fortune Minerals recognizes that these fears are real to the Tłı̨chǫ people and has committed to work with the Tłı̨chǫ Government to inform people on how mining has changed and how there are numerous layers of regulatory safeguards in place to protect the environment.
p.286, lines 6 to 9	Fortune Minerals has committed to use the results of the Tłı̨chǫ TK study in the development of monitoring plans and the mitigation of potential impacts, where feasible.
p.293, lines 18 to 23	Fortune Minerals is committed to building capacity within the Tłı̨chǫ communities through work opportunities, training opportunities, and contract opportunities. Fortune Minerals is open to designing shift schedules and work opportunities that aren't available at other mines.
12 October 2012 - Transcripts	
p.53, lines 21 to 25 & p.54, line 1	Developer is committed to discuss opportunities for offsite habitat compensation with parties in the development of the WEMP
p.194, lines 9 to 12	Fortune Minerals re-stated the commitment to working with the Tłı̨chǫ government to potentially mitigate any sites that they could identify.
p.202, lines 2 to 6	Fortune Minerals re-stated the commitment to work with the Tłı̨chǫ government to help educate people in terms of what are the real risks out there and address some of the perceived risks from previous experiences with mining.
p.210, lines 22 to 25	Fortune Minerals agreed to explore if there's alternatives to the tower with the red flashing light
p.211, lines 1 to 5	Fortune Minerals committed to meeting with Tłı̨chǫ government to discuss other communication infrastructure

APPENDIX II

Response to Comments From Tłı̨chǫ Government's Closing Arguments on the Proposed Mine Rock Classification Criteria for the NICO Project

TECHNICAL MEMORANDUM

DATE October 19, 2012 **PROJECT No.** 11 1118 0066 2000

TO Rick Schryer
Fortune Minerals Limited

CC

FROM Kristin Salzsauler and Ken DeVos **EMAIL** ksalzsauler@golder.com

RESPONSE TO THE DOCUMENT TITLED *TLICHO GOVERNMENT CLOSING ARGUMENT ON THE PROPOSED FORTUNE MINERALS NICO PROJECT* AND DATED OCTOBER 17, 2012

1.0 INTRODUCTION

A preliminary Mine Rock Management Plan (MRMP) was developed as part of the Fortune Minerals Limited Developer's Assessment Report (DAR) for the NICO Cobalt-Gold-Copper-Bismuth Project (Project). The MRMP is Appendix 3.I of the DAR. The proposed mine rock management criteria in the MRMP are based on the results of geochemical characterization of mine rock, which are presented in Annex A of the DAR.

Comments regarding the proposed sulphide-sulphur criterion presented in the MRMP were presented in the document titled *Tlicho Government Closing Argument on the proposed Fortune Minerals NICO Project*, dated October 17, 2012 ("Closing Arguments"). This memorandum presents further clarification to the comments in the Closing Arguments, and suggestions for a path forward.

2.0 PROPOSED MINE ROCK MANAGEMENT CRITERIA FOR THE NICO PROJECT

The preliminary MRMP for the Project recommends mine rock classification criteria based on sulphide-sulphur content, arsenic content and bismuth content (Table 1).

Table 1: Proposed mine rock classification criteria for the NICO Project.

Classification	Criteria	Description
Type 1	< 0.3 % sulphide sulphur < 50 ppm bismuth low arsenic leaching potential	Rock with a low potential for acid generation and metal leaching to be used for construction of surge pond dams, seepage collection pond dams, roads, rock pads and lay down areas.
Type 2	< 0.3% sulphide sulphur < 1000 ppm arsenic	Rock with a low potential for acid generation, to be used for construction of perimeter dykes within the CDF.
Type 3	> 0.3% sulphide sulphur > 50 ppm bismuth > 1000 ppm arsenic	Potentially acid generating and metal leaching rock, to be contained within the CDF. For the purposes of preliminary planning, Type 3 rock should be placed with a minimum 20m offset from the exterior of the perimeter embankments of the CDF.

The rationale for the proposed criteria is discussed in Attachment 1 of the MRMP. The results of static tests, including acid base accounting (ABA) and net acid generation (NAG) testing, were used to develop the sulphide-sulphur criterion. The decision making process was supplemented using the results of kinetic testing, (i.e., humidity cell tests (HCT)). Field scale leaching tests were constructed at the Project site in 2008 to evaluate the

geochemical reactivity of mine rock in site specific conditions. The results of monitoring of these field tests will be used to qualify the proposed sulphide-sulphur criterion.

3.0 RESPONSE TO CLOSING ARGUMENTS

Discussion in the Closing Arguments contends that the geochemical dataset does not support the proposed sulphide-sulphur criterion of 0.3% in three discussion points:

1) Sample numbers and adequacy

2) Humidity cell data support the 0.3% cutoff

3) NP availability to neutralize acidity

The following sections provide feedback specific to each issue raised in the Closing Arguments.

3.1 Sample Numbers and Adequacy

Closing Arguments Perspective:

"Fortune Minerals contends that no rock samples below 0.3% sulphur produced acidity. This statement is hard to justify given that only 3 samples were Net Acid Generation (NAG) tested and all samples contained less than 0.05% sulphur and had Acid Neutralization Potential (NP) / Acid Generation Potential (AP) ratios of >7.0. It is inexplicable why the proponent chose to test only three samples, especially samples with virtually no sulphur and very high NP/AP ratios. These samples were almost certain to produce non-acid conditions in a NAG test."

Golder Response:

A total of 231 samples in the geochemistry dataset were submitted for ABA and 42 samples for NAG testing. In addition, 62 samples in the resource block model dataset were submitted for sulphide-sulphur analysis. Thus, in total, sulphide-sulphur concentrations were available for 293 samples. Table 2 summarizes the interpreted acid generation potential of mine rock samples by rock type according to common methods of interpreting the results of ABA and NAG testing (Price, 1997; MEND, 2009).

Of the 293 samples submitted for sulphide sulphur analysis, 237 samples contained less than 0.3% sulphide-sulphur, and 56 contained greater than 0.3% sulphide-sulphur. Of key interest are samples that have sulphide-sulphur concentrations close to the proposed criterion of 0.3%: a total of 80 samples contain between 0.1 and 0.5% sulphide sulphur. The distribution of sulphide-sulphur concentrations in the geochemistry dataset is presented in Figure 1. The average sulphide-sulphur concentration in the ABA dataset is 0.17%, and the median concentration 0.04%. Sulphide-sulphur concentrations are well-distributed within the ABA sample dataset.

Table 2: Summary of Acid Generation Potential of Mine Rock Samples

		Sulphide-Sulphur			NAG-pH			NP:AP		
	Criteria	**n**	**<0.3%**	**> 0.3%**	**n**	**>4.5**	**<4.5**	**n**	**>2**	**<2**
Interpretation[a]			**Non-PAG**	**PAG**		**Non-PAG**	**PAG**		**Non-PAG**	**PAG**
Rock Type[b]	**Dataset[c]**									
FAP	Geochemistry	35	100%		4	100%		35	97%	3%
	Resource Block Model	5	80%	20%						
QAP	Geochemistry	2	100%		1	100%		2	100%	
	Resource Block Model	2	100%							
Rhyolite	Geochemistry	35	91%	9%	2	100%		35	74%	26%
	Resource Block Model	6	67%	33%						
Siltstone	Geochemistry	18	100%					18	100%	
	Resource Block Model	10	100%							
Wacke / BRS	Geochemistry	99	82%	18%	16	44%	56%	99	77%	23%
	Resource Block Model	31	81%	19%						
Breccia	Geochemistry	10	80%	20%				10	90%	10%
Ore[d]	Geochemistry	32	41%	59%	19		100%	32	25%	72%
	Resource Block Model	8	38%	63%						
Total		293	237	56	42	14	28	231	173	57
			81%	19%		33%	67%		75%	25%

[a] Classification based on recommendations in Price (1997) and MEND (2009)

[b] Dominant rock type in sample interval

[c] Geochemistry dataset summarized in the Geochemistry Report (Annex A of the DAR) . Resource Block Model dataset provided by P&E Mining Consultants, 19 April 2010

[d] Includes samples of various lithologies.

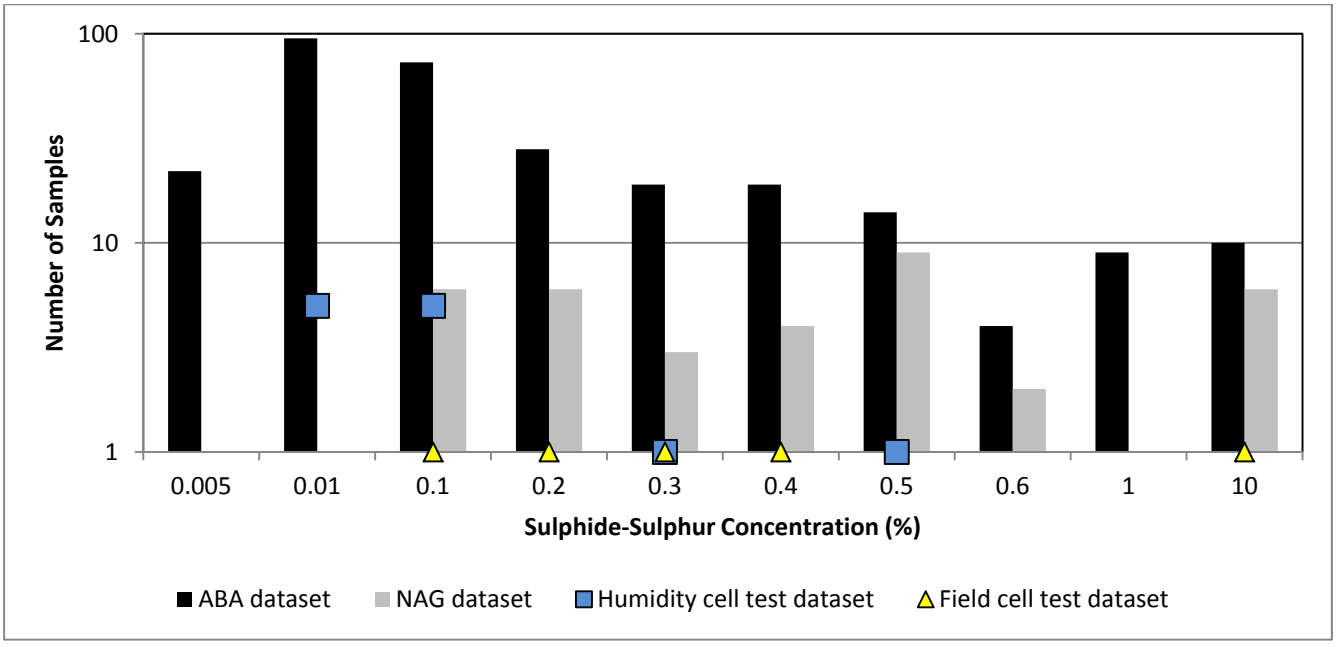

Figure 1: Distribution of the sulphide-sulphur concentrations in the Acid Base Accounting (ABA), Net Acid Generation (NAG) testing, Humidity Cell Testing (HCT) and Field Cell Testing datasets.

A total of 42 samples underwent NAG testing, of which 14 samples had NAG-pH values greater than 4.5, and 28 samples had NAG-pH values less than 4.5. A total of 37 of the 42 samples in the NAG testing dataset underwent sulphide-sulphur analysis. Figure 1 also presents the sulphide-sulphur distribution of samples specifically in the NAG dataset. The median sulphide-sulphur concentration of samples in the NAG testing dataset of 0.34% is higher than the overall dataset. Samples submitted for NAG testing were typically collected from piles of mine rock that were excavated from the bulk sample tunnel. This material was more mineralized than most mine rock. Regardless, great care was taken to select samples for NAG testing that had a range of sulphide-sulphur concentrations, based on laboratory testing and visual sample observations, as demonstrated in Figure 1.

The Closing Arguments' claim that no samples with sulphide-sulphur concentrations between 0.04% and 0.3% underwent NAG testing is unsubstantiated. As per the data presented in Annex A of the DAR, 16 of the 37 samples in the NAG testing dataset contained less than 0.3% sulphide-sulphur. Out of the 37 samples, 22 samples had sulphide-sulphur concentrations between 0.1 and 0.5%.

Figure 2 presents the sulphide-sulphur concentration relative to the NAG-pH of samples submitted for NAG-testing. The data presented in Figure 2 clearly demonstrate that samples that contain greater than 0.3% sulphide-sulphur have NAG-pH values less than 4.5.

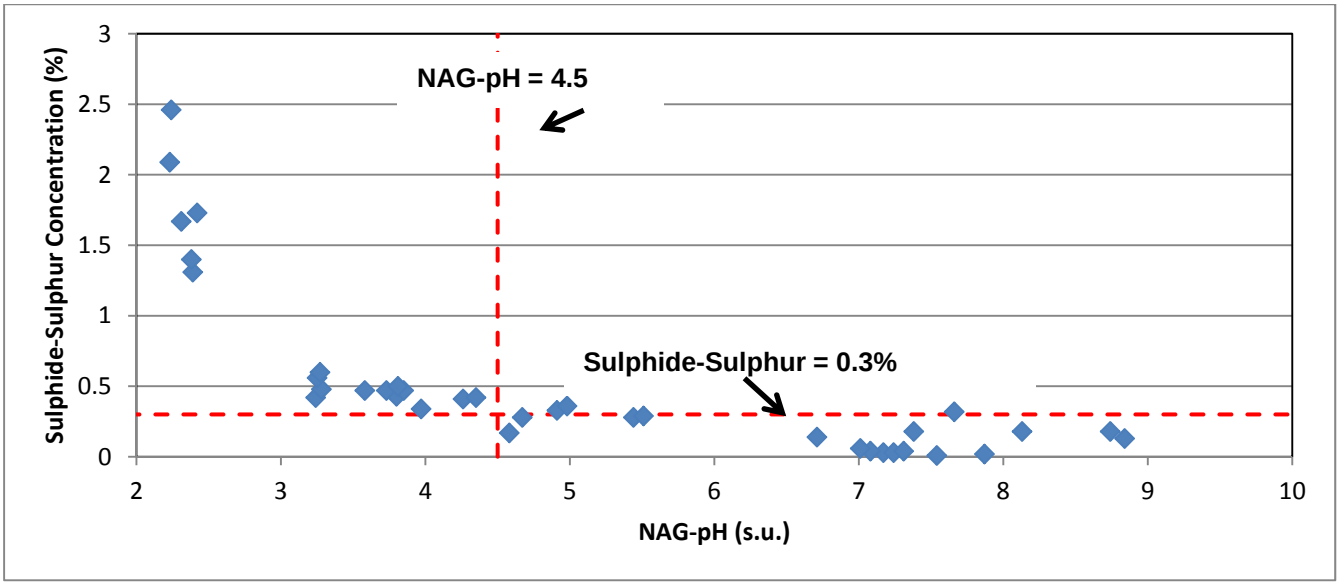

Figure 2: NAG-pH values as a function of sulphide-sulphur concentrations

The geochemical characterization program was developed iteratively in response to changes in the Project and changes in the "state of the art" with respect to geochemical testing. The key guidance document when the geochemical characterization program was initiated in 2004 was the *"Draft guidelines and recommended methods for the prediction of metal leaching and acid rock drainage at minesites in British Columbia."* (Price, 1997). When the supplemental mine rock sample program was initiated in 2008, NAG testing was considered a more mainstream method rapidly confirming the acid generation potential of a sample. The more recent geochemical characterization guidance documents *"Prediction manual for drainage chemistry from sulphidic geologic materials. MEND Report 1.20.1."* (MEND, 2009) and *"Global acid rock drainage guide (GARD Guide)"* (INAP, 2009) recommend NAG testing. The majority of the samples in the geochemical testing dataset were collected in 2004, thus the NAG testing dataset is not as comprehensive as the ABA testing dataset. The addition of the NAG testing dataset demonstrates a commitment to ongoing geochemical characterization using up-to-date methods of laboratory testing.

3.2 Humidity Cell Data Support the 0.3% Cutoff

Closing Arguments Perspective:

"There is limited data from humidity cells and results are summarized in Table 5-15 of Annex A to the Developer's Assessment Report – Geochemical Characterization of Waste Rock, Ore and Tailings. As shown on the Table, 12 samples were tested. One sample contained 0.27% sulphur and one sample 0.49% sulphur. Both samples at 0.27% and 0.49% sulphur generated acid during the test. Of the remaining samples, one sample at 0.04% sulphur was projected to produce a small amount of acid (i.e., this sample is net acid generating based on this test)."

Golder Response:

The objective of the kinetic testing program initiated in 2004 was to establish the long-term acid generation and metal leaching potential of "typical" samples of mine rock collected from the Project. Humidity cell tests (HCT) provide important information about the rate of reaction of mine materials in a laboratory setting. The samples selected for HCT reflected the characteristics of the mine rock dataset collected in 2004. Figure 1 presents the

sulphide-sulphur content of samples selected for humidity cell testing, relative to the ABA and NAG testing datasets.

The HCT dataset is limited in scope relative to the ABA and NAG dataset. Additional kinetic testing was initiated in 2008; however, these tests were constructed at a field-scale rather than a laboratory scale in order to gain insight to the rates of reaction in site specific conditions as is recommended in INAP (2009). Figure 1 also includes the sulphide-sulphur concentration of samples that are currently undergoing field-scale testing. As demonstrated in Figure 1, the sulphide-sulphur content of HCT and field cell testing samples represents the range of sulphide sulphur concentrations in the more extensive ABA and NAG testing datasets.

The HCT results were not the main dataset used to establish the sulphide-sulphur criterion. The results of kinetic testing were used to support the sulphide-sulphur criterion decision making process with respect to material reaction rates and long-term acid generation potential. The NAG dataset was used define the final, or “terminal”, acid generation potential of samples of each rock type. During the NAG test, hydrogen peroxide is used to promote the complete oxidation of sulphide minerals in a sample. Thus, the results of NAG testing provide a much more conservative approximation of acid generation potential than a kinetic test. Furthermore, the NAG test follows a relatively simple methodology that can be completed in a short time frame (typically less than 24 hours), making it a favourable potential method for operational Mine Rock classification.

Only two samples in the HCT dataset generated acidic pH leachate. Sample 100932 was rhyolite that contained 0.49% sulphide-sulphur and no measurable neutralization potential. Acidic leachate pH values were generated from the onset of the test. Sample 100907 was black rock schist that generally maintained a pH between 6 and 7, with 9 measurements of leachate pH less than 6 during the 169 week test duration. Figure 3 presents concentration trends for three parameters that can be used to evaluate the occurrence of sulphide oxidation: pH, sulphate and iron. For comparison, concentration trends are also presented for two low sulphide black rock schist samples: 100802 and 100977.

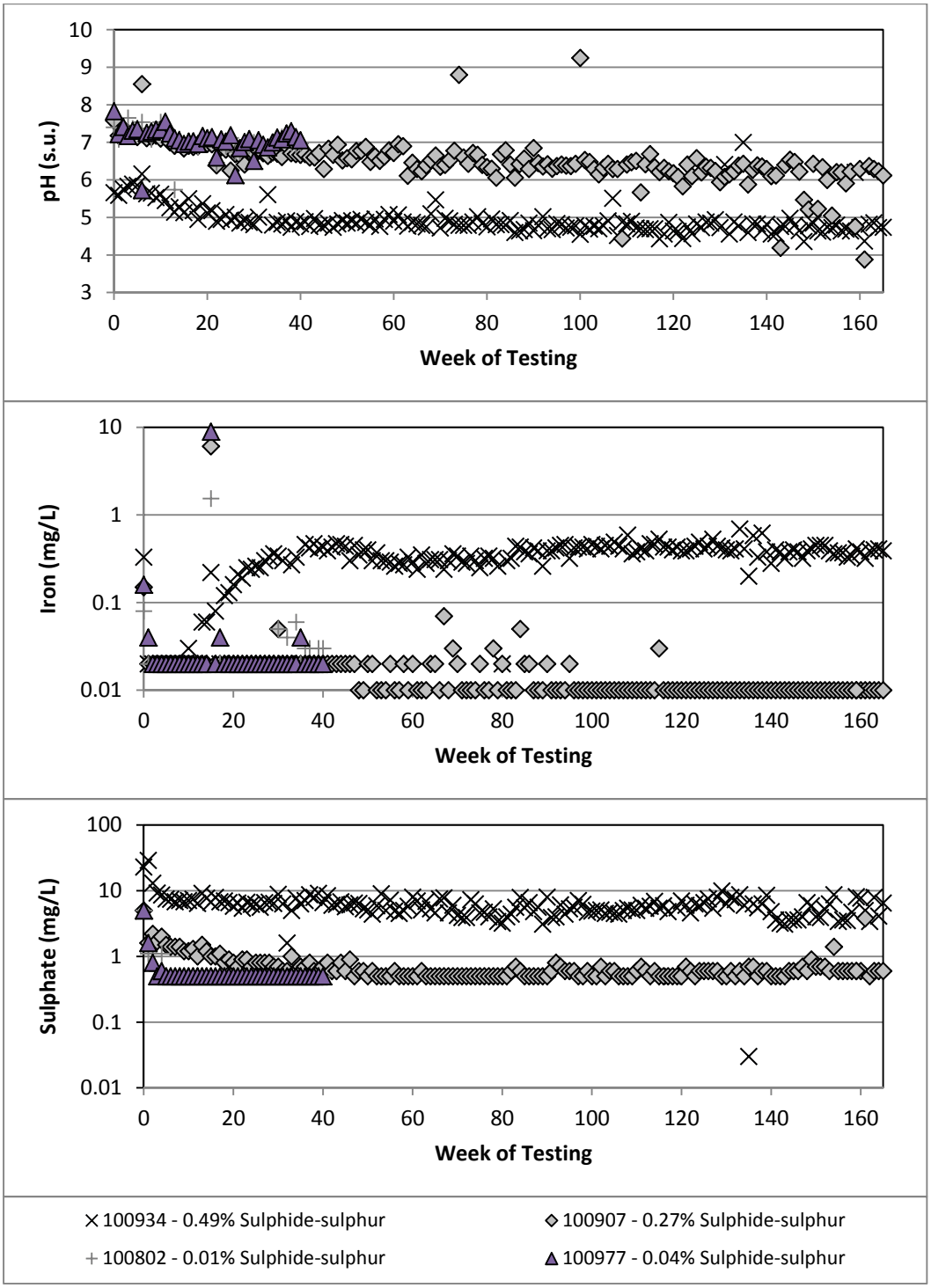

Figure 3: Humidity cell test concentration trends for pH, sulphate and iron

As evident in Figure 3, the geochemical characteristics of the higher sulphide rhyolite sample (100932) are different than those of the black rock schist samples. Higher iron and sulphate concentrations are maintained in this kinetic test than the black rock schist kinetic tests. This could be a function of the elevated sulphide mineral content in sample 100932 relative to the black rock schist samples. It is also possible that alternate geochemical

reactions are controlling the kinetic test conditions in the black rock schist samples. It is possible that mineral equilibrium with iron oxides, such as magnetite [Fe_3O_4] or secondary iron oxide minerals including as ferrihydrite [Fe_2O_3*0.5H_2O], lepidocrocite [FeOOH], goethite [FeOOH] and hematite [Fe_2O_3], maintains the pH of approximately 6 to 7 in the black rock schist kinetic tests.

In conclusion, the pH trends in kinetic test leachates are controlled by a number of factors, including sulphide oxidation and equilibrium with the other mineral phases present in the samples. The sulphide-sulphur criterion was selected using the results of tests known to target acid generation potential related to sulphide minerals. It is agreed that additional laboratory scale tests, including both kinetic testing and more conservative NAG testing on the same samples, should be conducted to further refine the sulphide-sulphur criterion. Ongoing evaluation of the criterion is a key component of any environmentally protective operational management plan.

3.3 NP Availability to Neutralize Acidity

Closing Arguments Perspective:

"Another consideration is the form of the NP minerals and their reactivity. For a conservative assessment, one would use carbonate NP in the initial assessment of Net Neutralization Potential. This is done because carbonate NP is reactive while other minerals contributing NP such as silicates react more slowly. If one looks at acid generation potential using Carbonate NP, many samples at low sulphur (<.3 %) content would be classified as acid generating. As a general comment carbonate NP levels are very low. No samples of waste between 0.04 %S and 0.27% S were tested using NAG or other kinetic test to confirm whether samples with low CaNP would be acid generating."

Golder Response:

Two results of ABA can be used to assess the neutralization potential of a sample: bulk neutralization potential (NP) or carbonate NP (CaNP). Bulk NP is measured by a titration, which consumes all potential mineral sources capable of neutralizing acidity in a sample. Carbonate NP is calculated based on the carbonate concentration measured in a sample. As stated in the response to information request NRCAN_1-1, the NP:AP ratio (also called the neutralization potential ratio or, NPR) criteria derived with bulk NP is considered to be an appropriate method of evaluating acid generation potential based on the Project dataset. The decision to use NP:AP rather than CaNP:AP was based on a large scale review of the geochemical dataset. This approach is consistent with the guidance in Price (1997) and MEND (2009). For example, acid base accounting (ABA) evaluation in Price (1997) uses NPR as the screening criteria, rather than the carbonate neutralization potential ratio (CNPR).

As described in Section 3.1, the contention that no samples containing between 0.04% and 0.27% sulphide sulphur underwent NAG testing is incorrect. Figure 4 compares the CaNP:AP and NP:AP ratios of samples in the NAG-testing dataset to NAG-pH. A NP:AP ratio of 2 is a reasonable indicator of a samples acid generation potential; all samples that had NAG-pH less than 4.5 had NP:AP ratios less than 2. Alternatively, a CaNP:NP ratio of 1 is an indicator of acid generation potential with respect to the results of NAG testing.

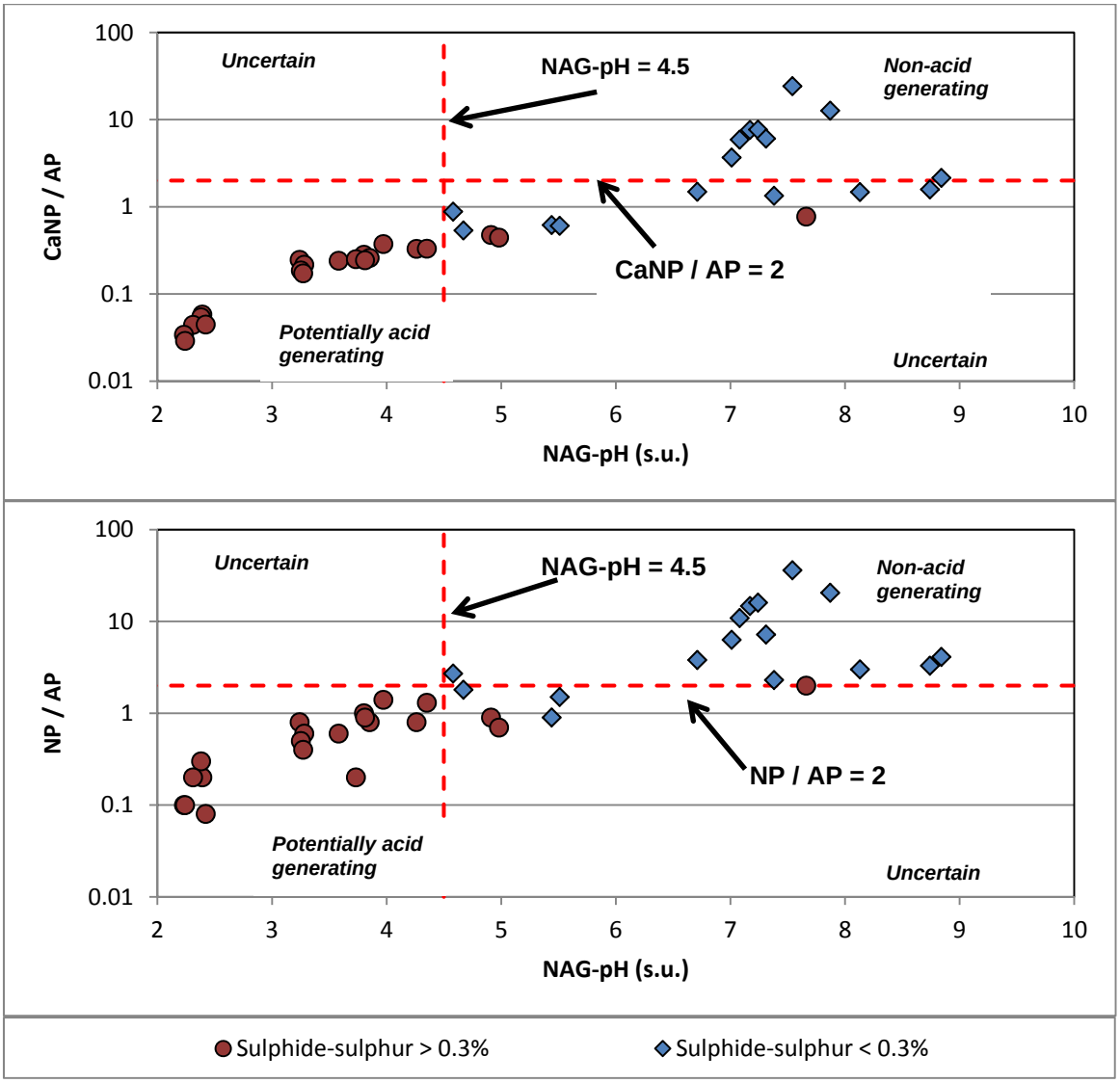

Figure 4: Comparison of CaNP:AP and NP:AP to NAG-pH

In general, CaNP:AP ratios are less than NP:AP ratios for most samples. However, this distinction does not change the predicted acid generation potential of the sample. It is clear from the samples presented in Figure 4 that a CaNP of 1 **or** an NP:AP ratio of 2 can be used to predict acid generation potential. As demonstrated in Figure 5, all samples except 1 with an NP:AP less than 2 have a CaNP:AP ratio less than 1. Furthermore, all samples with greater than 0.3% sulphide-sulphur have CaNP:AP ratios less than 1, and NP:AP ratios less than 2.

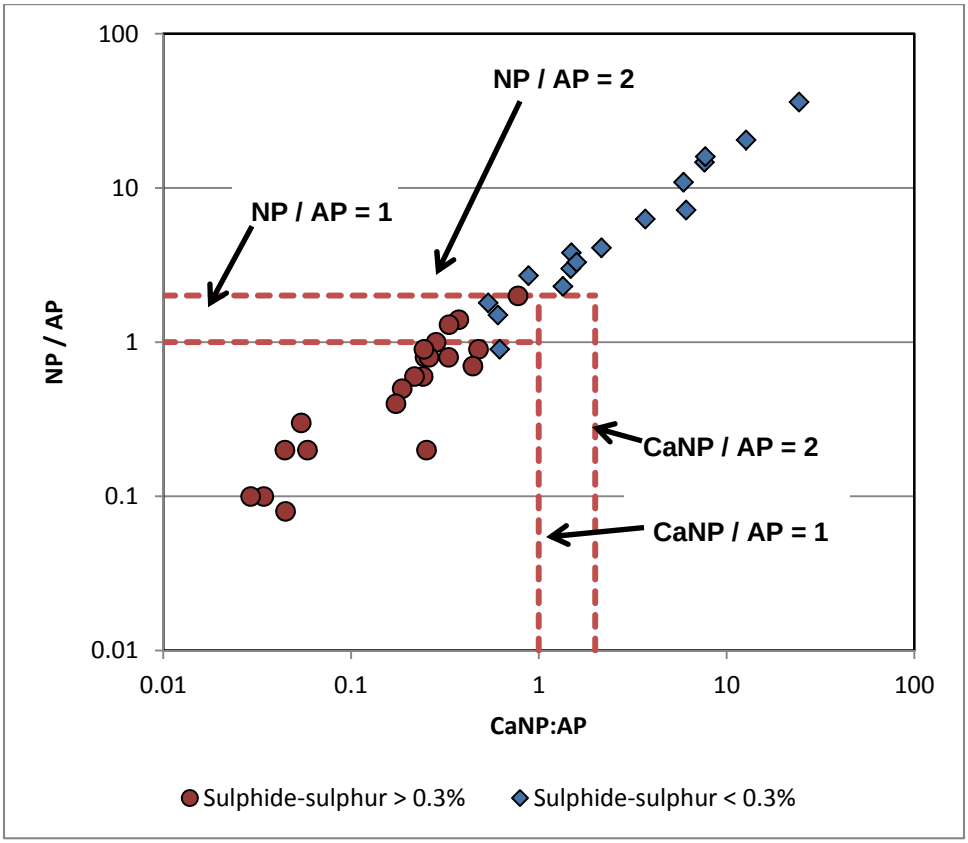

Figure 5: Comparison of CaNP to NP

In conclusion, the measurement of bulk NP is higher than than CaNP, as the titration method can dissolve silicate minerals that do not typically contribute NP under ambient conditions. CaNP accounts only for the NP contribution by carbonate minerals. The criterion for evaluating acid generation potential could either be a CaNP:AP ratio of 1, or an NP:AP ratio of 2 based on the detailed comparison of ABA results to NAG test results. As such, the contention that many samples with low sulphur contents would be acid generating based on CaNP is not correct and is not supported when accounting for the entire data set and testing available. This perspective will continue to be evaluated as a component of ongoing geochemical characterization for the Project.

4.0 PATH FORWARD

The MRMP states that “the Mine Rock classification criteria and closure plan may be updated during operations based on the results of site water quality monitoring”. Further, as described in Section 3.I.9 of the MRMP, it is assumed that annual reporting requirements will be defined as part of the permitting process, including an ongoing analysis of mine rock samples. Ongoing geochemical characterization at the Project will take into account the considerations presented in the Closing Arguments and other information requests. Furthermore, ongoing geochemical characterization will take into account any changes to the Project to ensure that the dataset is representative of the current state of the Project. The analytical program will be reassessed periodically as the project proceeds with respect to recent guidance documents to ensure that the dataset is current with the “state of the art” with respect to geochemical characterization, and sufficiently robust as to account for any uncertainties with respect to the acid generation and metal leaching potential of mine rock at the Project.

5.0 CLOSURE

We trust that this memorandum meets Fortune's current requirements. Please contact the undersigned with further questions regarding the MRMP for the NICO Project.

Kristin Salzsauler, M.Sc., P.Geo.
Geochemist

Ken DeVos, M.Sc., P.Geo.
Principal Geochemist

KAS/KD

References

INAP (The International Network for Acid Prevention). 2009. Global acid rock drainage guide (GARD Guide).http://www.gardguide.com/

MEND (Mine Environment Neutral Drainage). 2009. Prediction manual for drainage chemistry from sulphidic geologic materials. MEND Report 1.20.1.

Price, W.A. 1997. Draft guidelines and recommended methods for the prediction of metal leaching and acid rock drainage at minesites in British Columbia. Reclamation Section, Energy and Minerals Division, British Columbia Ministry of Employment and Investment, April 1997.

c:\documents and settings\ksalzsauler\my documents\sharepoint drafts\final argument attachement 11 1118 0066 2000 senes response.docx