

#### **BHP Billiton Diamonds Inc.**

**Operator of the EKATI Diamond Mine** 

BHP Billiton Diamonds Inc. #1102 4920-52" Street Yellowknife NT Canada X1A 3T1 Tel 867 669 9292 Fax 867 669 9293 bhpbilliton.com

February 20, 2009

Wek'èezhìi Land and Water Board P.O. Box 2130 Yellowknife, NT X1A 2P6 Attention: Ms. Violet Camsell-Blondin, Chair

Dear Ms. Camsell-Blondin:

### Re. BHP Billiton Intervention W2001L2-0001 Sable Pigeon and Beartooth Water Licence Renewal/Amalgamation

BHP Billiton Diamonds Inc. is pleased to provide the document referenced above.

We hope that you find the information to be clear and helpful. Please contact Eric Denholm, Superintendent - Traditional Knowledge and Permitting, at 669-6116 if you have any questions.

Sincerely,

**BHP Billiton Diamonds Inc.** 

- original signed by Eric Denholm for -

Laura Tyler

Manager – Environment, Community, Communications and Planning

EKATI Diamond Mine



## **EKATI DIAMOND MINE**

BHP BILLITON DIAMONDS INC. INTERVENTION ON W2008L2-0001 SABLE, PIGEON AND BEARTOOTH WATER LICENCE RENEWAL / AMALGAMATION

EKATI Diamond Mine BHP Billiton Diamonds Inc. FEBRUARY 20, 2009



# BHP Billiton Diamonds Inc. Intervention on W2008L2-0001 Sable, Pigeon and Beartooth Water Licence Renewal / Amalgamation

#### **TABLE OF CONTENTS**

List of	Acror	nyms and Terms	iii
1.	Introduction		
2.	BHP Billiton's Comment on Reviewer Interventions		2–1
	2.1	Yellowknives Dene First Nation (YDFN) Interventions	2–1
	2.2	North Slave Métis Alliance (NSMA) Intervention	2–3
	2.3	Indian and Northern Affairs Canada (INAC) Interventions	2–8
	2.4	Environment Canada (EC) Interventions	2–24
	2.5	Fisheries and Oceans Canada (DFO) Interventions	2–26
	2.6	Independent Environmental Monitoring Agency (IEMA) Intervention	2–30

#### **APPENDIX 1**

BHP Billiton Letter to the Board February 20, 2009 Site-Specific Water Quality Objective for Chloride

#### **List of Acronyms and Terms**

AEMP – Aquatic Effects Monitoring Program

BHP Billiton – BHP Billiton Diamonds Inc.

Board - Wek'èezhìi Land and Water Board

CCME – Canadian Council of Ministers of the Environment

DELT – Deformities, erosions, lesions and tumours (a fish assessment program within the AEMP)

DFO - Fisheries and Oceans Canada

Draft amalgamated water licence – BHP Billiton draft of an amalgamation of the two water licences MV2001L2-0008 and MV2003L2-0013 submitted to the Wek'èezhìi Land and Water Board on January 16, 2009.

EC - Environment Canada

EQC – Effluent Quality Criteria

IBA – Impact and Benefit Agreement

ICRP – Interim Closure and Reclamation Plan

IEMA – Independent Environmental Monitoring Agency

INAC - Indian and Northern Affairs Canada

Main Site Water Licence – EKATI Main Site Type A Water Licence MV2003L2-0013

MVRMA - Mackenzie Valley Resource Management Act

MVEIRB - Mackenzie Valley Environmental Impact Review Board

NSMA – North Slave Métis Alliance

SNP – Surveillance Network Program

SPB – Sable, Pigeon and Beartooth

SPB Water Licence – Sable, Pigeon and Beartooth Type A Water Licence MV2001L2-0008

WAMP – Watershed Adaptive Management Plan

WQG - Water Quality Guideline

WQO - Water Quality Objective

YDFN – Yellowknives Dene First Nation

#### 1. Introduction

BHP Billiton has carefully reviewed all of the interventions and within this document has laid out each recommendation, suggestion or comment as an "Item" which BHP Billiton has addressed in detail. BHP Billiton's response to each Item is meant to be a complete answer in order to make the document as readable as possible. This has led to some repetition throughout, but has increased clarity.

There were, however, a number of themes which appeared in a number of interventions, which will be addressed in summary terms below as an introduction to BHP Billiton's response to the interventions:

#### The concept that in 2013 all EQC will necessarily be re-evaluated

BHP Billiton rejects the suggestion that the Board could proceed "with the understanding that all EQCs will be re-evaluated at the expiry of this license in 2013" (INAC intervention page 7 option 3). BHP Billiton recognizes that the Board has the discretion to change conditions of a water licence when it is up for renewal. However, BHP Billiton believes that discretion should be exercised sparingly. The vested nature of the rights held in an existing water licence as well as principles of natural justice dictate that conditions of a licence should only be changed by the Board when a party to the public hearing has brought forward sufficient evidence to demonstrate to the Board that such a change is necessary. The Board's approach to renewal proceedings reflects similar understanding of the onus on parties proposing changes to existing licences. A mine operator, in this case BHP Billiton, is not required to defend all conditions already within the licence during a renewal proceeding.

#### The concept that EQC be set on an "interim" basis

Certainty in the terms of a water licence, and particularly EQC, is essential to BHP Billiton's ability to design, build and operate the project. Decision-making regarding future developments such as Pigeon and Sable can only be made with the fullest possible knowledge of the terms and conditions that will apply to those developments. This is particularly true during times when capital for new development is scarce, such as during the current global economic crisis. The "interim EQC" suggested do not provide adequate certainty and would hamper BHP Billiton's ability to progress the projects under this licence.

## Objections to BHP Billiton's proposed changes to the definition of "Receiving Environment"

Although a number of interveners commented on BHP Billiton's proposed definition of Receiving Environment, BHP Billiton was pleased to note that INAC did not object to BHP Billiton's proposed change. As the wording of Receiving Environment is currently drafted, BHP Billiton is concerned with the potential for a technical non-compliance unrelated to any environmental effects. For example, if water seeps off a rock pile onto the tundra, BHP Billiton could be immediately non-compliant even if the water does not enter a water body. Furthermore,

the terrestrial component is adequately protected under the land leases and land use permits that BHP Billiton holds in relation to the project. To also include a terrestrial component in the water licence would complicate an already regulated component without providing any additional benefit. It is a matter of fundamental fairness to the Licensee that duplicative regulatory instruments not be required.

#### The concern that the ongoing process regarding chloride would be lost

Although BHP Billiton has shown that an EQC for chloride is not appropriate or necessary as an EQC for the Sable site, chloride remains a part of the WAMP. BHP Billiton will continue to participate in the process of developing a site specific Water Quality Objective for chloride as part of the WAMP, as committed to the Board in the appended letter.

#### The suggestion that more could have been done to amalgamate the water licences

BHP Billiton has made every effort to draft an amalgamated licence in accordance with the Board's directive and with a view to enhancing administrative efficiency.

The Board, in their letter of September 24, 2008, ordered the amalgamation of the Main Site Water Licence and the Sable, Pigeon and Beartooth Water Licence. However, as part of this amalgamation, the Board ordered that no substantive changes be made to the Main Site Water Licence. The Board stated:

"The Board has therefore determined that the amalgamation process will be restricted and will not allow for changes to the scope of the existing Main Licence or the SPB Water Licence. Both scopes will instead be combined into two parts within the amalgamated licence. Additionally, the terms and conditions of the Main Licence will only be changed where necessary to incorporate terms and conditions relating to the Sable, Pigeon and Beartooth development. Substantive changes to the existing terms and conditions of the Main Licence, for example the existing effluent quality criteria, will not be considered during this process."

Given the Board's directive that the two water licences are to be amalgamated, BHP Billiton strongly supports the additional Board directive that the terms and conditions of the Main Site Water Licence remain unchanged and has made every effort to comply. The Main Site Water Licence is the product of a renewal process that spanned over 18 months and involved numerous submissions, a public hearing, and input from the very parties before the Board on the present renewal. Since that time BHP Billiton has designed and implemented operations management plans based on the Main Site Water Licence as it presently stands and is conducting operations to meet the terms of that licence. It is BHP Billiton's position that it would be contrary to the principles of fairness and natural justice for the Board to change the existing terms and conditions of the Main Site Water Licence at this point.

In drafting an amalgamated licence BHP Billiton undertook to create a workable, efficient and streamlined document while at the same time complying with the Board's order of September 24, 2008. Drafting the amalgamated licence started with a review of the definitions contained in

the SPB and Main Site Water Licences. For terms that were defined in either of the water licences, many of these terms could not be amalgamated into a common definitions section and caused difficulties when considering amalgamation of other sections, because:

- 1. The term was defined only in one licence (for example, "Seepage" is defined only in the Main Site Water Licence);
- 2. The term was defined differently (for example, "Minewater" is defined differently in the two licences); or
- 3. The term was similarly defined in both licences but the definition included defined terms that were not common to both licences (for example, "Acid/Alkaline Rock Drainage" is similarly defined in both licences but contains the word seepage which is a defined term in the Main Site Water Licence but not in the SPB Water Licence and also contains the term groundwater which is differently defined in the two licences).

Consequently, when looking at amalgamating any section of the two licences, despite apparent similarities in wording, the effect of amalgamation is often substantial given the different definitions. Amalgamation of these apparently similar sections would have produced substantive changes to the Main Site Water Licence, an effect prohibited by the Board's order.

The SNP provides one example of the complications and cascading effects of considering amalgamation of definitions and terms that may appear to be similar or the same. Similar wording is used in each water licence in relation to the SNPs. However, due to the differences in definitions these sections cannot be amalgamated without substantially changing the terms of the Main Site Water Licence.

The Main Site Water Licence states:

Part B, Item 12: Meters, devices or other such methods used for measuring the volumes of water used and Waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

The SPB Water Licence states:

Part B, Item 5: Meters, devices or other such methods used for measuring the volumes of water used and Waste Discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

In the Main Site Water Licence discharge is not a defined term whereas in the SPB Water Licence "Discharge" is defined to mean "the direct or indirect release of any water or Waste to the Receiving Environment". Therefore, in the SPB Water Licence the definitions of "Discharge" and "Receiving Environment" are involved in interpreting and enforcing the clause whereas neither is involved in the Main Site Water Licence. Consequently, these sections cannot be amalgamated without substantially changing the meaning of a term in the Main Site Water Licence.

## 2. BHP Billiton's Comment on Reviewer Interventions

#### 2.1 Yellowknives Dene First Nation (YDFN) Interventions

YDFN Item 1 – BATT (pg1 paragraph 2)

Best Available Treatment Technologies

#### **BHP Billiton Comment**

The Two Rock Sedimentation Pond is a water treatment facility that was accepted by the MVEIRB as an acceptable mitigation measure for water quality. This facility incorporates a settling pond and a filter dyke, both of which have been shown to be effective mitigation measures. Further, the design of the facility provides three years of emergency storage capacity which will allow for contingency or adaptive management actions.

The conservative, protective method undertaken by BHP Billiton to analyse whether EQC needed to be changed demonstrated that WQO's and WQG's would be met immediately within Horseshoe Lake, with the exception of nickel which requires further study. Therefore there was no need to consider the costs of additional treatment options.

#### YDFN Item 2 – Timing of renewal process (pg 1 paragraph 2 and 3)

"We also would like to support the Indian and Northern Affairs suggestion that the current license be extended."

"Continuation of the status quo will allow enough time for BHP to continue their work and establish a suggested benchmark for the Nickel EQC along with the requisite outside review. YKDFN feels that it is inappropriate to approve "most" of the license with an understanding that at some future point the rest of the license will be agreed upon."

#### **BHP Billiton Comment**

BHP Billiton notes that the renewal and public engagement processes have been underway for well over a year. As early as August and September 2007, BHP Billiton conducted community presentations and site visits to the Sable, Pigeon and Beartooth areas.

A great deal of time and resources have been expended by all parties to date on the renewal/amalgamated licence process. BHP Billiton and all of the parties have worked on this process in good faith on the basis that the Board would issue decisions on the renewal. To

provide diligent and professional management of the EKATI mine operation, BHP Billiton needs to have certainty regarding the terms of the water licence. Postponing Board decisions on the terms of the renewal would substantially hinder BHP Billiton's ability to manage the mining operation to the benefit of all parties. Please refer to BHP Billiton's response to INAC's intervention for related information.

#### YDFN Item 3 – Security (pg 2 paragraph 4)

#### **Reclamation Security**

#### **BHP Billiton Comment**

INAC has conducted the work recommended by the YDFN as per its intervention of February 13. Please refer to BHP Billiton's response to INAC Item 17 for related information.

#### YDFN Item 4 – Consultation (pg 2 paragraph 5)

"YKDFN asserts that BHP has not adequately consulted with the First Nation in regards to this new plan for the site. ... The impacts associated with this have not been mitigated by the negotiation of an Impacts Benefit Agreement."

#### **BHP Billiton Comment**

BHP Billiton has consulted with the Yellowknives Dene First Nation with respect to the EKATI project generally, and the Sable, Pigeon and Beartooth pipes specifically during the environmental assessment process. BHP Billiton will continue to provide information to and consult with the Yellowknives Dene First Nation.

#### YDFN Item 5 - (pg 2 paragraph 6)

"YKDFN would also like to see a community reporting requirement placed within the license."

#### **BHP** Billiton Comment.

BHP Billiton will continue to fulfil its requirements under the Environmental Agreement and water licences to report annually to the communities. For example, the Annual Environmental Agreement and Water Licences Report is issued in Plain Language format and circulated to all of the aboriginal communities along with BHP Billiton contact information.

Additionally, BHP Billiton works hard to encourage community involvement in environmental monitoring programs. For example, in 2008 BHP Billiton invited each aboriginal community to have representatives to spend a week on site working alongside our environmental specialists.

#### 2.2 North Slave Métis Alliance (NSMA) Intervention

#### General Comment - Crown Consultation and Compensation

The NSMA have made a number of comments with respect to the adequacy of Crown consultation and accommodation, as well as the role of the Board in that process. BHP Billiton believes that Crown consultation has been adequate and that the Board has been diligent in its inclusion of all aboriginal groups. However, BHP Billiton will leave these comments for INAC to respond to in more detail.

#### NSMA Item 1 – BHP Billiton consultation (Preliminary Matters pg 1-2)

"The NSMA provided the Board, Canada, and BHP Billiton with information regarding our Consultation expectations in April, 2007."

#### **BHP Billiton Comment**

BHP Billiton has engaged with the NSMA regarding the SPB project from before the SPB environmental assessment. Consultation and community engagement has been ongoing since then and was an integral part of the process that led to the original issuance of the licence.

With respect to the renewal of the SPB Water Licence, BHP Billiton has continued with its engagement of NSMA. The details of contact, community visits, invitations, site visits and other engagement are detailed in the "Community Engagement Report" in the renewal application (March 2008) and follow-up communications to the NSMA and the Board.

Most recently BHP Billiton invited the NSMA to an Information Session (January 26, 2009) to assist in understanding BHP Billiton's proposed changes to the SPB Water Licence.

#### NSMA Item 2 –accommodation (Preliminary Matters pg 1-2)

"The onus of proof of adequate compensation is clearly on the applicant."

#### **BHP Billiton Comment**

BHP Billiton disagrees with NSMA's assertion. Consultation and accommodation regarding the development of the SPB pits was conducted by the Crown during the environmental assessment

and initial licensing. BHP Billiton involvement in the process resulted in an IBA with the NSMA. On this renewal the Crown must simply ensure that any duty to consult regarding proposed changes is discharged. This is a Crown obligation; there is no onus on BHP Billiton to demonstrate adequacy of consultation or compensation.

#### NSMA Item 3 – Receiving Environment definition (Section 1 – A pg 3)

"...the definition of "receiving environment" should include any and all parts of the natural environment, or natural system, which may potentially receive wastes discharged by the appurtenant undertaking, intentionally or otherwise."

#### **BHP Billiton Comment**

BHP Billiton disagrees with NSMA's proposed recommendation for the definition of Receiving Environment and notes that INAC has not objected to BHP Billiton's proposed change. As the wording of Receiving Environment is currently drafted, BHP Billiton is concerned with the potential for a technical non-compliance unrelated to any environmental effects. For example, if water seeps off a rock pile onto the tundra, BHP Billiton could be immediately non-compliant even if the water does not enter a water body. Furthermore, the terrestrial component is adequately protected under the land leases and land use permits that BHP Billiton holds in relation to the project. To also include a terrestrial component in the water licence would complicate an already regulated component without providing any additional benefit.

#### NSMA Item 4 – definition of the Act (Section 1 – A pg 3)

"The definition of "Act" should say "The Northwest Territories Waters Act and Part 3 of the Mackenzie Valley Resource Management Act" to be consistent with the definition of "licence" in the enabling legislation."

#### **BHP Billiton Comment**

The reference to Act within the water licence is to the *Northwest Territories Water Act*. It would be incorrect to add in a reference to the MVRMA as suggested by the NSMA.

#### NSMA Item 5 – Project definition (Section 1 – A pg 3)

"Definitions should be provided that confirms that the "Project" is the same one as has been subjected to environmental assessment, and which environmental assessment."

In each section of the draft amalgamated licence the scope refers to the project as defined in its environmental assessments.

#### NSMA Item 6 – Dewatering definition (Section 1 – A pg 4)

"The definition of "dewatering" should say "virtually all" since it is not physically possible to remove all water from any permeable container."

#### **BHP Billiton Comment**

BHP Billiton is not opposed to this wording if the Board is so disposed.

#### NSMA Item 7 – Reports (Section 1 – B pg 4)

"If the proponent is to be given the opportunity to incorporate various different reports, plans or programs into others, there should be a corresponding requirement to provide a functional index and cross reference, and provide advance notice to the reviewers of such plans, programs and reports."

#### **BHP Billiton Comment**

BHP Billiton will continue to provide reports with appropriate cross referencing and indexing. Those reports for approval will undergo notification and circulation by the Board as part of their review process.

#### NSMA Item 8 – Scope (Section 3 – A pg 4)

"The first occurring "to use water" is out of place, meaningless, and can be deleted."

#### **BHP Billiton Comment**

If the "first occurrence" that the NSMA is referring to is in Section 3 Part A Item 1a), then BHP Billiton disagrees; the phrase "to use water" is needed and appropriate there.

#### NSMA Item 9 – AEMP and Receiving Environment definitions (Section 3 – A pg 4)

• "The AEMP definition should be related to the aquatic receiving environment.

• Please remove the word "aquatic" from the definition of "receiving environment"..."

#### **BHP Billiton Comment**

These suggested changes to the definitions relate to the previous discussion on Receiving Environment which BHP Billiton responded to in NSMA Item 3.

NSMA Item 10 – Closure Plan (Section 3 – B pg 4)

"We insist that the closure plan retain the name of Abandonment and Restoration Plan as was used during environmental assessment."

#### **BHP Billiton Comment**

The use of the title Closure and Reclamation Plan enhances consistency with external documents such as INAC's *Mine Reclamation Guidelines for the Northwest Territories*.

NSMA Item 11 – Security (Section 3 – C pg 4-5)

"We believe that the security should be provided in cash, and held in a secure trust account generating interest to offset inflation."

#### **BHP Billiton Comment**

Security has been provided in a form acceptable to the Minister as required by the SPB Water Licence.

NSMA Item 12 – Security (Section 3 – C pg 4-5)

Timing of security

#### **BHP Billiton Comment**

BHP Billiton accepts the INAC submission that stated that security for Pigeon and Sable be provided 60 days prior to construction (INAC Item 17). BHP Billiton disagrees that separate hearings and consultations are required on this matter given the level of previous consultations.

NSMA Item 13 – Security (Section 3 – C pg 4-5)

Financial commitments in NSMA's IBA.

The IBAs are separate and distinct from the water licence renewal process. Accordingly, it would be inappropriate to discuss any IBA's in this proceeding.

NSMA Item 14 - EQC (Section 3 - G pg 5)

"We expect discharge criteria to be based on an acceptable change from baseline conditions, and do not want CCME guidelines used unless they have been shown to be valid."

#### **BHP Billiton Comment**

The CCME guidelines are valid and relevant to the work that BHP Billiton has completed. BHP Billiton has appropriately used both baseline conditions and the CCME guidelines in this work. The CCME guidelines state:

"Guidelines are numerical limits or narrative statements based on the most current, scientifically defensible toxicological data available for the parameter of interest. Guideline values are meant to protect all forms of aquatic life and all aspects of the aquatic life cycles, including the most sensitive life stage of the most sensitive species over the long term. Ambient water quality guidelines developed for the protection of aquatic life provide the science-based benchmark for a nationally consistent level of protection for aquatic life in Canada" (CCME 1999)<sup>1</sup>.

Although there will be changes to the aquatic receiving environment, the environmental assessment by MVEIRB determined that there will be no significant adverse effects, in other words, the "use protection approach". BHP Billiton supports this approach.

See comments in INAC Item 4 for additional information.

NSMA Item 15 – Conditions applying to studies (Section 3 – I pg 6)

Community Involvement and Traditional Knowledge

#### **BHP Billiton Comment**

BHP Billiton works hard with all of the aboriginal communities to encourage community involvement and to bring traditional knowledge into monitoring programs and studies with all of the aboriginal communities. For example, in 2007 each of the aboriginal communities was

<sup>&</sup>lt;sup>1</sup> CCME 1999. (Canadian Council of Ministers of the Environment). Canadian Environmental Quality Guidelines for the Protection of Aquatic Life.

#### BHP Billiton's Comment on Reviewer Interventions

invited to send a traditional knowledge holder to site to participate in the fisheries component of the AEMP (DELT program).

NSMA Item 16 – Contingency Planning (Section 3 – J pg 6)

"The NSMA wishes to be informed directly, and promptly, by BHP, whenever any kind of emergency involving people or the environment occurs."

#### **BHP Billiton Comment**

This is not a valid issue under the water licence renewal.

NSMA Item 17 – Conditions Relating to Closure and Reclamation (Section 3 – L pg 6-7)

Closure and Reclamation

#### **BHP Billiton Comment**

NSMA's comments on the Closure and Reclamation are more appropriately addressed through the Board's ICRP process.

#### 2.3 Indian and Northern Affairs Canada (INAC) Interventions

INAC Item 1 – EQC (pg 2 paragraph 3)

#### Definitions of:

- Effluent Quality Criteria (EQC)
- Water Quality Guideline (WQG)

"...INAC would like to caution the WLWB on the direct use CCME WQG's as WQO's in northern receiving environments."

#### **BHP Billiton Comment**

BHP Billiton used the terms EQC and WQO according to the common scientific usage as follows:

<u>EQC</u>: a numerical value for a chemical parameter set in a water licence as a regulatory limit. It is an operational upper limit intended to ensure protection of the environment while allowing development to proceed. There are numerous factors involved in the development of an EQC; it is not simply a back calculated value.

<u>WQG</u>: a numerical concentration or narrative statement recommended to support and maintain a designated water use. In this case the use is freshwater aquatic life (CCME 1999)<sup>2</sup>.

<u>WQO</u>: a numerical concentration or narrative statement that has been established to support and protect the designated uses of water at a specified site. In this case the use is freshwater aquatic life (CCME 1999).

With respect to the cautionary statement regarding the use of CCME guidelines in northern receiving environments, BHP Billiton believes that CCME guidelines should always be applied with consideration of their intended purpose. BHP Billiton notes that the CCME water quality guidelines are applicable across Canada including the north.

"Guidelines are numerical limits or narrative statements based on the most current, scientifically defensible toxicological data available for the parameter of interest. Guideline values are meant to protect all forms of aquatic life and all aspects of the aquatic life cycles, including the most sensitive life stage of the most sensitive species over the long term. Ambient water quality guidelines developed for the protection of aquatic life provide the science-based benchmark for a nationally consistent level of protection for aquatic life in Canada" (CCME 1999).

#### INAC Item 2 – EQC (pg 2 bullet 2)

"The ability of current EQCs to protect the Horseshoe Watershed was not fully examined."

#### **BHP Billiton Comment**

BHP Billiton disagrees with this conclusion by INAC. The current application is for the renewal of an existing water license for the SPB pits. The original license was granted after a prolonged and careful analysis by each of the current Intervenors, Board staff and the Board. The EQC in that license were determined by the Board as being fully protective of the environment.

During the 2004 Main Site Water Licence renewal process, the Board established that no term or condition of an existing license should be changed unless there were strong, compelling reasons that merited such revision. In keeping with this procedure and in response to comments from Intervenors and Board staff BHP Billiton amended its original SPB renewal application to address only those EQC that it believed, after detailed analysis, warranted change.

BHP Billiton's analysis did not reassess the ability of all of the EQC to protect the Horseshoe Watershed. BHP Billiton's analysis did assess the proposed changes to EQC for environmental protection.

\_

<sup>&</sup>lt;sup>2</sup> CCME 1999. (Canadian Council of Ministers of the Environment). Canadian Environmental Quality Guidelines for the Protection of Aquatic Life.

#### INAC Item 3 – EQC (pg 2 bullet 3)

"Most importantly, with the possible exception of ammonia, the environmental implications of the proposed increases to EQCs were not examined despite the statement that EQC are "protective of the environment."

#### **BHP Billiton Comment**

BHP Billiton disagrees with this conclusion by INAC. BHP Billiton assessed the environmental implications of those EQC for which changes are proposed. This was accomplished by modelling concentrations in Horseshoe Lake and comparison to WQO and WQG (see INAC Item 1 for definitions of WQO and WQG).

#### INAC Item 4 - EQC (pg 3 bullet 1)

"The intended "use" of the environment is not stated but implies that water quality will be functionally unchanged (i.e. the current ecosystem will remain unaffected)."

#### **BHP Billiton Comment**

BHP Billiton went to the INAC supporting documents for the full statement of the above quote (Appendix 1 page 23) which reads:

"The intended "use" of the environment is not stated but implies that water quality will be functionally unchanged (i.e. the current ecosystem will remain unaffected). It is not clear whether this implied usage is consistent with landholder desires which I have heard expressed as "water should remain pristine". Intended usage is a key consideration in the water policies reviewed."

INAC appears to be criticising the reliance on the "use protection approach" rather than the "non degradation approach".

BHP Billiton disagrees with this conclusion. Although there will be changes to the aquatic receiving environment, the environmental assessment by MVEIRB determined that there will be no significant adverse effects, in other words, the "use protection approach". BHP Billiton supports this approach.

#### INAC Item 5 – BATT (pg 3 bullet 2)

"An equitable balance between preserving water quality and economic development considers the benefits of economic development and the cost of protecting the environment. Best available technologies and costs associated with retaining the current EQCs have not been discussed and therefore a decision balancing preservation and economic development is not possible."

The Two Rock Sedimentation Pond is a water treatment facility that was accepted by the MVEIRB as an acceptable mitigation measure for water quality. This facility incorporates a settling pond and a filter dyke, both of which have been shown to be effective mitigation measures. Further, the design of the facility provides three years of emergency storage capacity which will allow for contingency or adaptive management actions.

The conservative, protective method undertaken by BHP Billiton to analyse whether EQC needed to be changed demonstrated that WQO's and WQG's would be met immediately within Horseshoe Lake, with the exception of nickel which requires further study. Therefore there was no need to consider additional treatment options.

#### INAC Item 6 – BATT (pg 3 bullet 3)

"The EQCs proposed by BHP represent increases from current WQG's and the proposed values are generally "higher" than a consensus among other WQG's."

#### **BHP Billiton Comment**

EQC by their nature (see definitions in INAC Item 1) are higher than WQG's, therefore BHP Billiton does not believe this comparison is relevant.

#### INAC Item 7 – Need to re-evaluate existing EQC (pg 3 paragraph 1)

"INAC suggests that it is necessary to evaluate and assess the adequacy of the existing and newly proposed EQCs from a site-specific perspective."

#### **BHP Billiton Comment**

BHP Billiton disagrees with this suggestion. The current application is for the renewal of an existing water license for the SPB pits. During the 2004 Main Site Water Licence renewal process, the Board established that no term or condition of an existing license should be changed unless there were strong, compelling reasons supported by credible evidence that merited such revision. Given the fact that "INAC has not reviewed BHP Billiton's EQC from a site specific derivation Perspective" (page 3) and that "an assessment of BHP Billiton's model, discharge approach and the various uncertainties in determining the quality within Two Rock Sedimentation Pond and in Horseshoe Lake was not conducted" (page 3), INAC has not provided any compelling reason supported by credible evidence for the need to re-evaluate the existing EQC.

#### INAC Item 8 – EQC (pg 3 paragraph 2 – pg 4 paragraph 1)

"... the EQCs in BHP Billiton's Sable, Pigeon, Beartooth license are site specific to DDMI and as such should not be directly applied to this project or its receiving environments without further review and assessment.

#### **BHP Billiton Comment**

The original SPB license was granted after a prolonged and careful analysis by each of the current Intervenors, Board staff and the Board. By inclusion in the existing SPB Water Licence the Board deemed the EQC as being protective of the environment. During the 2004 Main Site Water Licence renewal process, the Board established that no term or condition of an existing license should be changed unless there were strong, compelling reasons that merited such revision. In keeping with this procedure and in response to comments from Intervenors and Board staff BHP Billiton amended its original SPB renewal application to address only those EQC that it believed, after detailed analysis, warranted change.

#### INAC Item 9 – EQC (pg 4 paragraph 2)

"INAC could not conduct an assessment of the appropriateness or protectiveness of the remaining EQC in the timeframe between the additional information submission (January 16, 2009), BHP Billiton's response to questions from the January 26, 2009 information session (February 10, 2009) and the intervention deadline (February 13, 2009)".

#### **BHP Billiton Comment**

BHP Billiton submitted its application for renewal in March 2008. That application included a proposal to change the EQC in the SPB Water Licence. It would have been reasonable for INAC to have prepared a technical review or other work regarding EQC during this timeframe had it desired to do so. The subsequent modifications to BHP Billiton's proposed changes to the EQC were a progressive narrowing of focus to fewer EQC parameters. These modifications did not prevent or delay any work that INAC may have desired to conduct. Based on its experience BHP Billiton believes INAC had ample time.

#### INAC Item 10 – Mixing Zone (pg 4 paragraph 3)

"BHP Billiton has suggested that for ammonia and zinc that the expected effluent would meet Canadian Council of Ministers of the Environment Water Quality Guidelines CCME WQG) at the edge of the mixing zone in Horseshoe Lake."

BHP Billiton has not defined a mixing zone in Horseshoe Lake. The model shows that the WQO's for ammonia and zinc will be achieved almost immediately upon discharge.

INAC Item 11 – Suggested approaches to EQC (pg 6 last paragraph – pg 7 top)

"INAC has proposed three approaches to deal with the EQCs ..."

#### **BHP Billiton Comment**

BHP Billiton recommends that the Board continue with the current renewal process. INAC has suggested three possible approaches to resolving EQC for the SPB Water Licence that are different than the process that was established by the Board and is currently nearing completion. Parties have worked diligently within the Board's process and have expended resources that would largely be lost in the suggestions put forward by INAC.

Certainty in the terms of a water licence, and particularly EQC, is essential to BHP Billiton's ability to design, build and operate the project. Decision-making regarding future developments such as Pigeon and Sable can only be made with the fullest possible knowledge of the terms and conditions that will apply to those developments. This is particularly true during times when capital for new development is scarce, such as during the current global economic crisis. The "interim EQC" suggested by INAC do not provide adequate certainty and would hamper BHP Billiton's ability to progress the projects under this licence.

Finally, BHP Billiton rejects INAC's suggestion that the Board could proceed "with the understanding that all EQCs will be re-evaluated at the expiry of this license in 2013" (page 7 option 3). BHP Billiton recognizes that the Board has the discretion to change conditions of a water licence when it is up for renewal. However, BHP Billiton believes that discretion should be exercised sparingly. The vested nature of the rights held in an existing water licence as well as principles of natural justice dictate that conditions of a licence should only be changed by the Board when a party to the public hearing has brought forward sufficient evidence to demonstrate to the Board that such a change is necessary. The Board's approach to renewal proceedings reflects similar understanding of the onus on parties proposing changes to existing licences. A mine operator, in this case BHP Billiton, is not required to defend all conditions already within the licence during a renewal proceeding.

#### INAC Item 12 – EQC (pg 7 first full paragraph)

"... INAC can only stress that EQCs are site-specific numbers back-calculated from WQO's."

#### **BHP Billiton Comment**

BHP Billiton disagrees with INAC's statement. It is an oversimplification of the scope of the process that is required to determine EQC that are protective of human health and the environment and that are also appropriate to the project. Appropriate EQC achieve a balance between the fundamental need for protection and the ability of the mine operator to conduct a successful project which is able to return benefits to all. INAC acknowledges the need for this balance within its intervention. The process for determination of appropriate EQC cannot be reduced to a single numeric equation, without fair and reasonable consideration by the Board of the practical aspects of each project and project location.

#### INAC Item 13 – Environment Canada IPS for Nitrate (page 8 paragraph 1)

"As such, the IPS has been established for agricultural regions and is likely not applicable for northern ecosystems."

#### **BHP Billiton Comment**

Environment Canada's Ideal Performance Standards (IPS) are generally focused on agricultural areas. However, in the case of the recently published IPS for nitrate, the methodology and approach to developing the IPS followed the CCME's most recent protocol for the protection of aquatic life. This means that the nitrate IPS is also applicable to non-agricultural areas and to environments of low human impact. This was confirmed with the author of the IPS (*pers. comm.* from M. Guy to M. Wen, 28 January 2009).

Hence, BHP Billiton's use of the IPS as a WQO for Horseshoe Lake is appropriate.

#### INAC Item 14 – Recommendation on nitrate (pg 8)

"INAC recommends, should the WLWB decide to address changes to the EQCs, that an interim EQC for nitrate be established for the Sable development such that all major nutrient enrichment constituents are covered to limit nutrient enrichment in the receiving environment."

#### **BHP Billiton Comment**

INAC's recommendation that a SPB EQC is required for nitrate in order to protect against nutrient enrichment is not relevant. The reasons for this are outlined below.

Nutrient enrichment occurs when both phosphorus and nitrogen compounds are elevated. This generally occurs in areas where high levels of nitrogen and phosphorus compounds enter a lake,

such as through sewage outfalls, which will not take place at the Sable site. This becomes an environmental concern if there is excessive algal growth that results in oxygen depletion.

In the central Arctic lakes, phosphorus is the limiting factor for algal growth. This is the situation at Horseshoe Lake. This phenomenon has long been known, as documented in Redfield in 1958<sup>3</sup>. This means that problematic algal growth will not occur based only on elevated nitrogen levels, but requires an increase in bioavailable phosphorus as well. For example, although nitrate concentrations in Leslie, Moose and Nema Lakes at the EKATI main site have increased in recent years there has been no appreciable increase in algal growth because bioavailable phosphorous concentrations have not increased.

BHP Billiton has shown that phosphorus is not anticipated to increase to concentrations that would cause excessive nutrient enrichment or exceed its EQC concentration. Consequently, nutrient enrichment is not a relevant concern at the Sable site.

INAC's expressed concern regarding potential nutrient enrichment in the receiving environment as a justification for a nitrate EQC is misleading because nutrient enrichment is not controlled by nitrate concentrations at the Sable site.

The focus of BHP Billiton's work has been on assessing the risks related to nitrate toxicity. Existing environmental quality guidelines for nitrate are based on protecting against toxic responses in aquatic organisms rather than nutrient enrichment. The current interim CCME guideline and the recently published Environment Canada IPS for nitrate are both derived on a toxicity basis, and not on the basis of potential nutrient enrichment.

#### INAC Item 15 – Recommendation on TPH (page 9)

"INAC recommends, should the WLWB decide to address changes to EQCs, that an interim EQC for Total Petroleum Hydrocarbons (TPH) of 3 mg/L and 5 mg/L for average and maximum concentrations respectively, replace the existing Oil &Grease EQC of 3 mg/L and that the EQC for TPH be added to the list generated for this subsection of the licence."

#### **BHP Billiton Comment**

BHP Billiton acknowledges the inadvertent omission of TPH from the January 16, 2009 draft amalgamated water licence. In its February 10, 2009 information, BHP Billiton provided a revised table of EQC for Section 3 of the draft amalgamated water licence that included TPH at the concentrations recommended by INAC.

<sup>&</sup>lt;sup>3</sup> Redfield AC (1958) The biological control of chemical factors in the environment. Am Sci 46:205–221

However, BHP Billiton disagrees with the use of the word "Interim". Certainty in the terms of a water licence, and particularly EQC, is essential to BHP Billiton's ability to design, build and operate the project. Decision-making regarding future developments such as Pigeon and Sable can only be made with the fullest possible knowledge of the terms and conditions that will apply to those developments. This is particularly true during times when capital for new development is scarce, such as during the current global economic crisis. The "interim EQC for TPH" suggested by INAC do not provide adequate certainty and would hamper BHP Billiton's ability to progress the projects under this licence.

#### INAC Item 16 – Recommendation on chloride (pg 9)

"INAC recommends that the WLWB establish a way forward to continue the work on the development of a WQO and an eventual EQC for chloride in the Reasons for Decision for this water license amalgamation."

#### **BHP Billiton Comment**

BHP Billiton disagrees with the recommendation from INAC. Chloride is included in the WAMP. BHP Billiton will continue its work on developing a site specific Water Quality Objective for chloride as part of the WAMP, as committed to the Board in the appended letter.

With regard to INAC's recommendation of "an eventual EQC for chloride", BHP Billiton has shown that an EQC for chloride is not appropriate or necessary for the Sable site. Further, BHP Billiton rejects any recommendation that impacts the Main Site Water Licence, as this application is for the renewal of the Sable, Pigeon and Beartooth Water Licence only.

#### INAC Item 17 – Recommendations on reclamation security (pg 13 and 14)

Five recommendations regarding reclamation security.

#### **BHP Billiton Comment**

INAC provides an updated assessment of its estimate of the total, water-related and land-related, reclamation costs for the Sable, Pigeon and Beartooth Project. INAC's current estimate for the combined Sable, Pigeon and Beartooth areas as compared to the previous established estimate is as follows:

	INAC's Current Estimate	Previously Established Estimate
Total Security	\$11,207,555	\$22,225,000
Water-Related Security	\$9,605,386	\$14,446,000
Land-Related Security	\$1,602,169	\$7,779,000

The water-related security is currently held by INAC as a requirement of the water licence. The land-related security is currently held by INAC as a combined requirement of two land use permits (\$1,900,000 each) and the Environmental Agreement (\$3,979,000).

INAC provides four recommendations to the Board regarding water-related reclamation security as required under the Sable, Pigeon and Beartooth Water Licence:

- 1. INAC recommends that appropriate security amounts within the water license for Sable and Pigeon pits be submitted 60 days prior to project development, to allow sufficient time for review and acceptance of form by the Minister.
- 2. INAC recommends that a security amount of \$4,325,673.00 be maintained within the water license for the water-related liability of Beartooth pit.
- 3. INAC recommends that a security amount of\$4,019,232.00 be set in the water licence for water-related liability of Sable pit and submitted 60 days prior to the commencement of construction activities.
- 4. INAC recommends that a security amount of \$1,260,481.00 be set in the water licence for water-related liability of Pigeon pit and submitted 60 days prior to the commencement of construction activities.

INAC provides one additional recommendation to the Board regarding land-related reclamation security as required under the Sable, Pigeon and Beartooth Land Use Permits:

5. INAC recommends that a security amount of\$1,602,609.00 be set appropriately within the land use permit authorizations for the development of Sable, Pigeon, and Beartooth pits.

BHP Billiton appreciates the diligence that led INAC to conduct this work but has not critically reviewed INAC's updated assessment and is not indicating herein whether or not it accepts that assessment. BHP Billiton provides the following comments without prejudice to future reviews of reclamation costs and liability. BHP Billiton understands that INAC agrees with BHP Billiton's proposal that the provision of reclamation security should be staged to correspond to the development of the three mining areas. For the purposes of this renewal only, BHP Billion is willing to accept the security estimates and timeframe (60 days prior) suggested by INAC as a means of establishing this concept in the water licence and land use permits.

In relation to the water-related reclamation security, BHP Billiton suggests that Section 2 Item C Part 1 of the draft amalgamated water licence as submitted to the Board by BHP Billiton on January 16, 2009 read as follows:

1. Pursuant to this Section of the Licence, prior to the use of water for industrial undertakings or the disposal of Waste and pursuant to Section 17(1) of the Act and

Section 12 of the Regulations, the Licensee shall have posted and shall maintain a security deposit according to the following schedule:

- a) Reclamation security in the amount of \$14,446,000 presently held on account of this Section of the Licence shall be returned to the Licensee upon the Licensee posting CDN \$4,325,673 security for Beartooth Pit;
- b) Reclamation security in the amount of CDN \$1,260,481 shall be posted 60 days prior to Construction commencing at the Pigeon Pit;
- c) Reclamation security in the amount of CDN \$4,019,232 shall be posted 60 days prior to Construction commencing at the Sable Pit;
- d) Additional security may be required by the Board based on revisions of the reclamation security estimate conducted periodically as part of the Interim Closure and Reclamation Plan (or Closure and Reclamation Plan).

BHP Billiton disagrees with the INAC's recommendation on the land-related reclamation security. The amount held under the Environmental Agreement (\$3,979,000) is greater than INAC's current assessment of \$1,602,169. This suggests that the requirement for land-related security is more than adequately addressed through the Environmental Agreement and that, therefore, the two land use permits should not require additional land-related security. BHP Billiton suggests that Part C Item 45 of Land Use Permit MV2001X0071 (Sable Pit) and Part C Item 45 of Land Use Permit MV2001X0072 (Pigeon Pit) read as follows:

#### *MV201X0071* (*Sable Pit*)

45. The Permittee shall deposit with the Minister a security deposit pursuant to the Environmental Agreement between the Permittee, and the Governments of Canada and the Northwest Territories dated January 6, 1997.

#### *MV201X0072* (*Pigeon Pit*)

45. The Permittee shall deposit with the Minister a security deposit pursuant to the Environmental Agreement between the Permittee, and the Governments of Canada and the Northwest Territories dated January 6, 1997.

#### INAC Item 18 – Amalgamated Licence (pg 16)

"INAC suggests that all definitions within the amalgamated license be combined within one section of the license and placed before the terms and conditions section."

"INAC suggests that a different approach be taken to that proposed by BHP to the layout of the water license. To provide more clarity and consistency within the license, it is suggested that

terms and conditions be combined into one section, with project-specific terms and conditions identified."

#### **BHP Billiton Comment**

BHP Billiton has made every effort to draft an amalgamated licence in accordance with the Board's directive and with a view to enhancing administrative efficiency and disagrees with INAC's suggestions in this regard.

The Board, in their letter of September 24, 2008, ordered the amalgamation of the Main Site Water Licence and the Sable Pigeon and Beartooth Licence. However, as part of this amalgamation, the Board ordered that no substantive changes be made to the Main Site Water Licence. The Board stated:

"The Board has therefore determined that the amalgamation process will be restricted and will not allow for changes to the scope of the existing Main Licence or the SPB Water Licence. Both scopes will instead be combined into two parts within the amalgamated licence. Additionally, the terms and conditions of the Main Licence will only be changed where necessary to incorporate terms and conditions relating to the Sable, Pigeon and Beartooth development. Substantive changes to the existing terms and conditions of the Main Licence, for example the existing effluent quality criteria, will not be considered during this process."

Given the Board's directive that the two water licences are to be amalgamated, BHP Billiton strongly supports the additional Board directive that the terms and conditions of the Main Site Water Licence remain unchanged and has made every effort to comply. The Main Site Water Licence is the product of a renewal process that spanned over 18 months and involved numerous submissions, a public hearing, and input from the very parties before the Board on the present renewal. Since that time BHP Billiton has designed and implemented operations management plans based on the Main Site Water Licence as it presently stands and is conducting operations to meet the terms of that licence. It is BHP Billiton's position that it would be contrary to the principles of fairness and natural justice for the Board to change the existing terms and conditions of the Main Site Water Licence at this point.

In drafting an amalgamated licence BHP Billiton undertook to create a workable, efficient and streamlined document while at the same time complying with the Board's order of September 24, 2008. Drafting the amalgamated licence started with a review of the definitions contained in the SPB and Main Site Water Licences. For terms that were defined in either of the water licences, many of these terms could not be amalgamated into a common definitions section and caused difficulties when considering amalgamation of other sections, because:

1. The term was defined only in one licence (for example, "Seepage" is defined only in the Main Site Water Licence);

- 2. The term was defined differently (for example, "Minewater" is defined differently in the two licences); or
- 3. The term was similarly defined in both licences but the definition included defined terms that were not common to both licences (for example, "Acid/Alkaline Rock Drainage" is similarly defined in both licences but contains the word seepage which is a defined term in the Main Site Water Licence but not in the SPB Water Licence and also contains the term groundwater which is differently defined in the two licences).

Consequently, when looking at amalgamating any section of the two licences, despite apparent similarities in wording, the effect of amalgamation is often substantial given the different definitions. Amalgamation of these apparently similar sections would have produced substantive changes to the Main Site Water Licence, an effect prohibited by the Board's order.

The SNP provides one example of the complications and cascading effects of considering amalgamation of definitions and terms that may appear to be similar or the same. Similar wording is used in each water licence in relation to the SNPs. However, due to the differences in definitions these sections cannot be amalgamated without substantially changing the terms of the Main Site Water Licence.

The Main Site Water Licence states:

Part B, Item 12: Meters, devices or other such methods used for measuring the volumes of water used and Waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

The SPB Water Licence states:

Part B, Item 5: Meters, devices or other such methods used for measuring the volumes of water used and Waste Discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

In the Main Site Water Licence discharge is not a defined term whereas in the SPB Water Licence "Discharge" is defined to mean "the direct or indirect release of any water or Waste to the Receiving Environment". Therefore, in the SPB Water Licence the definitions of "Discharge" and "Receiving Environment" are involved in interpreting and enforcing the clause whereas neither is involved in the Main Site Water Licence. Consequently, these sections cannot be amalgamated without substantially changing the meaning of a term in the Main Site Water Licence.

#### INAC Item 19 – Definition of Receiving Environment (pg 16)

"INAC does not oppose the wording change in principle."

#### **BHP Billiton Comment**

BHP Billiton acknowledges that INAC has accepted the proposed wording change for Receiving Environment.

#### INAC Item 20 – Section 1 Part B, Common General Conditions (pg 17)

"This clause should be removed, as amalgamating the licenses would address this request, as one license would only require one report, plan, etc. for the mine as a whole."

#### **BHP Billiton Comment**

BHP Billiton proposed this clause as a means of streamlining reporting requirements, which will aid all parties in the review of documents. BHP Billiton believes that the benefits to this clause remain in light of amalgamation of the licences and disagrees with INAC's suggestion that it be removed.

#### INAC Item 21 – Section 4.3 Terms and Conditions (pg 17-19)

INAC makes various suggestions for amalgamating seemingly similar sections.

#### **BHP Billiton Comment**

BHP Billiton disagrees with these suggestions. Although the wording in these sections appears to be similar, INAC has not provided a detailed analysis of the effects of such an amalgamation on the terms and conditions of the Main Site Water Licence. Therefore, the Board cannot be sure whether the suggestion meets its directive. It is BHP Billiton's submission that the two licences have been amalgamated to the greatest extent possible in its draft amalgamated water licence. Please refer to INAC Item 18 for further comment.

#### INAC Item 22 – Section 4.3 Submission Timelines for Management Plans (pg 18)

"INAC also has concerns in regard to changes proposed by the proponent regarding submission timelines for Plans and Plan updates to be provided to the board. Most of these changes propose a reduction from 90 to 45 days prior to construction. Considering that plans will need to be distributed, reviewed, and approved, INAC proposes that the deadline of 90 days prior remain."

BHP Billiton believes that the management plans can be reviewed within the 45 days proposed and notes that the IEMA has acknowledged this for all of the plans except the Waste Rock and Ore Storage Management Plan. As stated in respect of IEMA's specific concern, BHP Billiton is not opposed to IEMA's suggested 60-day submission timeline for the Waste Rock and Ore Storage Management Plan if the Board is so disposed (IEMA Item 10).

#### INAC Item 23 - Section 4.4, SNP Amalgamation (pg 19)

"For administrative efficiency and clarity, the requirements for SNP Stations 1616-30, 1616-43 and 0008-Sa3 should be combined in the amalgamated license. The frequency, constituents and methods would then be the same for all discharge locations. This should also hold true for the toxicity testing requirements."

#### **BHP Billiton Comment**

BHP Billiton disagrees with this suggestion. Although the requirements in the two SNP's appear to be similar, INAC has not provided a detailed analysis of the effects of such an amalgamation on the terms and conditions of the Main Site Water Licence. Therefore, the Board cannot be sure whether the suggestion meets its directive. It is BHP Billiton's submission that the two licences have been amalgamated to the greatest extent possible in its draft amalgamated water licence. Please refer to INAC Item 18 for further comment.

#### INAC Item 24 - Section 4.4, SNP Mixing Zone (pg 20)

"Three stations should be established in a circular fashion surrounding the point discharge in Horseshoe Lake (20 meter radius). These stations would be monitored at surface, mid-depths and bottom on a bi-weekly basis, during periods of discharge to monitor and assess the mixing characteristics of the effluent (it is assumed the effluent discharge will be seasonal and intermittent)."

#### **BHP Billiton Comment**

BHP Billiton understands INAC's desire to assess the mixing characteristics of the effluent but disagrees with INAC's suggested monitoring program to undertake such an assessment. INAC has not provided any technical analysis to support their suggested monitoring scheme.

Based on BHP Billiton's operating experience at other mine sites, a more direct approach to validating effluent mixing of the discharge is through a plume dispersion study. This is an accepted practice.

Rather than a monitoring approach BHP Billiton suggests to undertake a plume dispersion study to confirm the mixing characteristics of the effluent. BHP Billiton suggests that this be included as a study under the AEMP which is to be reviewed and approved by the Board prior to the construction of the Sable site.

#### INAC Item 25 - Section 4.4, SNP Little Reynolds Pond (pg 20)

"The SNP Station 0008Pi6 should be moved from the downstream position from Little Reynolds Pond to the upstream portion closer to the waste rock storage pile."

#### **BHP Billiton Comment**

BHP Billiton does not object to this change if the Board is so disposed.

#### INAC Item 26 – Appendix 1 (pg 20)

Review of the BHP Proposed Environmental Quality Criteria for the Sable Site.

#### **BHP Billiton Comment**

In support of its recommendations regarding BHP Billiton's proposed EQC, INAC has relied heavily on the conclusions contained within Appendix 1 to INAC's intervention. BHP Billiton has a number of concerns regarding the technical accuracy of the analysis in Appendix 1, which has led BHP Billiton to believe that the conclusions in Appendix 1 are unsupported and shouldn't be relied on by the Board.

BHP Billiton has conducted a technical review of the report provided in Appendix 1 of the INAC Intervention. The report was found to contain a number of inconsistencies that may affect its conclusions and those adopted by INAC in its intervention. Several examples are provided below to illustrate this point. BHP Billiton has responded to each of INAC's recommendations and suggestions to the Board and, therefore, these examples are provided for the benefit of those who read the supporting technical document.

Appendix 1 references a paper by Spencer et al. (2008) that BHP Billiton may not have included in its assessment of a WQO for ammonia. BHP Billiton has obtained and reviewed the referenced paper. Section 5.1.6.1 (Appendix 1) appears to contain a unit error which puts the results out by three orders of magnitude. The original unionized ammonia concentrations reported by Spencer et al. (2008) were as ppm, (which is equivalent to mg/L), whereas in Appendix 1 they are reported incorrectly as  $\mu$ g/L. Appendix 1 incorrectly concludes on page 15, that:

"This species [slimy sculpin] is found in the Horseshoe watershed and concentrations causing substantive effects in the laboratory are more than two orders of magnitude lower than the EQC (average value = 4 mg/L proposed by BHP Billiton)"

Based on the correct units BHP Billiton has evaluated and concluded that the results from Spencer et al. (2008) are completely consistent with BHP Billiton's proposed ammonia EQC.

Appendix 1 states in error (page 11) that "After operations at the Sable pit are completed the dike will be breached allowing previously retained sediments containing metals to move downstream." The dike will be breached at closure at the top, however the sediments contained in Two Rock Sedimentation Pond will have settled to bottom. BHP Billiton will conduct the breach in a manner to prevent the resuspension of sediments. At closure there will be no new sources of sediment input from the open pit, and flows to Two Rock will be limited to surface run-off. The details of closure for Sable (and Two Rock) are covered in the ICRP that is undergoing the Board's review process. Copies of this report have been provided to the Board and, therefore to INAC.

Section 5.1.6.2.of Appendix 1 contends that the ammonia EQC proposed by BHP Billiton based on USEPA research would not be protective of water fleas (Daphnia spp.). This conclusion is based on a presentation by the author of Appendix 1. However, the LC<sub>50</sub> value relied on to support this statement is not found in the presentation. A technical review of the presentation reveals that it is insufficient to support the above conclusion.

Further, Section 5.1.6.2 of Appendix 1 appears to contain an error regarding the duration of testing which was 48hrs in the presentation and 4 days in this section of the Appendix. BHP Billiton notes further that this section of Appendix 1 apparently confuses EQC that would be applied in Two Rock Sedimentation Pond with WQO that would be applied in Horseshoe Lake.

#### 2.4 Environment Canada (EC) Interventions

#### EC Item 1 - 3.1 EQC (pg 5)

EC supports the use of the proposed discharge criteria for the duration of the term of the amalgamated licence, as presented in the draft water licence submitted by BHPB, with the addition of nitrate as a regulated parameter. The nitrate limit should be set such that the WQO of 4.5 mg/L NO3-N is maintained in Horseshoe Lake.

#### **BHP Billiton Comment**

BHP Billiton rejects EC's suggestion that the Board adopt BHP Billiton's "proposed discharge criteria for the **duration** of the term of the amalgamated licence". BHP Billiton recognizes that the Board has the discretion to change conditions of a water licence when it is up for renewal. However, BHP Billiton believes that discretion should be exercised sparingly. The vested nature of the rights held in an existing water licence as well as principles of natural justice dictate that conditions of a licence should only be changed by the Board when a party to the public hearing has brought forward sufficient evidence to demonstrate to the Board that such a change is

necessary. The Board's approach to renewal proceedings reflects similar understanding of the onus on parties proposing changes to existing licences. A mine operator, in this case BHP Billiton, is not required to defend all conditions already within the licence during a renewal proceeding.

Nitrate is currently a parameter in the SNPunder the list of Major Ions and it is addressed in the WAMP. The existing AEMP includes nitrate and, when the AEMP is updated to include the Sable and Pigeon sites, nitrate will continue to be included. BHP Billiton has shown that this is an appropriate manner to manage nitrate and that an EQC is not necessary.

EC has not provided a compelling reason why nitrate should be added as an EQC.

EC Item 2 - 3.2 Toxicity Testing (pg 5)

"EC recommends that chronic toxicity testing be done on Station 0008-Sa3 effluent annually."

#### **BHP Billiton Comment**

BHP Billiton does not object to this change with the understanding that this sampling is to commence with the construction of Sable site.

#### EC Item 3 – 3.3 Recommendation on Terms and Conditions – Pit Lake Study (pg 6)

"Part I.1. The Pit Lakes Study Terms of Reference (ToR) have already been submitted, and in March 2008 a presentation was given to update stakeholders. Some missing items from the ToR were flagged, and a status report was slated for Dec. 31, 2008. This work has fallen under the closure planning process, and this section of the licence should be updated to reflect the current status of the work, notably setting the direction for next steps, whether under the reclamation research plans, or in Part. I."

#### **BHP Billiton Comment**

The required terms of reference was approved by the Board and therefore this clause has been satisfied and can be removed from the licence. There is no need for the water licence to reflect the current status of the work or determine next steps because the pit lakes study is being managed under the Reclamation Research Plan as part of the Board's ICRP process.

EC Item 4 - 3.3 Recommendation on Terms and Conditions (pg 6 - 7)

Several recommended changes to the Terms and Conditions

BHP Billiton assumes that EC made a typographical error and that these recommendations refer to Section 3 of the draft amalgamated water licence. BHP Billiton does not object to the changes proposed by EC in this topic with the exception of that change discussed in EC Item 3, above.

#### 2.5 Fisheries and Oceans Canada (DFO) Interventions

DFO Item 1 – Recommendation on EQC (pg 4)

"...it is the recommendation of DFO that the WLWB accepts the EQC proposed by BHP on an interim basis with the understanding that EQC for the entire site will be open for debate when the amalgamated Water Licence comes up for renewal in 2013."

#### **BHP Billiton Comment**

Certainty in the terms of a water licence, and particularly EQC, is essential to BHP Billiton's ability to design, build and operate the project. Decision-making regarding future developments such as Pigeon and Sable can only be made with the fullest possible knowledge of the terms and conditions that will apply to those developments. This is particularly true during times when capital for new development is scarce, such as during the current global economic crisis. The "interim EQC" suggested by DFO do not provide adequate certainty and would hamper BHP Billiton's ability to progress the projects under this licence.

Finally, BHP Billiton rejects DFO's suggestion that "the entire site will be open for debate...in 2013". BHP Billiton recognizes that the Board has the discretion to change conditions of a water licence when it is up for renewal. However, BHP Billiton believes that discretion should be exercised sparingly. The vested nature of the rights held in an existing water licence as well as principles of natural justice dictate that conditions of a licence should only be changed by the Board when a party to the public hearing has brought forward sufficient evidence to demonstrate to the Board that such a change is necessary. The Board's approach to renewal proceedings reflects similar understanding of the onus on parties proposing changes to existing licences. A mine operator, in this case BHP Billiton, is not required to defend all conditions already within the licence during a renewal proceeding.

#### DFO Item 2 – Recommendation on water withdrawal (pg 4)

"DFO recommends that Thinner Lake and Little Lake be removed from the amalgamated Water Licence if it is correct that they are no longer used as water sources by BHPB. If these lakes are required as water sources, DFO is willing to work with BHPB to determine withdrawal amounts that will not result in negative impacts to fish and/ or fish habitat."

#### **BHP Billiton Comment**

This recommendation deals with matters in the Main Site Water Licence and is therefore beyond the scope of review on this renewal. As the Board directed, the terms and conditions of the Main

Site Water Licence will only be changed where such a change is necessary to effect the amalgamation.

#### DFO Item 3 – Recommendation on intake screen (pg 5)

"DFO recommends that both conditions be changed to: The freshwater intake pumps shall be equipped with a screen that ensures the protection of fish from impingement or entrainment, as outlined in Fisheries and Oceans Canada Freshwater Intake End-of-Pipe Fish Screen Guideline and ensuring that these calculations complete with pump specifications are maintained on-site at the pumping locations."

#### **BHP Billiton Comment**

To the extent that this recommendation deals with matters in the Main Site Water Licence, it is beyond the scope of review on this renewal. As the Board directed, the terms and conditions of the Main Site Water Licence will only be changed where such a change is necessary to effect the amalgamation.

BHP Billiton does not object to DFO's proposed changes to Section 3 of the draft amalgamated water licence.

#### DFO Item 4 – Recommendation on Pigeon Stream Diversion (pg 5)

"DFO has no objection to the submission time line being modified but recommends retaining the wording related to fish habitat and fish passage in Condition 12."

#### **BHP Billiton Comment**

BHP Billiton intends to complete an appropriate channel to support fish passage and fish habitat, however BHP Billiton disagrees with DFO's recommendation that this should be included in the water licence. The fish habitat requirements of the Pigeon Stream Diversion will be reviewed by and are subject to the approval of Fisheries and Oceans Canada under Fisheries Act Authorization SC992037. It is a matter of fundamental fairness to the Licensee that duplicative regulatory approvals not be required.

#### DFO Item 5 – General Comment (pg 6)

"...it is the opinion of DFO that there are still opportunities to streamline the document (i.e one set of definitions for the entire Water Licence rather than two)."

BHP Billiton has made every effort to draft an amalgamated water licence in accordance with the Board's directive and with a view to enhancing administrative efficiency and disagrees with INAC's suggestions in this regard.

The Board, in their letter of September 24, 2008, ordered the amalgamation of the Main Site Water Licence and the Sable Pigeon and Beartooth Licence. However, as part of this amalgamation, the Board ordered that no substantive changes be made to the Main Site Water Licence. The Board stated:

"The Board has therefore determined that the amalgamation process will be restricted and will not allow for changes to the scope of the existing Main Licence or the SPB Water Licence. Both scopes will instead be combined into two parts within the amalgamated licence. Additionally, the terms and conditions of the Main Licence will only be changed where necessary to incorporate terms and conditions relating to the Sable, Pigeon and Beartooth development. Substantive changes to the existing terms and conditions of the Main Licence, for example the existing effluent quality criteria, will not be considered during this process."

Given the Board's directive that the two water licences are to be amalgamated, BHP Billiton strongly supports the additional Board directive that the terms and conditions of the Main Site Water Licence remain unchanged and has made every effort to comply. The Main Site Water Licence is the product of a renewal process that spanned over 18 months and involved numerous submissions, a public hearing, and input from the very parties before the Board on the present renewal. Since that time BHP Billiton has designed and implemented operations management plans based on the Main Site Water Licence as it presently stands and is conducting operations to meet the terms of that licence. It is BHP Billiton's position that it would be contrary to the principles of fairness and natural justice for the Board to change the existing terms and conditions of the Main Site Water Licence at this point.

In drafting an amalgamated water licence BHP Billiton undertook to create a workable, efficient and streamlined document while at the same time complying with the Board's order of September 24, 2008. Drafting the amalgamated water licence started with a review of the definitions contained in the SPB and Main Site Water Licences. For terms that were defined in either of the water licences, many of these terms could not be amalgamated into a common definitions section and caused difficulties when considering amalgamation of other sections, because:

- 4. The term was defined only in one licence (for example, "Seepage" is defined only in the Main Site Water Licence);
- 5. The term was defined differently (for example, "Minewater" is defined differently in the two licences); or

6. The term was similarly defined in both licences but the definition included defined terms that were not common to both licences (for example, "Acid/Alkaline Rock Drainage" is similarly defined in both licences but contains the word seepage which is a defined term in the Main Site Water Licence but not in the SPB Water Licence and also contains the term groundwater which is differently defined in the two licences).

Consequently, when looking at amalgamating any section of the two licences, despite apparent similarities in wording, the effect of amalgamation is often substantial given the different definitions. Amalgamation of these apparently similar sections would have produced substantive changes to the Main Site Water Licence, an effect prohibited by the Board's order.

The SNP provides one example of the complications and cascading effects of considering amalgamation of definitions and terms that may appear to be similar or the same. Similar wording is used in each water licence in relation to the SNPs. However, due to the differences in definitions these sections cannot be amalgamated without substantially changing the terms of the Main Site Water Licence.

The Main Site Water Licence states:

Part B, Item 12: Meters, devices or other such methods used for measuring the volumes of water used and Waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

The SPB Water Licence states:

Part B, Item 5: Meters, devices or other such methods used for measuring the volumes of water used and Waste Discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

In the Main Site Water Licence discharge is not a defined term whereas in the SPB Water Licence "Discharge" is defined to mean "the direct or indirect release of any water or Waste to the Receiving Environment". Therefore, in the SPB Water Licence the definitions of "Discharge" and "Receiving Environment" are involved in interpreting and enforcing the clause whereas neither is involved in the Main Site Water Licence. Consequently, these sections cannot be amalgamated without substantially changing the meaning of a term in the Main Site Water Licence.

## 2.6 Independent Environmental Monitoring Agency (IEMA) Intervention

#### IEMA Item 1 – Recommendation regarding nickel (pg 1, paragraph 4)

"BHP Billiton has proposed a clause in the draft licence that would require submission of the nickel study within 18 months of the licence issuance (Part I, s.3). The **Agency recommends** that a condition requiring that the proposed value for nickel be submitted a minimum of 12 months prior to any discharge from the Two Rock Sedimentation Pond also be included in the licence."

#### **BHP Billiton Comment**

BHP Billiton does not object to this recommendation if the Board is so disposed.

#### IEMA Item 2 – Recommendation regarding chloride (pg 1, paragraph 5)

"The **Agency recommends** that the Board provide written direction to BHP Billiton requiring development of a site wide Water Quality Objective and site specific Effluent Quality Criteria for chloride discharges from the Long Lake Containment Facility and any other water bodies where the Objective may be exceeded. This work could be included in the updated Watershed Adaptive Management Plan, preferably within one year, and may subsequently lead to an effluent quality criterion for chloride in the water licence."

#### **BHP Billiton Comment**

BHP Billiton rejects any recommendation that impacts the Main Site Water Licence, as this application is for the renewal of the SPB Water Licence only. Therefore there can be no requirement for an EQC for the Long Lake Containment Facility. As regards to the remainder of the recommendation chloride is included in the WAMP. BHP Billiton will continue its work on developing a site specific WQO for chloride as part of the WAMP, as committed to the Board in the appended letter.

#### IEMA Item 3 – Recommendation regarding nitrate (pg 2, paragraph 2)

"In order to assess accuracy of these predictions, the **Agency recommends** that a requirement for monitoring be included in the Surveillance Network Program and the Aquatic Effects Monitoring Program. Nitrate should also be addressed in the updated Watershed Adaptive Management Plan."

This recommendation is already reflected in the water licence and related documents. Nitrate is currently a parameter in the SNP under the list of Major Ions and it is addressed in the WAMP. The existing AEMP includes nitrate and, when the AEMP is updated to include the Sable and Pigeon sites, nitrate will continue to be included.

#### IEMA Item 5 – Recommendation regarding biochemical oxygen demand (pg 2, paragraph 3)

"The Agency notes that in the main licence there is a requirement for the Maximum Average Concentration for Biochemical Oxygen Demand to remain below 40.0 mg/L. The **Agency recommends** that a similar requirement for the discharge into Horseshoe Lake be included in the Sable Pigeon Beartooth section of the new licence."

#### **BHP Billiton Comment**

BHP Billiton disagrees with IEMA's recommendation that the water licence have and EQC for Biological Oxygen Demand (BOD). The IEMA suggests that the water licence have an EQC for BOD similar to that of the Main Site Water Licence. BOD is a measure of oxygen demand caused by the input of organic material. BOD is an EQC for the EKATI Main site because treated effluent from the sewage treatment plant is deposited in the LLCF. However, this is not the case at the Sable site where sewage will be removed to the EKATI Main Site. Therefore, a BOD EQC is not relevant for the Sable site.

Additionally, any potential issues with dissolved oxygen would be identified through the AEMP which includes water column profiling for dissolved oxygen and sampling for other related factors such as total organic carbon.

IEMA Item 6 – Recommendation regarding monitoring for selenium, molybdenum, chloride and nitrate (pg 2, paragraph 5)

"In order to verify these predictions, the **Agency recommends** that the Board include a requirement to monitor these variables as part of the Aquatic Effects Monitoring Program and/or Surveillance Network Program. A range of numerical thresholds and triggers in the Watershed Adaptive Management Plan to deal with any measured deviations from these predictions should also be provided."

#### **BHP Billiton Comment**

This recommendation is already reflected in the water licence and related documents. These four parameters are currently included in the SNP:

- Chloride under the list of Major Ions,
- Selenium and molybdenum are part of the ICP-MS metal scan, and
- Nitrate-Nitrogen is included in the list of Nutrients.

#### BHP Billiton's Comment on Reviewer Interventions

These parameters are currently part of the AEMP and BHP Billiton will include them in updates to that program.

In the WAMP, BHP Billiton has defined numerical thresholds and triggers for these parameters and they will be managed through this plan.

IEMA Item 7 – Recommendation regarding Pigeon Stream Diversion (pg 3, paragraph 2)

"At a minimum, the **Agency recommends** that BHP Billiton be required to create a channel that is safely passable for fish to and from Fay Lake."

#### **BHP Billiton Comment**

BHP Billiton intends to complete an appropriate channel to support fish passage and fish habitat, however BHP Billiton disagrees with IEMA's recommendation that this should be included in the water licence. The fish habitat requirements of the Pigeon Stream Diversion will be reviewed by and are subject to the approval of Fisheries and Oceans Canada under Fisheries Act Authorization SC992037. It is a matter of fundamental fairness to the Licensee that duplicative regulatory approvals not be required.

IEMA Item 8 – Recommendation regarding air quality (pg 3, paragraph 3)

"The **Agency recommends** that, at a minimum, the original clause on air quality monitoring be left in place."

#### **BHP Billiton Comment**

BHP Billiton disagrees with IEMA's recommendation. BHP Billiton believes that regulation of air quality is not within the jurisdiction of the Board. Neither the MVRMA nor other statutes give the Board jurisdiction over air.

IEMA Item 9 – Recommendation regarding use of Beartooth Pit (pg 3, paragraph 4)

"...the **Agency recommends** that a clause be included in the licence to require BHP Billiton to provide the necessary analysis prior to the Board making a decision on the future use of the Beartooth Pit."

#### **BHP Billiton Comment**

BHP Billiton disagrees with IEMA's recommendation. The SPB Water Licence already includes a process for the Board to approve BHP Billiton's use of Beartooth Pit. This process is underway as an update to the Wastewater and Process Kimberlite Management Plan. Through this process

#### BHP Billiton's Comment on Reviewer Interventions

the Board can request additional information if it is so disposed. Therefore there is no need for the addition of a clause to the water licence as proposed IEMA.

#### IEMA Item 10 – Recommendation regarding review timelines (pg 3, paragraph 5)

"In most instances, 45 days should be adequate, if tight. However, given the importance of the Waste Rock and Ore Storage Management Plan, the **Agency recommends** that 60 days be allocated for any reviews of this plan."

#### **BHP Billiton Comment**

BHP Billiton believes that the Waste Rock and Ore Storage Management Plan can be reviewed within the 45 days proposed; however, BHP Billiton is not opposed to this 60 day timeline for this Plan if the Board is so disposed.

#### IEMA Item 11 – Recommendation regarding cumulative effects (pg 3, paragraph 6)

"The **Agency recommends** that the original wording be retained. Alternately, the Agency suggests that the following wording be incorporated: 'an evaluation of the Ekati mine's contribution to cumulative effects in the region'."

#### **BHP Billiton Comment**

BHP Billiton disagrees with IEMA's recommendation and believes that BHP Billiton's proposed change to Part K Item 4 h) is appropriate. The evaluation of the Lac de Gras region is not the responsibility of any individual mine operator. BHP Billiton manages project-related effects as those are the only effects over which the company has any control and ability to mitigate.

BHP Billiton will continue to provide information from its monitoring information to agencies with regional responsibilities such as INAC to enable them to monitor regional cumulative effects.

## IEMA Item 12 – Recommendation regarding Receiving Environment definition (pg 4, paragraph 5)

"The **Agency recommends** that the definition of receiving environment remain unchanged and include the terrestrial component. In addition, the **Agency recommends** that Part G, Item 11 (d) be amended to read "All Discharges (with the exception of runoff from watered roads) by the Licensee from the Project shall meet the following effluent quality requirements:"

BHP Billiton disagrees with IEMA's proposed recommendation for the definition of Receiving Environment and notes that INAC has not objected to BHP Billiton's proposed change. As the wording of Receiving Environment is currently drafted, BHP Billiton is concerned with the potential for a technical non-compliance unrelated to any environmental effects. For example, if water seeps off a rock pile onto the tundra, BHP Billiton could be immediately non-compliant even if the water does not enter a water body. Consequently, IEMA's suggestion to exclude run-off from watered roads does not alleviate all of BHP Billiton's concerns with regards to the potential complications arising out of the current wording. Furthermore, the terrestrial component is adequately protected under the land leases and land use permits that BHP Billiton holds in relation to the project. To also include a terrestrial component in the Water Licence would complicate an already regulated component without providing any additional benefit.

## **Appendix 1**

## BHP Billiton Letter to the Board February 20, 2009

Site-Specific Water Quality Objective for Chloride



#### **BHP Billiton Diamonds Inc.**

**Operator of the EKATI Diamond Mine** 

BHP Billiton Diamonds Inc. #1102 4920-52<sup>nd</sup> Street Yellowknife NT Canada X1A 3T1 Tel 867 669 9292 Fax 867 669 9293 bhobilliton.com

February 20, 2009

Wek'èezhìi Land and Water Board P.O. Box 2130 Yellowknife, NT X1A 2P6 Attention: Ms. Violet Camsell-Blondin

Attention: Ms. Violet Camsell-Blondin, Chair

Dear Ms. Camsell-Blondin:

#### Re. Site-Specific Water Quality Objective for Chloride

BHP Billiton Diamonds Inc. (BHP Billiton) has proposed to the Board that an Effluent Quality Criteria (EQC) for chloride is not necessary for the renewal of the Sable, Pigeon and Beartooth Water Licence (MV2001L2-0008) and has recommended that the requirement for the production of a report on chloride be removed from Part I Item 3 of that licence.

A prerequisite to developing an EQC for chloride has been the development of a site specific water quality objective (WQO), which BHP Billiton has completed and which is currently under review by the Board. Several interveners to the water licence renewal proceeding have asked how the process for the WQO for chloride will proceed in light of the recommended change to the water licence. It has been suggested that this process could continue as part of the Watershed Adaptive Management Plan (WAMP), which already includes chloride and a direct reference to the development of a WQO. BHP Billiton agrees with this suggestion.

BHP Billiton will continue to participate in the Board's process for a WQO for chloride as part of the WAMP.

We hope that you find the information to be clear and helpful. Please contact Eric Denholm, Superintendent - Traditional Knowledge and Permitting, at 669-6116 if you have any questions.

Sincerely,

**BHP Billiton Diamonds Inc.** 

- original signed by Eric Denholm for -

Laura Tyler
Manager – Environment, Community, Communications and Planning
EKATI Diamond Mine