

# 1 INTRODUCTION

## 1.1 DE BEERS

### 1.1.1 Project Proponent

*De Beers is the owner and operator of the Snap Lake property*

De Beers Canada Mining Inc. (De Beers) has been the operator of the Snap Lake Diamond Project since September 2000 and has owned 100% of the Snap Lake property since February 2001. As such, De Beers Canada Mining Inc. is the proponent of this environmental assessment (EA). De Beers Canada Mining Inc. is part of the international De Beers group of companies and, for simplicity, the term 'De Beers' is used in this report to cover both De Beers Canada Mining Inc. and the parent holding company.

### 1.1.2 Corporate Profile

*De Beers is a leader in all aspects of the diamond industry*

Since 1888, De Beers has been involved in all aspects of the diamond industry and is today the recognized industry leader. De Beers' primary business is the exploration for, and the mining and marketing of, rough diamonds. The company has developed skills and expertise at each stage of the diamond industry. De Beers is the only major international mining company dedicated solely to diamonds and today operates 20 mines that, together, produce almost half the world's gem diamonds, by value.

*De Beers became a private company in June 2001*

De Beers existed as a publicly traded company for over a century. However, on June 1, 2001, it became a private company owned by DB Investments, which is owned as follows:

- the Oppenheimer family 45%;
- Anglo American PLC 45%; and,
- Debswana 10% (Debswana is a 50/50 joint venture between De Beers and the Government of Botswana).

*De Beers has demonstrated its commitment to environmental protection*

De Beers aims to conduct its operations in a way that minimizes the impact on the natural environment while achieving the greatest socio-economic benefit. De Beers has been compliant with environmental legislation in over 100 years of operation in southern Africa. In all its operations, De Beers treats local environmental legislation as the minimal acceptable standard.

***De Beers is committed to ISO 14001 certification***

The De Beers environmental program includes having all major operations certified to ISO14001, which is the International Organization for Standardization's certification program for environmental management. It enables De Beers to manage the environmental effects of its operations, while adhering to the requirements not only of the standard itself but also of international norms, legislation, and regulations. All of the company's main mines, and the geology and exploration divisions in southern Africa and Canada, earned this designation by the end of 2001.

***De Beers has won environmental management awards***

De Beers has been honoured with a number of awards for its environmental performance in South Africa. These include the National Premium Award for Environmental Management, one of the country's most prestigious awards, presented to De Beers in 1995 for an innovative water conservation project that investigated ways of minimizing the effects of the Venetia mine on the Limpopo River. In 2000, the South African Department of Mineral and Energy instituted the Excellence in Mining Environmental Management awards (EMEM). De Beers' Koffiefontein and Premier mines won first prize, while the Finsch and Koningnaas mines were awarded second place, in their respective categories.

***De Beers has created reserves to protect wildlife***

Throughout its history, De Beers has fostered and protected wildlife on its properties. Nature reserves were created at all mining operations to conserve local wildlife and to increase environmental awareness through education. Approximately 90,000 hectares (ha) of non-mining areas are used for conservation.

***A uniform standard practice is applied during operations and closure***

In all its operations, De Beers endeavours to apply a uniform best standard practice. Environmental management systems address environmental needs at every stage of its operations. These practices are aimed at leaving a productive, self-sustaining, and hazard free post-mining environment. De Beers fulfils its commitments to remediate land after mining operations cease, using current techniques. In several cases, the company has also returned to retreat historic mining sites as better environmental technology has become available.

***De Beers set a new safety record in 2000***

De Beers also strives to improve the safety record at its 20 existing mines in southern Africa, which have, in total, approximately 20,000 employees. In 2000, all mines operated by De Beers received five-star ratings in the South African *National Occupational Safety Association* programme. In 2000, De Beers set a record for their lowest lost time injury frequency rate (LTIFR), including two mines that recorded a zero LTIFR.

***The De Beers fund supports more than 500 socially responsible ventures per year***

De Beers also balances its commercial success with social responsibility. Since the early 1970s, the company has administered a fund to direct social investment spending in South Africa. Since 1998, this has been known as the De Beers Fund. Each year, this fund supports more than 500 ventures, including practical skills training, small business initiatives, job creation, youth development, environmental conservation, and community welfare projects.

***De Beers record is one of sustainable economic diversification***

De Beers is aware of the economic benefit its operations have brought to communities in Southern Africa; it also understands the serious effects the closure of a mine can have on a community. For this reason, De Beers is involved in a variety of activities to encourage sustainable economic diversification. For example, a long-term socio-economic study at the coastal Namaqualand property has resulted in the development of a marine aquaculture industry. In Kimberley, where De Beers has been active for 130 years, the imminent closure of old underground mines is being balanced by major investment in the treatment of old tailings dumps, which will extend employment opportunities, as well as having positive environmental implications. At Kimberley, De Beers is also involved in a number of job creation and empowerment initiatives.

***It is also involved in a business development initiative***

To promote economic diversity in Botswana, De Beers and the Debswana Diamond Company have created a business development initiative. This provides equity funding or business loans at competitive rates. In the three years of its existence, this initiative has supported 20 businesses, including a gas station, a motor parts supply business, a construction company, a steel fabrication business, a vending machine company, an Internet café, and a chicken feed manufacturer.

***De Beers targets local needs***

De Beers tailors its social investment to local needs. In southern Africa, HIV/AIDS has reached tragic proportions and De Beers is a leader in education programs and in supporting its HIV-positive employees.

***De Beers has partnered with the World Health Organization***

Africa contains some of the only areas where the paralyzing disease polio is still found. Since 1999, De Beers has partnered with the World Health Organization (WHO) and UNICEF in a polio eradication program. De Beers' donation of US\$2.7 million is directed to a campaign in Angola to vaccinate 3.3 million children.

## **1.1.3 Canadian Corporations**

***There are three Canadian companies***

The company operates in Canada as three companies: De Beers Canada Corporation, De Beers Canada Exploration Inc., and De Beers Canada Mining Inc. The organization chart is shown in Figure 1.1-1.

**De Beers Canada Mining Inc.**

**Figure 1.1-1 Organization Chart**

***De Beers Canada Corporation looks after corporate and public affairs***

From the head office in Toronto, De Beers Canada Corporation looks after corporate and public affairs for the De Beers group of companies in Canada. Richard Molyneux is president and chief executive officer (CEO) of De Beers Canada Corporation and De Beers Canada Mining Inc.

***De Beers Canada Exploration Inc. looks after exploration***

Exploration activities in Canada and Greenland are directed from the De Beers Canada Exploration Inc. head office in Toronto, which also houses De Beers' Canadian mineralogical lab. Toronto is also the regional office for exploration throughout the Americas and Europe.

***Exploration programs are underway across Canada***

In Canada, exploration programs are currently underway in the Northwest Territories (NWT), Nunavut, Saskatchewan, Manitoba, Ontario, and Quebec. These projects employ a staff of approximately 65, including more than 20 geologists and geophysicists. De Beers Canada Exploration Inc. is managed by Joe Joyce, President and CEO.

***De Beers is demonstrating environmental and safety stewardship at four advanced exploration programs in Canada***

De Beers has advanced exploration programs at Fort à la Corne, Saskatchewan; Attawapiskat, Ontario (Victor Project); and Kennedy Lake, NWT (Gahcho Kue Project), in addition to the Snap Lake Diamond Project. To February 2002, the company has experienced no major environmental incidents at any of these sites and no employees have suffered major injuries. All of De Beers' Canadian sites are regularly inspected by provincial/territorial and federal government staff, many of whom have commented on the company's commitment to safety in the workplace.

*De Beers Canada Mining Inc. looks after the Snap Lake Diamond Project*

De Beers Canada Mining Inc. is responsible for mine development projects. The group's current focus is moving the Snap Lake Diamond Project through the regulatory review process in the NWT. De Beers Canada Mining Inc. has an office in Yellowknife and a project engineering office in Vancouver. The Snap Lake Diamond Project will become, subject to the necessary approvals, De Beers' first mine outside southern Africa.

## 1.2 PROJECT OVERVIEW

### 1.2.1 Exploration Program

*A kimberlite ore body was discovered at Snap Lake by Winspear in 1998*

Snap Lake is a small lake in the barrenlands, located approximately 220 kilometres (km) northeast of Yellowknife, Northwest Territories (NWT) (Figure 1.2-1). A junior exploration company, Winspear Resources Ltd. (Winspear), began exploration in the area in 1995. The Snap Lake property was discovered in 1998. The kimberlite ore body discovered at Snap Lake is unusual in that it is a dyke that extends beneath the lake, rather than the pipe formation that is more commonly seen in the NWT.

*De Beers Canada Mining Inc. became the operator of the advanced exploration program*

Winspear, as the permitted operator, began an underground advanced exploration program in 1999. On June 13, 2000, Winspear changed its name to Winspear Diamonds Inc. De Beers Canada Corporation purchased Winspear Diamonds Inc. in the fall of 2000. Following the purchase of Winspear, De Beers held a majority ownership in the Snap Lake property and became the operator of the advanced exploration program. Aber Diamond Corporation (Aber) held a minority interest in the property. Later that year, on November 15, Winspear Diamonds Inc. became De Beers Canada Mining Inc. and in February 2001 De Beers bought Aber's interest in the property.

*The Snap Lake site is currently operating under advanced exploration program permits*

The Snap Lake site is currently permitted as an advanced exploration program. The permits were issued in December 1999 to Winspear Resources and subsequently assigned to De Beers Canada Mining Inc. in July 2000. The advanced exploration program is operating under a Type B water licence (#N1L2-1735) from the Northwest Territories Water Board that is valid from December 1999 to December 2003. The Class A land use permit (#N1999C0081) was received in December 1999 from Indian and Northern Affairs Canada (INAC) and will expire in December 2002. The advanced exploration program permits cover 99 claim blocks (13 mineral leases and 86 mineral claims) in the Camsell Lake area (Figure 1.2-2).

**Figure 1.2-1 Location of Snap Lake Diamond Project Northwest Territories**

***The Snap Lake site has been inspected by a number of agencies***

Since the water licence and the land use permit for the Snap Lake advanced exploration program were issued, regulatory agencies have completed a number of inspections. The Water Resource Officer has conducted inspections under the water licence, and the Resource Management Officer has conducted inspections with respect to the land use permit on a non-routine basis. Both agencies fall under the direction of INAC. The Worker's Compensation Board (Mines Inspection Branch) has conducted routine inspections on the Snap Lake Diamond Project with respect to the health and safety of all workers on site including De Beers employees, and contractors and their employees. A detailed report on De Beers' environmental and safety record in the NWT is provided as Appendix I.1.

***Facilities have been constructed to support the advanced exploration program***

The purpose of the advanced exploration program was to further delineate the grade, value, and variability of the kimberlite dyke that begins on the northwest peninsula, continues beneath Snap Lake, and extends under the land north of Snap Lake. Permits were issued to extract up to 40,000 tonnes (t) of kimberlite during the program which included underground extraction. The program also included construction of an on-site processing plant, a processed kimberlite containment facility, a power generating facility, a camp, an airstrip, an explosives storage facility, a fresh water intake system, and fuel storage and distribution facilities (Figure 1.2-3). During 1999 to 2001, a 35-km winter access road was constructed annually to the site exiting at kilometre 256 of the Tibbitt-Contwoyto winter road. Year-round access to the site is by aircraft from Yellowknife.

***Underground exploration activities are complete, but some activities will continue***

The underground exploration portion of the advanced exploration program was completed in September 2001. The underground exploration workings were allowed to flood with water when exploration activities were complete. Periodic surface exploration on the claim blocks may occur as outlined in the 1999 advanced exploration program project description. A limited number of personnel will remain on site for the following purposes:

- to maintain infrastructure, equipment, and the sewage treatment plant;
- to manage the water management pond (*i.e.*, water level monitoring and dam inspections); and,
- to continue environmental monitoring and water sampling as per the surveillance network program outlined in the water licence.

**Figure 1.2-2 Camsell/Snap Lake Mineral Claims/Leases and Mine Surface Leases  
(Applied For)**



**Figure 1.2-3 Snap Lake Advanced Exploration Program General Site Arrangement**

***Personnel will remain on site for maintenance, monitoring, and some reclamation***

Personnel will remain on site to continue these activities until such time as permits to construct and operate a mine are received. Reclamation of areas not currently used or planned for future use will be done in consultation with the Mackenzie Valley Land and Water Board, the Land Use Inspector and Water Resource Officer, and as per the advanced exploration program abandonment and restoration plan.

## **1.2.2 Snap Lake Diamond Project**

***The active mine area and the land lease are 250 and 550 ha, respectively***

Most of the facilities developed for the AEP will be expanded, or used as is, for the proposed Snap Lake Diamond Project, greatly reducing the need to increase the existing footprint. The active mine area (*i.e.*, the area that will be disturbed) is expected to be approximately 250 ha. This area lies within the land lease area for the site (*i.e.*, excluding winter roads) of approximately 550 ha. The land lease area is referred to as the project footprint throughout the EA.

***The mine will process an average of 3000 tpd***

The kimberlite dyke will be mined by underground mining methods at an average rate of 3,000 tonnes per day (tpd), subject to plant capacity limitations affected by operating efficiencies. The resource is currently estimated at approximately 22.8 million t of ore, including dilution of approximately 20%. Underground development will be started while the mill and surface facilities are being constructed. The Snap Lake Diamond Project comprises the following components (described further in Section 3):

- underground mining of kimberlite using the room and pillar method;
- underground components including the underground crusher and conveyor used to transport ore to the surface;
- surface features of the mine including the mine portal and the ventilation raises;
- emulsion plant and storage of raw materials (*e.g.*, ammonium nitrate) for explosives manufacture with associated road;
- process and paste plant;
- crushed kimberlite ore storage building and ore stockpile area;
- acid generating and non-acid generating rock, and processed kimberlite disposal area (north pile);
- power plant;
- permanent camp complex and service complex;
- potable water intake and pumphouse;
- sewage treatment plant;

- landfill for non-hazardous solid waste;
- fuel tanks;
- storage areas for containers and cement;
- unheated storage building;
- water management facilities, including ditches, collection ponds, sumps, and water management pond including dykes;
- water treatment plant and discharge;
- berms;
- granite quarry and esker quarry;
- rock/esker material stockpile;
- aggregate crushing and batch plant; and,
- winter access road and esker access road.

*Approximately 950 people will be employed in stages*

The anticipated staff and contractor personnel requirements during the construction phase will average 450 people. The approximate anticipated staff requirements during the operations phase will be approximately 525 people.

## 1.3 REGULATORY PROCESS

### 1.3.1 Environmental Assessment Process

*De Beers was granted a water licence and land use permit for exploration*

This section outlines the regulatory requirements for the Snap Lake Diamond Project assessment process. There are three stages in the process.

*The regulatory process comprises three steps to ensure that the environment and people's concerns are considered*

Part 5 of the *Mackenzie Valley Resource Management Act* (the *Act*) established the Mackenzie Valley Environmental Impact Review Board (MVEIRB) and a process comprising an initial screening, an environmental assessment, and an environmental impact review. The purposes of part 5 of the *Act* are as follows:

- to establish the Review Board as the main instrument in the Mackenzie Valley for the environmental assessment and environmental impact review of developments;
- to ensure that the impact on the environment of proposed developments receives careful consideration before actions are taken in connection with them; and,

- to ensure that the concerns of Aboriginal people and the general public are taken into account in that process.

***The Mackenzie Valley Land and Water Board screened the Snap Lake Diamond Project***

To initiate the screening of the Snap Lake Diamond Project, De Beers submitted an application to the MVLWB for a Class 'A' land use permit and a Class 'A' water licence on February 2, 2001. Information provided in a scoping document and a technical support document provided with the application was used for preliminary screening of the Snap Lake Diamond Project by the MVLWB.

***The project was referred to the Mackenzie Valley Environmental Impact Review Board***

On May 14, 2001, the MVLWB referred the Snap Lake Diamond Project to the MVEIRB for EA, which is the second step in the process under the *Act*. It builds upon the initial work completed in the preliminary screening and looks closely at any possible environmental implications or public concerns.

***This environmental assessment report was submitted by De Beers in 2001***

This document, the Snap Lake Diamond Project Environmental Assessment has been submitted by De Beers to provide further information to the MVEIRB on potential environmental impacts of the Snap Lake Diamond Project. Section 111 of the *Act* defines "impact on the environment" as being "any effect on land, water, air or any other component of the environment, as well as on wildlife harvesting, and includes any effect on the social and cultural environment or on heritage resources". All of these aspects of the environment have been included in the EA report.

***The Mackenzie Valley Environmental Impact Review Board will make one of four decisions following its review process***

The MVEIRB will assess the Snap Lake Diamond Project using the EA and other relevant information. The MVEIRB will conduct a conformity check of the EA report; issue a deficiency statement if necessary; initiate technical analysis by independent consultants, experts and regulatory authorities; process information requests; review the public registry; conduct technical and public hearings if necessary; and, prepare a Report of Environmental Assessment. Upon completion of the environmental assessment, the MVEIRB will make one of four possible decisions:

- determine that an environmental impact review of the development is not required;
- order that an environmental impact review of the development be conducted if it is likely to have a significant adverse environmental impact or public concern;
- recommend the development's approval subject to mitigation measures to prevent significant adverse impacts; or,
- recommend the development be rejected without an environmental impact review.

The MVEIRB's decision must be submitted to the federal Minister (INAC).

*The environmental impact review may, or may not, be necessary*

The Snap Lake Diamond Project may, or may not, go to the third step in the process: the environmental impact review, which is the final level of evaluation that a development may undergo. Should it be necessary, this review would be conducted by a review panel.

*The Minister issues the approval*

When the assessment process is complete, the MVEIRB will make a recommendation to the Minister of Indian and Northern Affairs. The approval is issued by the Minister.

### 1.3.2 Project Licences, Permits, Authorizations, and Lease

*A second specific licencing phase will follow the approval*

Once the Snap Lake Diamond Project receives approval at the completion of the environmental assessment process, it will enter a second licensing phase. De Beers will then make applications for the many licences, permits and authorizations that fall under federal and territorial jurisdictions. The project will be permitted for long-term land tenure through a land lease. De Beers will return to the MVLWB to re-activate the application for the Class 'A' land use permit and the Class 'A' water licence. The review process for these licences, which may include a water licence hearing, will then proceed. De Beers will apply for an authorization under the Fisheries Act to construct the water intake and apply for other permits, licences, and authorizations needed to construct and operate a mine in the NWT as shown in Table 1.3-1.

**Table 1.3-1 Regulatory Permits, Licences, and Authorizations Required for the Snap Lake Diamond Project**

Authorization, Permit, Licence, Approval	Legislation	Agency	Tenure (Short and Long-term)
<b>Planning, Design and Preparation for Environmental Assessment Phase and Environmental Monitoring</b>			
Archaeological Research Permit	<i>NWT Archaeological Resources Act</i>	Prince of Wales Northern Heritage Centre, Department of Education, Culture and Employment, GNWT	Annually as needed for archaeological research during any phase that research is deemed necessary
Wildlife Research Permit	<i>NWT Wildlife Act</i>	Department of Resources, Wildlife and Economic Development, GNWT	Permit will be needed long-term for each phase of mine life for a wildlife monitoring plan Permits are issued annually

<b>Authorization, Permit, Licence, Approval</b>	<b>Legislation</b>	<b>Agency</b>	<b>Tenure (Short and Long-term)</b>
Scientific Research Permit	<i>NWT Research Act</i>	Aurora Research Institute	As needed for aquatic and wildlife effects monitoring plans Permits are issued annually
Fisheries Research Licence	<i>Fisheries Act</i>	Fisheries and Oceans Canada	As needed for aquatic and wildlife effects monitoring plans Permits are issued annually
<b>Construction/Operation/Closure Phase</b>			
Land Lease Licence of Occupation	<i>Territorial Lands Act and Regulations</i> <i>Real Property Act</i>	Indian and Northern Affairs Canada	Long-term land lease needed for all phases of mine  Maximum 21 year lease for winter access road then renewal to cover final years
Mining Lease	<i>Territorial Lands Act</i> <i>Canada Mining Regulations</i>	Mineral and Petroleum Resources Directorate, Indian and Northern Affairs Canada	Long-term mine lease needed for all phases of mine  Initially issued for 21 years; renewable for a further 21 years
Class A Water Licence	<i>Mackenzie Valley Resource Management Act</i> <i>Northwest Territories Waters Act</i> <i>Northwest Territories Waters Regulations</i>	Mackenzie Valley Land and Water Board	Long-term licence needed for all phases of mine  Issued in first year of mine for five years; renewable for further years to cover remaining phases of mine life (Licence tenure in renewals may be variable as dictated by the Mackenzie Valley Land and Water Board)
Class A Land Use Permit	<i>Mackenzie Valley Resource Management Act and Mackenzie Valley Land Use Regulations</i>	Mackenzie Valley Land and Water Board	Long-term permit needed for all phases of mine  Permits generally issued for five years, possibility of extension to seven years with renewal thereafter
Quarry Permit	<i>Territorial Lands Act and Territorial Quarrying Regulations</i>	Indian and Northern Affairs Canada	Long-term permit needed for construction, operation and closure phases of mine  Permit to be issued annually
Operations and Safety Plan Approval	<i>Mine Health Safety Act (Territorial)</i> <i>Mine Health and Safety Regulations (Territorial)</i>	GNWT, Chief Inspector, Workers Compensation Board	Long-term approval needed for construction and operation phases of mine (approximately 22 years)  Approval is granted at start of mine with annual review thereafter
Water Intake Authorization	<i>Fisheries Act</i>	Fisheries and Oceans Canada, Fish Habitat Management	Long-term authorization needed for all phases of mine until closure is complete

<b>Authorization, Permit, Licence, Approval</b>	<b>Legislation</b>	<b>Agency</b>	<b>Tenure (Short and Long-term)</b>
Fisheries Authorization or Letter of Advice	<i>Fisheries Act</i>	Fisheries and Oceans Canada, Fish Habitat Management	At each stage of renewal of water licence or land use permit if fish habitat is harmfully altered, disrupted, or destroyed
Approval for Constructing Works in a Navigable Water	<i>Navigable Waters Protection Act</i>	Fisheries and Oceans Canada, Canadian Coast Guard	Long-term authorization needed for all phases of mine until closure is complete
Explosive Storage, Explosive Handling, Magazine Permits Permit to Store Detonators	<i>Explosives Act and Regulations</i> <i>Mine Health and Safety Regulations (Territorial)</i>	Department of Natural Resources Canada GNWT, Chief Inspector, Workers Compensation Board	Long-term authorization needed for all phases of mine until closure is complete

## 1.4 TERMS OF REFERENCE

***Terms of Reference include results of public consultation***

On September 20, 2001 the MVEIRB issued the Terms of Reference and Work Plan for the environmental assessment of the De Beers Snap Lake Diamond Project. The Terms of Reference are included in this report as Appendix I.2.

***The board's expectations are described in the Terms of Reference***

The Terms of Reference describe the MVEIRB's expectations of De Beers related to the following:

- the use and integration of public consultation and traditional knowledge;
- the extent to which interactions between components of the Snap Lake Diamond Project and the environment will be evaluated; and,
- the proponent's capacity, ability and commitment to undertake the Snap Lake Diamond Project in an environmentally safe and sustainable manner.

***A cross-reference table is appended***

A summary table has been prepared to demonstrate that the EA has met the MVEIRB's expectations, as set out in the Terms of Reference. The Terms of Reference pertaining, in general, to the preparation and submission of the EA are shown in Table 1.4-1. A conformity table (Appendix I.3) includes a listing of all items in the Terms of Reference and the corresponding location in the EA where the information has been provided.

**Table 1.4-1 Terms of Reference for the Preparation and Submission of the EA Report**

TOR Section	Environmental Assessment or Topic
2.13	<b>Regulatory Regime</b> Provide mapping of the claim block and include a list of authorizations, permits and licences required to undertake the proposed development. Specify short and long-term tenure requirements.
2.14	<b>Corporate Compliance</b> De Beers shall provide details on ownership of rights and interests in the development, operational arrangements and corporate and management structures should be provided. De Beers shall describe its relevant experience over the last 10 years in mining operations in Canada and in other countries with similar regulatory and social policy regimes concerning the following: <ul style="list-style-type: none"> <li>• record of compliance with government policies and regulations pertaining to environmental protection and socio-economic issues, including details of any corrective measures or penalties imposed by government as a result of significant non-compliance;</li> <li>• mine safety, major accidents, spills and emergencies, including details of events and responses;</li> <li>• record in honouring commitments on environmental and socio-economic matters in the event of planned or premature mine closings or change of ownership;</li> <li>• operations in arctic and subarctic regions;</li> </ul>
4.1.5	<b>Preparation and Submission of the EA Report</b> De Beers will use the EA Terms of Reference to complete its EA report. That is, De Beers will provide additional information besides the information it has already provided in its <i>Snap Lake Project Scoping Report</i> and the <i>Snap Lake Diamond Project Technical Support Report</i> . All together, the information provided will tell the story of how people and the natural world could be changed by the proposed development and what is to be done about these changes. To properly execute its duties under the MVRMA, the Review Board should have the following information on the proposed development: <ul style="list-style-type: none"> <li>• Title (of the development proposal);</li> <li>• Executive summary (translated into appropriate aboriginal languages, if requested);</li> <li>• Corporate and development information including an environmental record;</li> <li>• Description of the development (e.g., phases, timetables, location, maps, photos, technology used, alternatives to the development, development design details taking into account the environment);</li> <li>• Description of the existing environment biophysical and socio-economic environment,</li> <li>• Impact of the development on the environment including impacts or effects on the socio-economic environment. Include impacts by accidents or malfunctions, and any cumulative impact(s);</li> <li>• List of potential impacts and the proposed mitigation or remedial measures;</li> <li>• Identification and description of the residual impacts after mitigation or remedial measures;</li> <li>• Results and summary of issues from public and community consultation, including any concerns and mitigation;</li> <li>• Plans for any environmental management plan, follow-up and monitoring;</li> <li>• List of supporting evidence and information sources, including previous environmental assessments; and</li> <li>• List of the required licences, permits and other authorizations, if relevant.</li> </ul> <b>Deliverable:</b> An EA report from De Beers that addresses the requirements of the EA Terms of Reference, and additional information from other sources as directed by the Review Board.

Source: Terms of Reference and Work Plan for the Environmental Assessment of the De Beers Canada Mining Inc. Snap Lake Diamond Project, September 20, 2001 Issued by: Mackenzie Valley Environmental Impact Review Board (MVEIRB).



## 1.5 REPORT ORGANIZATION

***Organization of the introduction is described***

A brief introduction including a corporate profile of De Beers, a project overview, a description of the regulatory process, a summary of required licences and permits, the Terms of Reference, and the report organization are located in Section 1 and its appendices.

***Section 2 describes alternatives and optimization***

The project has changed substantially since its inception to incorporate information received through public consultation, the results of ongoing exploration, traditional knowledge, and the initial findings of the environmental assessment. De Beers has also looked at a range of alternatives through opportunity and trade-off studies. In Section 2, the footprint of the proposed development, mining methods, water management, employment opportunities, and energy, transportation, and sorting facility alternatives are addressed.

***Project details are described in Section 3***

The proposed Snap Lake Diamond Project is described in detail in Section 3. The project description includes a development schedule; mining; kimberlite processing; waste rock, processed kimberlite, and waste management; water management; support facilities and storage; airstrip, roads, and transportation; environment, health, and safety planning; and project closure.

***Section 4 contains public consultation***

Consultation, including public and traditional knowledge consultation, is highlighted in Section 4. This section lists the meetings/contacts that have occurred, the issues raised and De Beers' response to the issues. This section also describes the process used to collect traditional knowledge and the use of traditional knowledge within the EA.

***Socio-economics and resource uses are assessed in Sections 5 and 6***

The environmental assessment of the Snap Lake Diamond Project begins with Section 5. The impacts to people are assessed first in the environmental assessment. The socio-economic impacts are outlined in Section 5, including the scope of assessment, baseline, and impact assessment. The baseline information and impact assessment of the heritage resources, traditional land use, resources use, and aesthetic quality of the project follow in Section 6.

***Sections 7 and 8 include air quality and noise***

The effects of the Snap Lake Diamond Project on air quality and deposition, visibility, and greenhouse gases are assessed in Section 7. Noise from construction and operation of the project is assessed in Section 8.

*Aquatic and terrestrial resources are provided in Sections 9 and 10, respectively*

The aquatic and terrestrial resources sections each have four subsections. Hydrogeology, hydrology, water and sediment quality, and aquatic organisms and habitat are described in the aquatic resources section, Section 9. Potential impacts to geology and terrain, ecological land classification and biodiversity, and wildlife are evaluated in the terrestrial resources section, Section 10.

*Environmental health is addressed in Section 11*

Environmental health may be affected through ecological pathways originating from air emissions or wastewater discharge. The assessment of impacts to wildlife and human health are provided in Section 11.

*The cumulative effects of the other developments in the region are considered in Section 12*

The cumulative effects of the Snap Lake Diamond Project, in combination with other approved, proposed or existing projects in the regional study area are documented in Section 12. Components of the Snap Lake Diamond Project assessed in Sections 5 to 11 are also evaluated cumulatively with other projects in Section 12. Potential cumulative effects on socio-economics, resource uses, air quality, noise, water resources, terrestrial resources, and human health are included in Section 12.

*Accidents and malfunctions are addressed in Section 13*

The risks of severe accidents and malfunctions for both the development and the environment were assessed based on their probability of occurrence in Section 13.

*Corporate commitment conclude the document*

The environmental assessment concludes with a compilation of specific commitments made throughout the report. A statement of De Beers' corporate commitment to monitoring is also included in Section 14.

*Supporting information is provided within the report sections*

Lists of units, acronyms, references, and glossary terms have been included at the end of each section of the report. Appendices follow the main report. Appendices are numbered according to the section in which they were first mentioned. For example, the Terms of Reference and the cross-reference table mentioned in Section 1 may be found in Appendices I.2 and I.3, respectively.

## 1.6 REFERENCES

MVEIRB (Mackenzie Valley Environmental Impact Review Board). 2001. Terms of Reference and Work Plan for the Environmental Assessment of the De Beers Canada Mining Inc. Snap Lake Diamond Project.

# 1.7 UNITS, ACRONYMS, AND GLOSSARY

## UNITS

ha	hectares
km	kilometres
t	tonnes
tpd	tonnes per day

## ACRONYMS

Aber	Aber Diamond Corporation
AEP	advanced exploration program
AIDS	acquired immune deficiency syndrome
CEO	chief executive officer
De Beers	De Beers Canada Mining Inc.
EA	environmental assessment
EMEM	excellence in mining environmental management
GNWT	Government of Northwest Territories
HIV	human immunodeficiency virus
INAC	Indian and Northern Affairs Canada
ISO 14001	International Organization for Standardization's certification programme for environmental management
LTIFR	lost time injury frequency rate
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVLWB	Mackenzie Valley Land and Water Board
NWT	Northwest Territories
PKC	processed kimberlite containment

<i>the Act</i>	<i>Mackenzie Valley Resource Management Act</i>
UNICEF	United Nations Children's Fund
WHO	World Health Organization
Winspear	Winspear Resources Ltd.

## GLOSSARY

cumulative effects	the predicted ambient environmental quality in the region at some future date; it includes an assessment of the cumulative impacts from the Snap Lake Diamond Project in combination with other existing, approved, or reasonably foreseeable developments in the region
Debswana	a 50/50 joint venture between De Beers and the Government of Botswana
opportunity study	a feasibility study in which other, often new, technologies are investigated to determine whether they are practical for this application, cost-effective, and provide environmental advantages for the Snap Lake Diamond Project
trade-off study	a feasibility study in which the advantages and disadvantages of several options are investigated to determine the most effective strategy
traditional knowledge	information obtained more often through observations by Aboriginal persons during extensive time spent in one geographic primarily by area than through information obtained formally by the scientific method