

**GAHCHO KUÉ PROJECT
ENVIRONMENTAL IMPACT STATEMENT**

**SECTION 1
INTRODUCTION**

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1 INTRODUCTION

1.1 DEVELOPER

1.1.1 Terms of Reference

De Beers Canada Inc. (De Beers) proposes to develop a new open-pit diamond mine and processing plant at Kennady Lake, Northwest Territories (NWT). This section of the environmental impact statement (EIS) provides introductory information requested by the *Terms of Reference for the Gahcho Kué Environmental Impact Statement* (Terms of Reference) released by the Gahcho Kué Panel on October 5, 2007 (Appendix 1.I). Sections 3.1.1 and 3.1.2 of the Terms of Reference request that De Beers provide the following information:

- the ownership of the proposed development and its organizational structure, including the division of responsibilities between the partners to the Gahcho Kué Project (Project);
- a summary of the environmental performance and policies (including socio-economic policies) of the developer, its partners, and parent companies;
- a description of the relationship between De Beers and its contractors and subcontractors, including how the company will ensure that contractors and subcontractors will be responsible for upholding relevant commitments made by De Beers;
- a description of all regulatory permits, licenses, and other authorizations required to carry out the development; and
- the rationale for the need for the development. The rationale describes De Beers' motivation and understanding of how the proposed development meets the needs of potentially affected communities and the NWT in general. A discussion of the proposed timing of this development in relation to other ongoing or proposed developments, such as existing diamond mines and the Mackenzie Gas Project is included.

As requested in Section 3.2.8 of the Terms of Reference, a conformity table (also called concordance table) listing all of the items in the Terms of Reference and the corresponding locations of the responses within the EIS is provided in Appendix 1.II. Although the conformity table is introduced in, and appended to, Section 1, it includes all locations in the EIS and its appendices and annexes where responses to the Terms of Reference have been provided. All

commitments, including mitigation measures proposed by the developer, are summarized in the Commitments Table (Appendix 1.VII) for easy reference.

1.1.2 Project Ownership

The Project is a joint venture between De Beers and Mountain Province Diamonds Inc.

De Beers holds a 51 percent (%) participating interest in the Joint Venture and is the operating partner for the Gahcho Kué Joint Venture. In this capacity, De Beers is the developer and proponent of this EIS. De Beers is part of the international De Beers Group and, for simplicity, the term “De Beers” is used in this report to cover both De Beers Canada Inc. and the De Beers Group. De Beers is the world’s leading rough diamond company with expertise in exploration, mining, and marketing of diamonds.

Mountain Province Diamonds Inc. is a Canadian exploration company listed on the Toronto Stock Exchange and headquartered in Toronto, Ontario. The company’s primary asset is its 49% interest in the Project. Mountain Province Diamonds Inc. is not an operating company and plays no active on-site operational role in the Project. It has no active projects and retains several leases in the NWT near the Project, although these lie dormant.

1.1.3 De Beers Organizational Structure

Established in 1888, De Beers and its joint venture partners operate in 20 countries, across five continents, and employ about 13,000 people. From its mining operations across Botswana, Namibia, South Africa, and Canada, De Beers produces and markets 35 to 40% of the world’s supply of rough diamonds. De Beers’ primary business is the exploration for, the mining of, and the marketing and distribution 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.

The holding company of the De Beers Group is the De Beers Société Anonyme (DBsa), which has three shareholders:

- Anglo American plc (45%);
- Oppenheimer family (40%); and
- Government of the Republic of Botswana (15%).

Jim Gowans is the President of De Beers Canada Inc. and Chantal Lavoie is the Acting Chief Executive Officer and the Chief Operating Officer. De Beers has its Canadian corporate headquarters in Toronto, Ontario, employing 60 full-time employees in the Toronto office. From this location, the company directs its exploration and joint venture activities, and provides centralized support services to the regional project offices and mine sites in the areas of human resources, finance and administration, mineral resource management, and quality assurance programs.

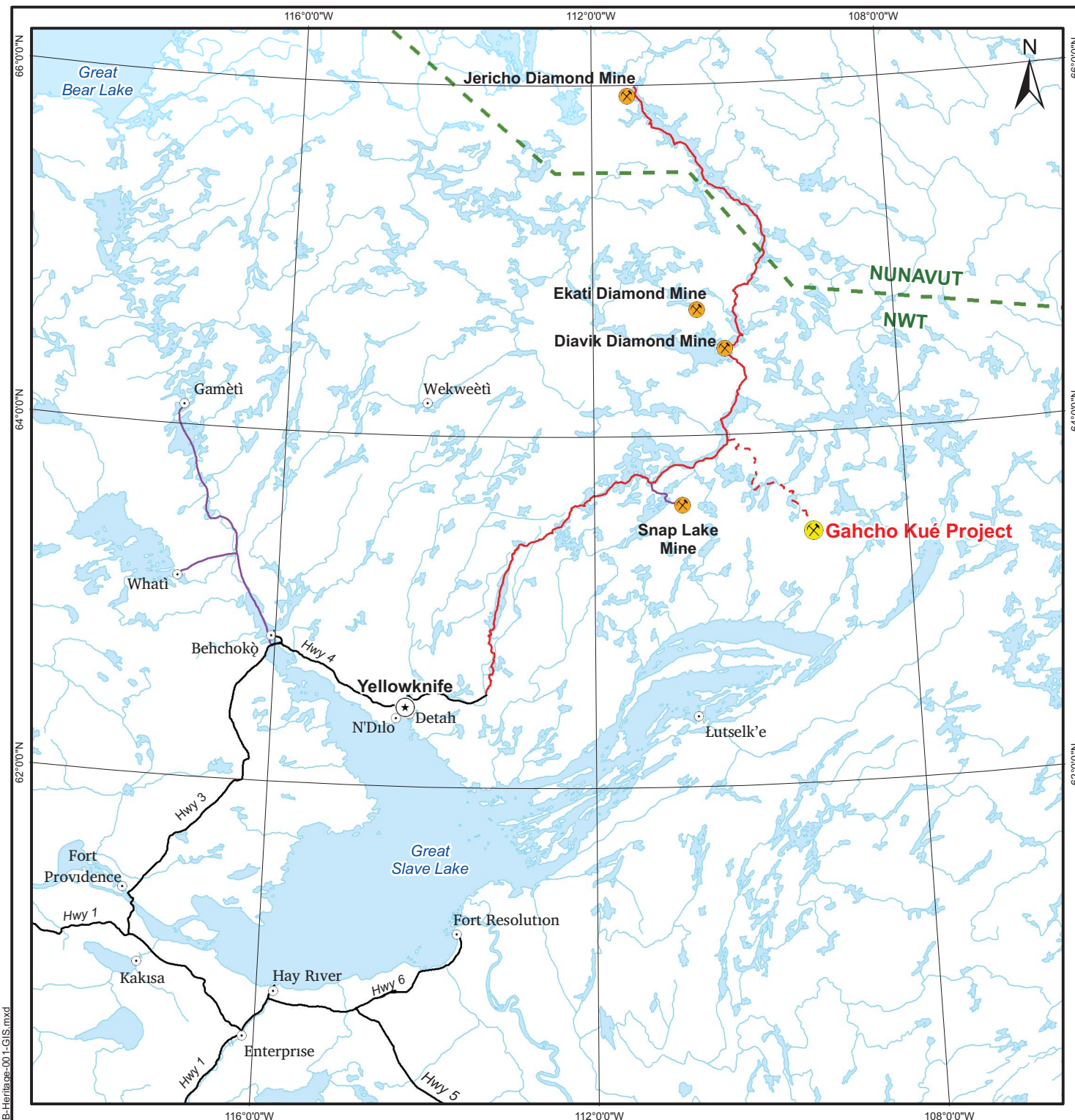
The regional project office in Yellowknife was established in 1993 as an exploration office; it expanded with the acquisition of the Snap Lake Mine in 2000. It provides operational support to the Snap Lake Mine and project support to the Gahcho Kué Project. De Beers also has an office in Timmins, Ontario to provide operational support to the Victor Mine.

1.1.4 History in Canada and the Northwest Territories

De Beers has been active in Canada since the early 1960s and has been working in the NWT since the 1990s. The Snap Lake Mine, located in the NWT, and the Victor Mine, located in northern Ontario, are De Beers' first operational mines outside of Africa. If approved, the Gahcho Kué Project would be De Beers' third mine in Canada. The company is also conducting exploration activities near the Victor Mine with a view to extending the life of the Victor Mine.

1.1.4.1 Snap Lake Mine

The Snap Lake Mine is located approximately 220 kilometres (km) northeast of Yellowknife (Figure 1.1-1) and is Canada's first fully underground diamond mine. De Beers received regulatory approval to construct the Snap Lake Mine on May 31, 2004. Construction began in February 2005 with the opening of the winter access road; commissioning of surface buildings and equipment commenced in the summer of 2007. The first diamonds were produced in the Snap Lake Main Treatment Plant in August 2007. The Snap Lake Mine commenced commercial production on January 16, 2008 and the Official Mine Opening took place on July 25, 2008. The mine had limited production during the economic downturn in 2009 with a six-week closure from July through August 2009.



LEGEND

- Gahcho Kué Project
- Existing Mine
- Territorial Capital
- Populated Place
- Highway
- Existing Winter Road
- Tibbitt-to-Contwoyto Winter Road
- Winter Access Road
- Watercourse
- Waterbody
- Territorial/Provincial Boundary

NOTES

Base data source: The Atlas of Canada

GAHCHO KUÉ PROJECT

Location of the Gahcho Kué Project

PROJECTION:
Canadian Lambert Conf. Conic

DATUM:
NAD83

Scale: 1:3,500,000
50 25 0 50
Kilometres



FILE No:
B-Heritage-001-GIS

DATE:
September 20, 2010

JOB NO:
09-1365-1004

REVISION NO:
8

OFFICE:
GOLD-CAL

DRAWN:
CW

CHECK:
JB

Figure 1.1-1

By July 15, 2010, \$1,467,975,604 had been spent on construction and operation of the Snap Lake Mine. Of that total, \$1,030,184,611 was spent with NWT-based contractors and suppliers, including \$656,789,771 with Aboriginal businesses or Joint Ventures. De Beers currently employs about 440 people at the Snap Lake Mine, 38% of workers are NWT residents. De Beers is planning to increase production at the Snap Lake Mine to reach full production by the end of 2012. The ramp-up has commenced and will result in the creation of an additional 175 operational positions at the mine site by the end of 2010, as well as a four fold increase in production. When the mine reaches full production, it will employ close to 600 people, of which 514 will be De Beers' employees and the remainder will be contractors.

1.1.4.2 Victor Mine

The Victor Project is located in the James Bay Lowlands of northern Ontario, approximately 90 km west of the coastal community of Attawapiskat. In August 2005, De Beers received approval by the Federal Minister of the Environment for the *Victor Project Comprehensive Study Environmental Assessment*. Construction of the mine began in February 2006. The mine was officially opened in July 2008 as an open pit mine with an estimated 12 year life-of-mine. The Victor Mine is a fly-in, fly-out remote mine that employs approximately 525 people. There are an additional 15 diamond-bearing kimberlites located in the Victor Mine lease area and advanced exploration work continues on several pipes.

1.1.4.3 Gahcho Kué Project

The Gahcho Kué Project is the second project proposed by De Beers in the NWT. It is located approximately 80 km southeast of the Snap Lake Project and is approximately 280 km northeast of Yellowknife (Figure 1.1-1). In 2009, the Gahcho Kué Joint Venture commissioned a feasibility study, which was undertaken by JDS Energy and Mining and forms the basis for the description of the Project in Section 3. An overview of the Project is provided in Section 1.3. The Project is expected to employ an average of about 360 full-time equivalents annually during the operations phase, with peak employment of nearly 700 full-time equivalents during construction. Additional Human Resources information is provided in Section 3.

1.1.5 Environmental Policies and Systems

De Beers is committed to operating and doing business in the NWT in a socially and environmentally responsible and sustainable manner. The company aims to operate in a way that minimizes the impact on the natural environment while

achieving the greatest socio-economic benefits. In all its operations, De Beers treats full compliance with federal and local environmental legislation as the minimal acceptable standard.

De Beers has four main corporate environmental and socio-economic policies, and two management systems that apply to this Project:

- Sustainable Development Policy;
- Northwest Territories Business Policy;
- Human Resource Management Policy;
- Working with Aboriginal Communities Policy; and
- Environmental and Safety Management Systems.

1.1.5.1 Sustainable Development Policy

De Beers is committed to operating in accordance with the principles of sustainable development. This means ensuring that activities undertaken today meet the needs of the present without compromising the ability of future generations to meet their own needs. This requires all employees and contractors to take account of the longer term economic, social, and environmental implications of their decision-making and actions, not just for business but for society at large. De Beers will apply its principles of sustainable development, as described in more detail in the formal policy statement signed by Jim Gowans, the De Beers' President in December 2009 (Appendix 1.III), in all of its activities and undertakings.

De Beers' Sustainable Development Policy establishes that real and sustainable contributions to capacity building and the development of transferable skills are key in De Beers' core business principles and that this value will underpin the company's conduct in Canada. This includes the company's commitment to invest in initiatives that benefit its neighbours in the communities near its operations. The most effective means of helping communities is to build capacity rather than dependency in these communities. This is fundamental to De Beers' approach to social sustainability.

As an example of how De Beers implements the social investment aspects of the Sustainable Development Policy, the company has administered a fund since the early 1970s to direct social investment spending in South Africa. De Beers directs the equivalent of CAN \$4.4 million a year towards a diversity of socio-economic and educational initiatives. Each year, this fund supports more than 500 ventures in Southern Africa, including practical skills training, small business

initiatives, job creation, youth development, environmental conservation, and community projects that improve the quality of life.

De Beers also has a well-established social investment record in Canada. Disbursements in 2009 totalled \$3.8 million including cash and in-kind disbursements, and staff time. Of that, \$1.69 million was spent on social investment in the NWT. The bulk of investment to date has been in education and youth literacy. Because each community has individual needs, corporate social investment is decided locally.

1.1.5.2 Northwest Territories Business Policy

This policy sets out how De Beers will contribute to the development of a sustainable economy in the NWT through the provision of long-term opportunities for northern businesses. De Beers carries out business in a way that maximizes its contribution to the local economy and to the social development of the communities in the region. Toward this end, the policy clearly defines Aboriginal and NWT Businesses and establishes a priority for business with communities close to its mining activity in the NWT to maximize positive benefits. The business policy is implemented through practical commitments that help businesses participate by matching contract sizes to business capabilities, adjusting contract durations, identifying possible joint ventures, minimizing limitations to participation, establishing hiring priorities, and communicating through a business registry and a superintendent who works with Aboriginal and NWT businesses. The formal policy statement, which is provided in Appendix 1.IV, describes the details of the commitments, principles, and definitions included in this policy. The policy is reviewed from time to time and will be updated prior to the construction of the Project.

1.1.5.3 Human Resource Management Policy

The Human Resource Management Policy is part of De Beers' commitment to building a strong organizational culture and a climate of opportunity and challenge, by recognizing and rewarding employees' contributions, valuing and embracing diversity, encouraging and supporting teams, and nurturing a climate of open and frank communication, including constructive feedback and meaningful performance reviews. The policy statement signed by the De Beers' president (Appendix 1.V) expands on the information provided here.

1.1.5.4 Working with Aboriginal Communities Policy

De Beers acknowledges the status of the Aboriginal people of Canada and their constitutionally entrenched rights. In working with Aboriginal people, De Beers will ensure that this status and their rights are respected, and will work to strike a balance between these considerations and other economic, social, and environmental responsibilities.

De Beers is committed to building long-term relationships with its neighbours in the local communities near its operations. Traditional knowledge will continue to be actively solicited and considered in the planning and management of De Beers' activities. Projects must benefit and add to the sustainability of local communities through community participation in employment and business opportunities. Meaningful consultation and communication regarding activities, programmes and developments are necessary. The Working with Aboriginal Communities Policy, as provided in Appendix 1.VI, is put into action by project-specific community engagement activities that reflect cultural and regional diversity.

De Beers entered into four Impact Benefit Agreements (IBAs) with Aboriginal groups specific to the Snap Lake Mine. De Beers will build on its Snap Lake IBA experience, and anticipates putting in place additional agreements for the Project.

1.1.5.5 Environmental and Safety Management Systems

The environmental management system (EMS) is an operational system, which is registered with the BSI Group and is certified to the International Standards Organization (ISO). This system contains the various sections required to comply with accepted international standards for managing the environmental aspects of a business. The EMS for the Gahcho Kué Project has been certified to the ISO 140001 standard since 2002, as part of the umbrella certification for all De Beers' Canadian exploration properties. In 2007, the Project achieved stand-alone certification. During the present Care and Maintenance phase, the Project remains certified under the Snap Lake Mine certification.

The EMS identifies how De Beers will manage its environmental responsibilities, and defines specific procedures and instructions that will be followed when performing certain tasks. It includes De Beers' commitments for creating environmental awareness within the workforce (including contractors), the provision of specific training with respect to environmental incident response, pollution prevention, and continual improvement processes. External auditors

conduct periodic audits of the EMS every year to ensure that the company is operating the EMS according to its commitment.

Currently, De Beers is adopting the Occupational Health and Safety Assessment Series (OHSAS) 18001 standard (OHSAS 2008) for its safety and health management system. Although this system is not currently an ISO standard, it does meet all 17 system elements created for ISO 9001 and ISO 14001. The International Standards Organization is striving to implement OHSAS 18001 as the ISO standard for Safety and Health Management Systems across the more than 200 countries. De Beers is working to ensure that both its environmental and safety management systems are in line with current industry "best practices", and that both management systems are committed to continual improvement in their respective disciplines.

1.1.6 De Beers Environmental Performance Summary

De Beers operates two mines in Canada, the Snap Lake Mine and the Victor Mine. Mountain Province Diamonds Inc. is not an operating company and plays no active on-site operational role in the Project and has no active projects. As such the discussion of environment performance relates only to De Beers.

1.1.6.1 Context and Expectations for Performance

De Beers Canada's Sustainable Development Policy provides the context and expectations for environmental performance and includes commitments to conducting all activities in an open and transparent manner, identifying, assessing and controlling risks to the environment, and applying principles in pollution prevention and adaptive management.

1.1.6.2 Environmental Management Systems

Environmental management systems define how activities that have the potential to create an impact on the environment are controlled. Risks are regularly assessed and reviewed, and are used in identifying environmental management plans. The environmental management systems conform to the requirements of the ISO 14001 standard and are certified and routinely audited by an independent third party. The company initially has maintained certification during all phases of mine development (e.g., exploration, construction, and operations). Risks that are covered by the management systems include those associated with water quality, aquatic effects, wildlife interactions, hydrogeology, fuel handling and storage, waste management, and processed ore containment.

The Chief Operating Officer of De Beers Canada is accountable for ensuring that certified environmental management systems are maintained and for ensuring all activities are carried out in accordance with the commitments of the Sustainable Development Policy and De Beers Family of Companies environmental standards. This includes reporting to the company's corporate parent all environmental incidents and breeches of the policy or standards.

1.1.6.3 Environmental Incidents

Environmental incidents are reported on a common basis using the definitions as indicated below together with the frequency of incidents.

Incident Type	2008	2009	2010 (November)
Major ^(a)	0	0	0
Moderate ^(b)	0	1	2
Minor ^(c)	224	225	253
All Incident Frequency Rate ^(d)	-	20.5	18.3

- (a) Major Incident: A reportable environmental incident associated with widespread, long-term, irreversible negative ecological or social impacts with a high risk of legal liability; also contains all of the following aspects: complete disruption of natural systems, high degree of irreversibility (>5 years), noncompliant with legislation and high likelihood of prosecution, significant negative public perception, and reportable to the authorities in terms of relevant legislation.
- (b) Moderate Incident: An incident associated with a widespread or localized, medium-term, reversible significant ecological or social impact and/or has a risk of legal liability; also contains all of the following aspects: an impact on the natural system, reversible impact within 5 years, non-compliant with legislation, reasonable likelihood of prosecution, potentially negative public perception, incidents likely to be reportable to the authorities in terms of legislation.
- (c) Minor Incident: An incident limited to the immediate area of occurrence associated with a short-term ecological disturbance or environmental nuisance or a transgression of an internal standard (including complaints from interested and affected parties); also is an entirely reversible impact after once-off intervention, limited impact on natural system, non-compliant with legislation but a low likelihood of prosecution, insignificant or no negative public perception.
- (d) All Environmental Incident Frequency Rate: Total number of incidents per 200,000 employee hours.

There have been no Major Environmental incidents at any of De Beers Canada's operations. However, in the last three years there have been three Moderate incidents as summarized below.

- 2009 – Snap Lake received compliance notice following an inspection about incomplete maintenance records for refrigeration equipment regulated under Federal Halogen Regulations. Record keeping and document control systems were reviewed and updated to include these records.
- 2010 – A spill of approximately 3000L diesel fuel at Victor Mine occurred when a mechanized loader backed into a fuel truck following completion

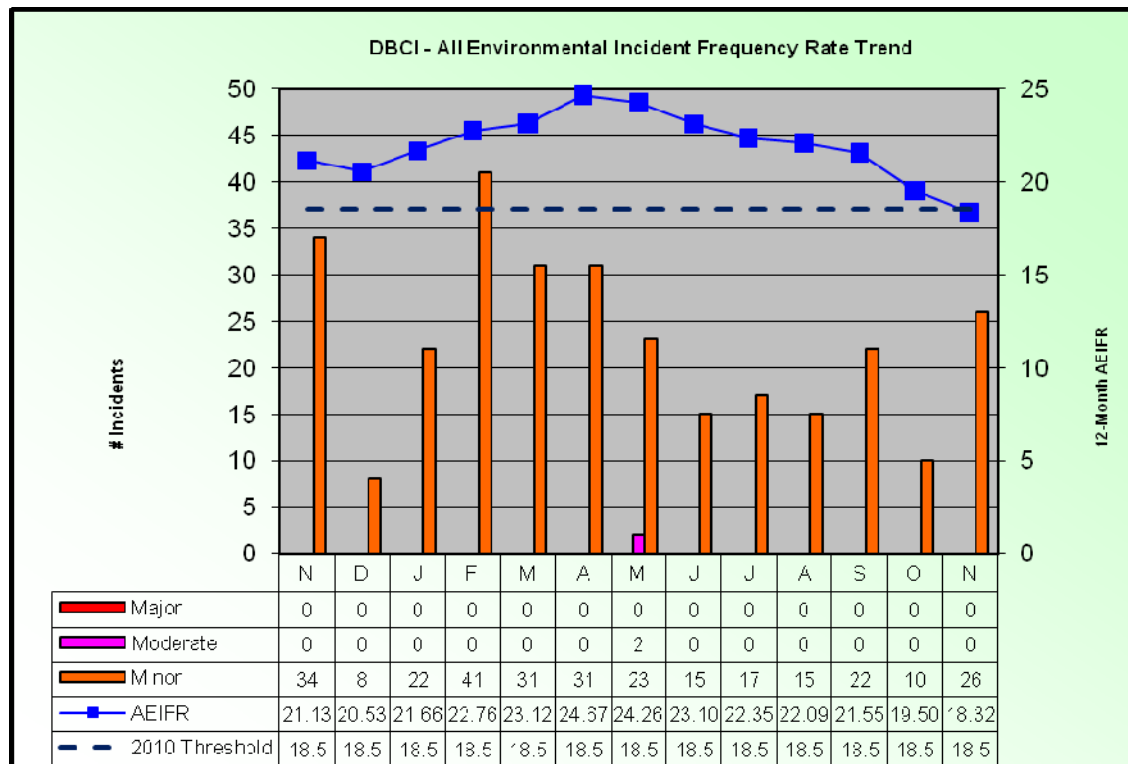
of refueling. The impacted soil was excavated and the environmental impacts were remediated to the satisfaction of the authorities having jurisdiction. The operator of the loader was determined to have made a negligent error and was disciplined in accordance with the company's progressive discipline policy.

- 2010 – While pumping water from a retention pond (IL6) into Snap Lake (an approved activity), the placement of the suction line of the pump under ice conditions contributed to increased turbulence that resulted in an increased uptake of suspended solids. Approximately 663,000 L of water was pumped during this period, some of which contained suspended solids in excess of the permitted limit. The incident was thoroughly investigated and work plans developed for dewatering during under-ice conditions.

In each of the above cases, the incidents were reported to the authorities having jurisdiction. The incidents were investigated to identify root causes. Corrective actions implemented have been effective in preventing a repeat incident.

During the same period there have been several minor environmental incidents consisting primarily of relatively small quantities (< 10L) of hydraulic oil from mobile equipment, which were immediately reported and remediated by mine operations staff. Improved employee awareness, greater focus on equipment inspections, and the use of cold-resistant hydraulic hoses on mobile equipment have resulted in a downward trend in minor environmental incidents as shown in the following figure.

Figure 1.1-2 Environmental Incident Frequency Rate Trend



1.1.6.4 Continuous Improvement

Since the commencement of operations in 2008, a number of opportunities for improvement and operational issues have been identified by the Environmental Management Systems. Key areas being addressed include the following:

- Focus on improving management of change processes to ensure the impact of operational changes is assessed for potential impacts on the environment.
- Improved outreach and communication with Communities of Interest.
- Aligning to the Mining Association's Towards Sustainable Mining performance indicators for External Outreach, Biodiversity, Energy/GHG management, Tailings Management, and Crisis Management.
- Re-design and construction of a new effluent outfall at Snap Lake. Project execution will include assignment of dedicated engineering staff, a comprehensive risk assessment, and communication with regulators to ensure a successful outcome is achieved, and all potential risks are identified and mitigated.

1.1.7 Relationship with Contractors and Sub-consultants

De Beers will honour its commitments (Appendix 1.VII) and where they require specific action by contractors and sub-consultants, De Beers will ensure that processes are in place for contractors to understand their contractual obligations related to commitments; their bid will be the starting point for this understanding.

All contracts issued for bid will include a requirement for the bidders to identify the steps they will take to meet specific commitments of De Beers that are required of that specific contract in their bid submissions.

Once selected, De Beers will prepare contracts and/or agreements that ensure terms and conditions of contracts include the requirement of the contractor and its sub-consultants to meet De Beers' commitments. De Beers has a contract register and all contracts are stored in accordance with corporate policies for procurement. This contract register will be continued for the Gahcho Kué Project to maintain consistency in how the company manages its contract relationships in the NWT.

Key performance indicators will be established to ensure that commitments, including regulatory requirements of De Beers, are measured and met by contractors and their sub-consultants. De Beers will review performance indicators in the process of modifying or renewing contracts during the life of the Project. Where contractors or subcontractors fail to comply with the contract terms and conditions, De Beers will exercise its options within those contracts to ensure compliance. The company will pursue new contract arrangements where compliance cannot be achieved with current contractors and a new arrangement will better achieve the company's objectives.

The plan will require that contractors and De Beers' management meet regularly to review the contractor and sub-consultant's performance. Committed to supporting northern contractor success, De Beers will put in place an action plan for the contractor or sub-consultant to improve key performance indicators, where necessary.

1.2 PROJECT RATIONALE

1.2.1 Need for the Project

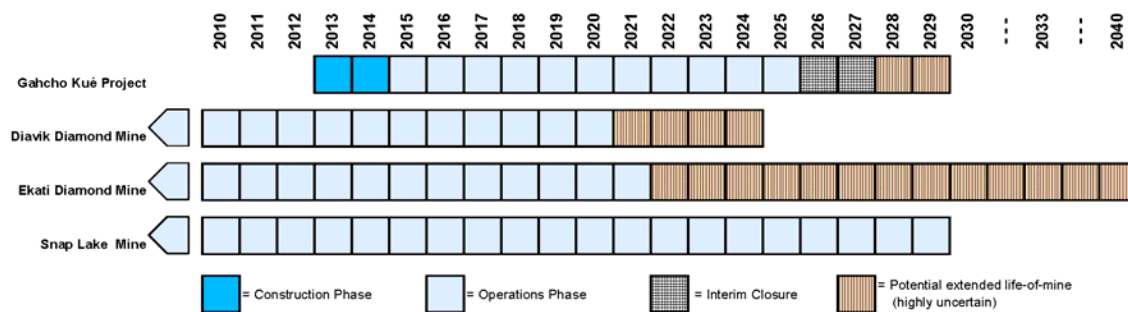
The Project comes at a time when the two other open-pit diamond mines in the Northwest Territories, Ekati Diamond Mine and Diavik Diamond Mine, are exhausting the resource that can be mined through the open-pit method. They are transitioning to smaller underground operations. The reduced production from the underground mines in the NWT, coupled with the short-term future of De Beers' Victor Mine and the mid-term future at the Snap Lake Mine means that output from the Gahcho Kué Project will be a valuable contributor to the North American diamond industry. This Project will benefit both consumers and the NWT workforce. When aggregated with production from De Beers' southern African mines, the Gahcho Kué Project will be a key component supporting global demand for diamonds. The Project also offers continued employment opportunities for people from the NWT and local communities in jobs with skill sets applicable to open-pit operations, such as heavy equipment operators and mechanics.

1.2.2 Project Timing

The Project is expected to begin with two years of construction during 2013 and 2014. Kimberlite will be mined and processed during an eleven-year (2015 to 2025) operational period. Progressive reclamation will occur during operations with interim closure anticipated to occur in 2027. An additional two to three years of mine life may be possible.

The Project will overlap with the three major operating diamond mines: Diavik Diamond Mine, Ekati Diamond Mine, and Snap Lake Mine (Figure 1.2-1). Although the first two mines began as open pit mines, all three are, or will be, underground mines. Diavik Diamond Mine began production in 2003 with a predicted mine life of 16 to 22 years. Based on these initial predictions, closure could occur from 2018 to 2024; however, current development of underground mining is expected to extend the future from 2018 to beyond 2020 (Diavik 2010, internet site). The Snap Lake Mine began operating in 2008 with an expected life of mine of about 26 years. The Ekati Diamond Mine currently published mine life is 2021, but its Vision 2040 is anticipated to help extend the mine life (Northern News Service Online 2009, internet site). Closure of these mines is very difficult to predict. All of the diamond mines could close between 2020 and 2030, although the mine lives could be extended by further efficiencies, cost savings, and development of reserves that were not initially targeted.

Figure 1.2-1 Potential Overlap of Northwest Territories Diamond Mine Timelines



Note: Estimated construction start date dependent on all permits and approvals, and is subject to change.

Future developments that are relevant to the Project include the Mackenzie Gas Project, the proposed East Arm National Park, the Yellowknife Gold Project, the Nechalacho Project, the NICO Project and the Taltson Hydro Expansion Project. Although the long environmental review process has been completed, development of the Mackenzie Gas Project is not reasonably foreseeable. A decision on whether or not it will go ahead has not been announced.

The framework agreement for creating a national park reserve in the East Arm of Great Slave Lake was signed on April 7, 2010. It commits the federal government and the Łutsek'e Dene First Nation to negotiate a park establishment agreement, an essential step enabling the Environment Minister to recommend the creation of a national park reserve to Parliament. Although there is considerable optimism, the designation of the reserve and then the development of a national park are still not in the reasonably foreseeable future. Based on the timeline (Figure 1.2-1), the construction and operation of the Project would likely not overlap with completion of the physical development of the National Park.

The Taltson Hydroelectric Expansion Project was intended to develop and sell hydroelectric energy to industrial customers in the north. The expansion project would displace regular use of large-scale diesel generation at the diamond mines in the NWT and reduce the total annual NWT greenhouse gas emissions. The environmental assessment of the Taltson Hydroelectric Expansion Project is in the review process (MVEIRB 2010) and the schedule for completion is uncertain.

Overlap of this expansion project and the Project, if it occurred, would align well with De Beers' sustainability goals. This cumulative effect would be beneficial, but a high degree of uncertainty remains.

1.3 PROJECT OVERVIEW

This section contains a brief high-level overview of the Project to provide the reader with an initial understanding of what is being proposed. Section 2 of the EIS provides a review of the Project alternatives and Section 3 provides a description of the Project that is currently proposed and has been assessed in this EIS.

1.3.1 Location

The Project is situated at Kennady Lake, which is a remote location 20 km above the treeline with no road access and no support infrastructure. Kennady Lake is a small (870 hectare ([ha]) lake located south of Lac de Gras, the site of the Diavik mine; however, it is about 1% of the size of Lac de Gras. The Kennady Lake watershed lies in the headwaters of the Lockhart River system, which eventually flows into Great Slave Lake.

1.3.2 Ecoregion

The Project is located within the Mackay Upland Ecoregion located within the Taiga Shield Ecozone (Figure 1.3-1). This ecoregion forms part of the tundra boreal forest transition. Details about the terrain, soils, and vegetation of this ecoregion are provided in Annex E (Vegetation and Plant Communities Baseline).

1.3.3 Exploration History

Exploration in the Project area was initiated by Mountain Province Mining Inc. (now Mountain Province Diamonds Inc.) and Camphor Ventures Inc. in 1992. About 600 till samples, many containing kimberlite indicator minerals, were collected from the surface. These samples identified indicator mineral dispersion trails that led back towards the kimberlite ore bodies. During the next five years, exploration included several airborne electromagnetic surveys and exploration drilling in Kennady Lake.

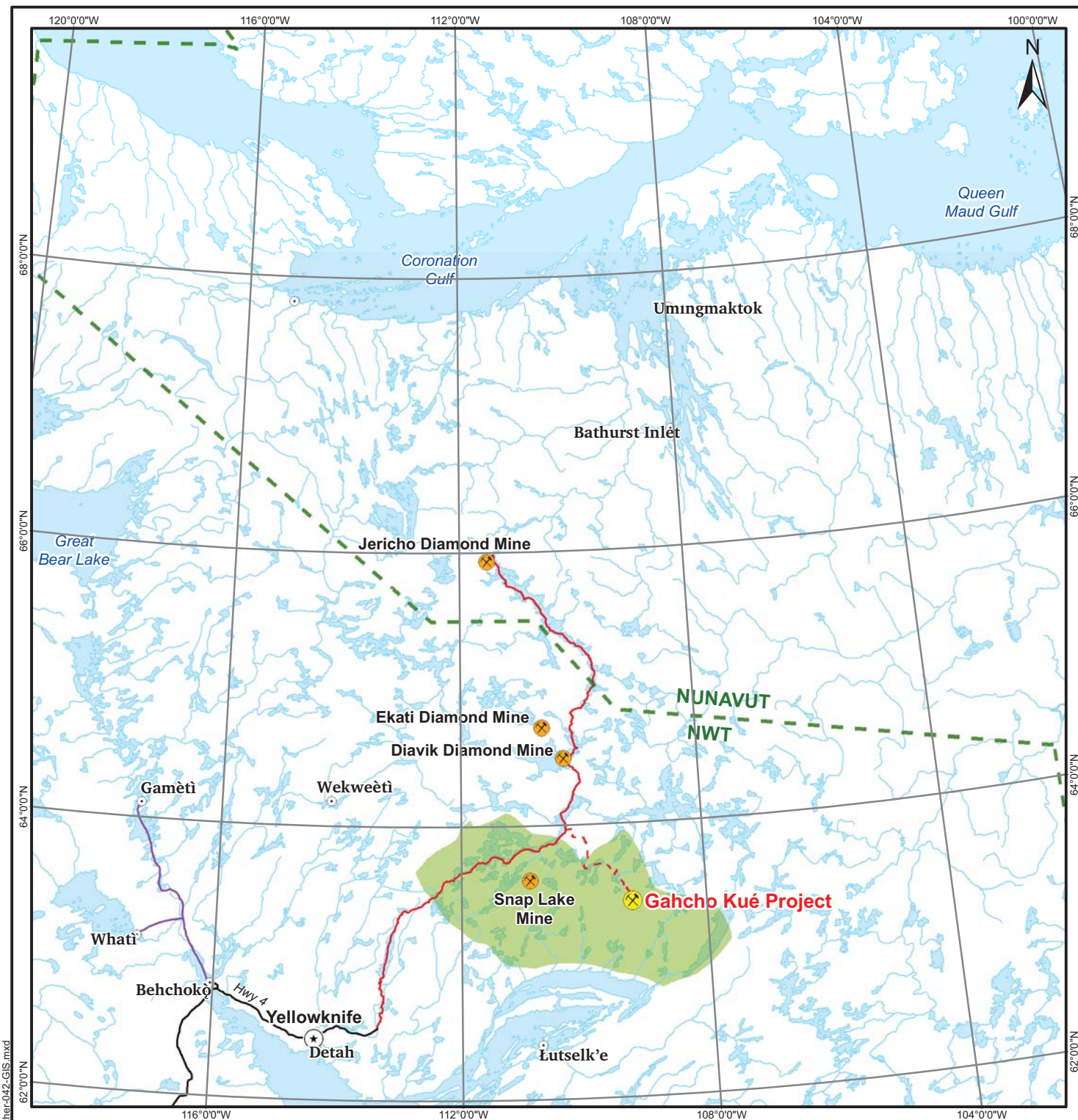
In 1995, diamond-bearing kimberlite features were confirmed at the site. In 1997, Monopros, a wholly owned subsidiary of De Beers, formed a joint venture with Mountain Province Mining Inc. De Beers, as the operator, began a program to continue defining the 5034 kimberlite ore body and to assess whether commercial production was feasible. Additional exploration activity by Monopros in 1997 subsequently located the Tuzo, Hearne, and Tesla ore bodies. A small

drilling program was initiated in 1997 to 1998, followed by two bulk sampling programs in 1999 and 2001/2002. In 2004, a core drilling program was conducted to collect detailed geotechnical and hydrogeological information. Further drilling was conducted in 2005 to obtain more geotechnical data for civil construction designs. In 2006, 2007, and 2008 additional core and bulk sampling programs were conducted on the Tuzo and 5034 kimberlites.

1.3.4 Mining

The kimberlite ore bodies at the Project are vertical pipes located just below the bottom of Kennady Lake. Like the vertical kimberlite pipes at the Ekati and Diavik diamond mines, and unlike the ore body at Snap Lake, the pipes in Kennady Lake are most amenable to open pit mining. Although underground mining was evaluated initially, open pit mining was technically, economically, and environmentally, the preferred option.

The kimberlite pipes will be mined as open pits in an overlapping sequence beginning with 5034 Pit (location shown in Figure 1.3-2). Dewatering of Kennady Lake will begin at the start of construction to establish a controlled basin and allow early access to the lakebed above the 5034 Pit. The pre-stripping of the 5034 Pit will occur in 2014 (Year -1) with the first year of operations in 2015 (Year 1). While the 5034 Pit is being mined, the Hearne Pit will be pre-stripped so that the ore is exposed and available. The Tuzo Pit will be pre-stripped during mining operations at the Hearne Pit. Mining of the Hearne Pit is scheduled to begin in 2018 (Year 4), followed by mining of the Tuzo Pit in 2019 (Year 5). Pit closures, including backfilling the 5034 and Hearne pits, will occur progressively as each pit is mined out. The fourth kimberlite pipe, Tesla, will not be mined because of its small size and low diamond grade.



LEGEND

- | | | | |
|--|----------------------------------|---------------------------|---------------------------------|
| | Gahcho Kué Project | | Watercourse |
| | Existing Mine | | Waterbody |
| | Territorial Capital | | Territorial/Provincial Boundary |
| | Populated Place | EcoZone, EcoRegion | |
| | Highway | | Taiga Shield, Mackay Upland |
| | Existing Winter Road | | |
| | Tibbitt-to-Contwoyto Winter Road | | |
| | Winter Access Road | | |

NOTES

Base data source: The Atlas of Canada
Ecozone source: GNWT

GAHCHO KUÉ PROJECT

Development Location In Relation to Ecoregions, and Ecozones

PROJECTION:
Canadian Lambert Conf. Conic

DATUM:
NAD83

Scale: 1:4,500,000
50 25 0 50
Kilometres



FILE NO:
P-Other-042-GIS

DATE:
October 7, 2010

JOB NO:
09-1365-1004

REVISION NO:
1

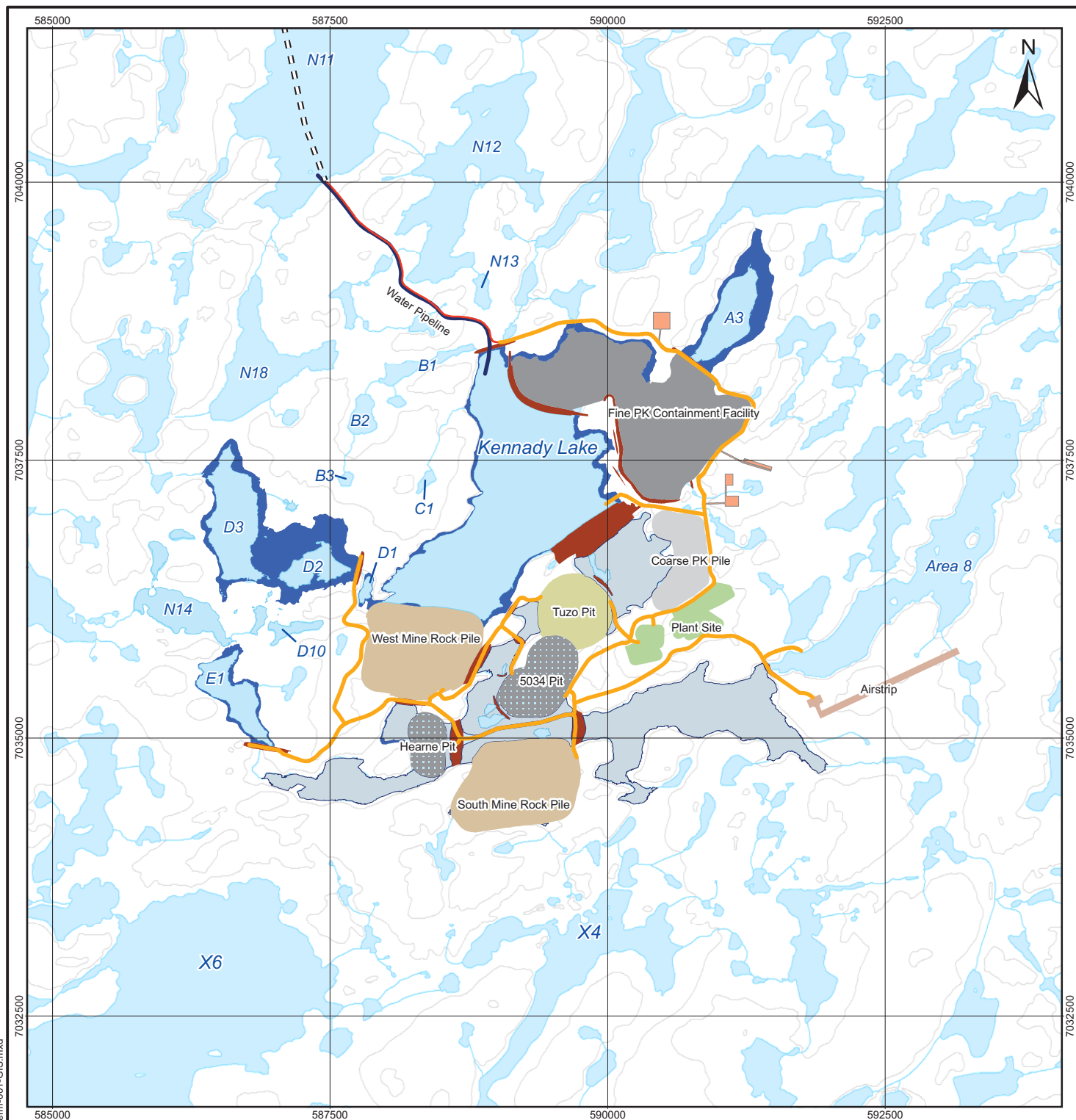
OFFICE:
GOLD-CAL

DRAWN:
CW

CHECK:
PT

Figure 1.3-1

I:\CLIENTS\DE BEERS\09-1365-1004\maps\05_terrain-geology-solids\EIA\E-Perm-001-GIS.mxd



LEGEND

- | | | |
|---------------------------------|---------------------|----------------------|
| Watercourse | Airstrip | Fine PK |
| Waterbody | Back-filled Pit | Containment Facility |
| N12 Lake Identifier | Building | Flooded Area |
| Contour (10m interval) | Coarse PK Pile | Mine Rock Pile |
| = = Proposed Winter Access Road | De-watered Lake Bed | Open Pit |
| Project Footprint | Dyke or Berm | Plant Site |
| Service Road | | Water |
| Site Road | | |
| Water Pipeline | | |

NOTES

Base data source: National Topographic Base Data (NTDB) 1:50,000
PKC = Processed Kimberlite Containment
SW = Southwest

GAHCHO KUÉ PROJECT

Project Footprint

PROJECTION:

UTM Zone 12

DATUM:

NAD83

Scale: 1:50,000

500 250 0 500

Metres



FILE No:

E-Perm-001-GIS

DATE:

October 4, 2010

JOB NO:

09-1365-1004

REVISION NO:

1

OFFICE:

GOLD-CAL

DRAWN:

CW

CHECK:

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Figure 1.3-2

1.3.5 Processing

Kimberlite extracted from the mine will be processed on-site. The process plant will be designed to process the 3.0 million tonnes of kimberlite per year produced by the mine. Processing the ore will be essentially mechanical, with only minimal use of chemicals. Kimberlite ore will be crushed and screened to produce a clean and suitably sized ore. Diamonds will be separated using a difference in density between the diamonds and the kimberlite host rock. The ore will be mixed with ferrosilicon to produce a dense medium that contributes to the separation of the diamonds, which will be separated from the rest of the rock by centrifugal force in a cyclone. Heavier particles will be sent to the diamond recovery plant, where x-ray machines and a grease diamond recovery system will separate diamonds from the concentrate. The diamonds will be collected and shipped to Yellowknife for further processing. Water used in the plant will be recycled to reduce the quantity of water taken from the Kennady Lake watershed. Ferrosilicon is recovered within the processing circuit and recycled; however small amounts are lost daily in the processed kimberlite.

1.3.6 Waste Management

There will be five major types of waste that will be produced and managed on-site: lake-bed sediment and overburden from pre-stripping, mine rock (rock [primarily granite] surrounding the kimberlite ore body), barren (non-diamondiferous) kimberlite rock, kimberlite that has been processed to remove diamonds, and general waste (domestic, industrial, hazardous materials, and sewage).

Approximately 3.3 million m³ of overburden will be removed before mining. It will be used to construct dykes, dams and re-grading the lake bottom; excess will be deposited in mine rock piles.

Approximately 226.4 million tonnes (Mt) of mine rock will be mined. About 143 Mt of mine rock will be deposited on the South Mine Rock Pile and the West Mine Rock Pile, with about 15% being used for construction and reclamation. About 84 Mt of mine rock will be deposited in the mined-out 5034 Pit, again with approximately 15% being used for construction and reclamation. In total, approximately 34 Mt of mine rock will be used for construction and reclamation purposes over the life of the mine, because of the low neutralizing potential of the rock mined at Kennady Lake, even very low concentrations of sulphur in the rock may exceed the buffering capacity of the mine rock. Based on the testing completed, less than 6% of mine rock extracted through open-pit mining will be managed as potentially acid generating rock with metal leaching potential. Any potentially acid generating mine rock, as well as any barren kimberlite, will be

sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be underwater when Kennady Lake is refilled. From 2021 onwards, potentially reactive rock will be placed within the mined-out 5034 Pit. Closure of the mine rock piles will begin when practical as part of the progressive reclamation program.

The processed kimberlite (PK) from the processing plant is divided into two streams based on particle size: fine PK (generally comprising 25% by weight), and coarse PK (generally 75%, including PK grits). The PK is not expected to be acid generating, but the leachate may be high in total dissolved solids, some metals, and pH (i.e., pH is alkaline).

All fine PK will be contained within Area 1 and Area 2 of the Fine Processed Kimberlite Containment (PKC) Facility or the mined-out Hearne Pit. Area 1 of the PKC facility will encompass most of the A sub-watershed, including Lake A1 and A2. The A1 sub-basin feeds into Kennady Lake in the north-east corner. As Area 1 is filled, Area 2 of Kennady Lake will be linked to the northwest side of Area 1 to form a contiguous PKC facility.

Coarse PK will be contained on-land adjacent to Area 4 and possibly in the mined-out Hearne and 5034 pits if capacity becomes available. The design storage capacity of the Coarse PK Pile is approximately 5.2 million cubic metres (Mm^3), which is equivalent to the estimated volume of the in-place coarse PK produced up to and including Year 5 of full production. .

As an ongoing corporate goal, De Beers follows the four “Rs” of solid waste management: reduce, recycle, reuse, and re-think. Food wastes and non-toxic combustible wastes will be burned in approved oil-fired incinerators. Toxic materials will be sorted in sealed steel or plastic drums in the waste transfer area before being shipped to an approved off-site hazardous waste disposal location. Standard best practices for waste management at operating arctic diamond mines will be followed.

A modular sewage treatment plant sized to handle a peak camp capacity of 432 people will be installed as part of the initial construction infrastructure. Treated effluent will be discharged to Kennady Lake during construction and to the diamond process plant during normal operations.

1.3.7 Water Management

1.3.7.1 Dewatering of Kennady Lake Basins

The Kennady Lake watershed, except Area 8 (Figure 1.3-2), will be controlled so that water that may be affected by the Project is contained and only released when it meets regulatory requirements. The objective of the dewatering program will be to drain the controlled basin. This will require construction of a water-retaining dyke between the controlled basin and Area 8, effectively isolating the controlled basin from Area 8, which is the primary lake outlet. Area 8 would remain at its natural water level.

Once this dyke is completed, water would be discharged out of Kennady Lake to begin dewatering. During the first phase of dewatering, De Beers expects that more than half of the water in Kennady Lake can be pumped without treatment. It would be pumped at the maximum rates to two locations simultaneously:

- Area 8 of Kennady Lake, which is the natural outlet for Kennady Lake; and
- Lake N11 in the N watershed, via pipeline.

The projected water flow to Area 8 will be 114,000 cubic metres per day (m^3/d). The N watershed is larger and capable of accepting more water than the Kennady Lake watershed. Lake N11 (Figure 1.3-2) is capable of accepting water at the rate of 500,000 m^3/d without erosion damage to downstream water courses.

Dykes will be constructed on exposed sills in the lake isolating the northern portion of the lake from the southern portion, allowing water with higher total suspended solids (TSS) levels remaining in the southern portion to be pumped to the northern portion. The northern portion of the lake will be partially dewatered and will include the Water Management Pond. Initially, water will be discharged annually to Lake N11. Later, as the water level in Kennady Lake is lowered, sediment from the lake bottom could be suspended by wave action. If necessary, water in Areas 6 and 7 will be treated in-line as it is pumped to the WMP (Areas 5 and 3) for flocculation and settling in the WMP before being subsequently discharged to Lake N11.

To reduce the amount of water potentially requiring treatment (i.e., water in contact with disturbances or activities at the site), a portion of the original Kennady Lake watershed will be diverted so that runoff that has not been in contact with the site flows away from Kennady Lake rather than into it.

1.3.7.2 Water Management During Operations

Between Year 4 and Year 6, a dyke will be constructed allowing the area near the Tuzo Pit to be dewatered so that the Tuzo Pit can be mined.

During operations, the groundwater flowing into the open pits will range from a minimum of about 770,000 cubic metres per annum (m^3/a) at the end of construction (Year -1) to a maximum of about 1,500,000 m^3/a in Year 6. After Year 6, the gradual refilling of the 5034 Pit and Hearne Pit will reduce the hydraulic gradients, resulting in a decreased groundwater inflow to the open pits.

During the operational period, groundwater flowing in to the open pits will be pumped to the Water Management Pond (WMP) where it will be recycled to the process plant, used for dust suppression or pumped to Lake N11. Dewatering of open pits to the WMP will cease when mining is complete in the Hearne Pit in Year 7. Thereafter, the Tuzo Pit will be the only active pit, and water captured in the Tuzo collection pond will be directed to the process plant to supplement process water requirements. It is expected that groundwater may continue to flow into the open pits during the winter. A system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project.

1.3.7.3 Refilling of Kennady Lake

The progressive reclamation strategy will be extended to the water management of Kennady Lake, where portions of the lake will be isolated and brought back to preconstruction water levels as quickly as possible. This will require pumping water from Lake N11 to Kennady Lake annually to reduce the overall time for the closure process. The filling time is estimated to be approximately eight to sixteen years of both pumping and natural runoff accumulation.

1.3.8 Site Infrastructure

There are no mining services currently available at the proposed Project site. The following major facilities will be required:

- processing plant;
- accommodations complex;
- maintenance workshop, warehouse, and administrative offices;
- electrical power and heating;
- storage for oil, fuel, and glycol;

- production and storage of explosives;
- traffic management;
- site roads;
- airstrip; and
- sewage treatment.

Most of the Project infrastructure will be placed in a compact footprint as shown in Figure 1.3-2.

A camp capable of housing 432 construction workers on a double-occupancy basis and 216 operations workers on a single-occupancy basis will be erected within the first six months of site mobilization. The accommodation complex, which will include the administration offices, will be of modular construction. The permanent incinerator, potable water, firewater, and sewage treatment modules will be installed and sized to handle the higher construction occupancy requirements.

Power will be generated on site by 2,825 kW(e) prime-rated diesel-powered electric generator units. Five units will be installed, three of which will be running during normal operations. Recovered heat from the electrical generators will be used to heat the accommodations complex, and the central process and maintenance facilities.

The main fuel storage facility will consist of eight 500,000 litre capacity prefabricated tanks and two 18 million litre, single-walled welded steel tanks. The tanks will be placed in a lined and dyked area to contain any fuel spills. Jet B fuel will be stored at the air strip.

Explosive use will include emulsions used for wet blasting; ammonium nitrate fuel oil (ANFO) used for dry blasting. The ammonium nitrate storage facility, emulsion plant, and explosives storage magazines are sited to the north of the main plant site, with separation distances in accordance with regulatory requirements.

In addition to the site service roads, there will be dedicated roads for the large haul trucks and loaders used to transport rock out of the open pits and around the Project site. As much as possible, mine haul will be kept to the west side of the site away from the accommodations complex and potential pedestrian traffic. Trucks hauling fuel to the site over the winter roads will be kept away from the main site.

1.3.9 Site Access and the Winter Access Road

The site will be accessible by air for mine staff, supplies, and emergency transport. Before the permanent airstrip is established, aircraft will land on an ice airstrip. The permanent air strip will be designed to accommodate a wide range of aircraft.

To provide seasonal overland access, a 120 km Winter Access Road will be constructed from Kennady Lake to the north end of MacKay Lake and will intersect the Tibbitt-to-Contwoyto Winter Road at kilometre 271. It will follow the route for the winter road used to access the existing exploration camp. The winter road will be in operation from late January or early February through March and, under favourable conditions, into early April.

1.3.10 Project Schedule

Construction is anticipated to commence in 2013 (Year -2) assuming all approvals and licences are received. A two-year construction period will be needed to develop the mine infrastructure. The dewatering of Kennady Lake will begin in mid-2013 and continue until the end of 2017 (Year 3) or longer if water quality meets regulatory limits. Construction and dewatering will overlap with operations. After the water above the ore bodies has been drained, pre-stripping of the open pits and initial mining will begin. The first full year of operations will commence in 2015 (Year 1).

Kimberlite will be mined and processed during an eleven-year (2015 to 2025) operational period. As the resource is better defined during the operations phase, additional economic resource may be generated from kimberlite currently classified as inferred or from deep in the kimberlite pipes.

Where possible, the Project plan calls for closure and reclamation of Project components (e.g., waste storage areas) as the mining process advances. Most of the site infrastructure will be removed and all the remaining waste areas covered when the Project site is decommissioned two years after mining ceases (by the end of 2027 [Year 13]). Reclamation monitoring will continue until the remaining areas of Kennady Lake are re-filled. All the remaining site infrastructure (e.g., air strip, camp) will be removed after the remaining dry and planned reclamation areas of Kennady Lake have been restored (anticipated to occur in 2027 [Year 13]). Lake re-filling and monitoring of Kennady Lake and the Project site will continue until it is shown that all regulatory conditions are met.

1.4 REGULATORY PROCESS

1.4.1 Environmental Impact Review Process

This section outlines the regulatory requirements for the submission of the EIS under the environmental impact review (EIR) process.

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. Section 132 through Section 140 of the *Act* describes the EIR process, which is also described in the Terms of Reference (Gahcho Kué Panel 2007).

De Beers filed applications with the Mackenzie Valley Land and Water Board (MVLWB) in November 2005 (De Beers 2005) for a Class A Water License (MV2005L20015) and a Type A Land Use Permit (MV2005C0032) to construct a diamond mine at Kennady Lake. On December 1, 2005, the MVLWB deemed the applications complete and notified the MVEIRB that it had started a preliminary screening. On December 22, 2005, Environment Canada referred the proposed development to the MVEIRB for an environmental assessment.

The MVEIRB initiated the environmental assessment and notified De Beers on January 4, 2006. The MVEIRB staff conducted a three-day technical issues scoping workshop in Yellowknife with federal and territorial government agencies, Aboriginal groups, and De Beers in March 2006. The workshop participants identified and classified environmental and social issues related to the proposed Project and were then asked to rank and prioritize these issues. The MVEIRB staff conducted four one-day community issues scoping workshops in Detah, Łutselk'e, Fort Resolution, and Behchokǫ in April 2006.

On June 12, 2006, the MVEIRB concluded that the proposed Project would likely cause significant public concern and ordered an EIR be conducted for the proposed development pursuant to the *Act*. This is the first time that a proposed diamond mine is being assessed by an EIR. The MVEIRB issued its Reasons for Decision and Report of Environmental Assessment for the De Beers Gahcho Kué Diamond Mine, Kennady Lake, NWT on June 28, 2006 (MVEIRB 2006).

The MVEIRB released the draft *Terms of Reference for the Gahcho Kué Environmental Impact Review Panel* (the Gahcho Kué Panel) on April 24, 2007 and appointed the Gahcho Kué Panel on May 2, 2007. The Gahcho Kué Panel is an independent body consisting of seven members that is responsible for

assessing the potential impacts of the proposed Project. The final *Terms of Reference for the Gahcho Kué Environmental Impact Review Panel* was issued on June 12, 2007.

The Gahcho Kué Panel issued a work plan for the EIR, and the proposed Terms of Reference for the EIS was circulated for De Beers and other participants to provide comment in July 2007. The Terms of Reference for the EIS was released on October 5, 2007 (Gahcho Kué Panel 2007).

This EIS has been submitted by De Beers to provide further information to the Gahcho Kué Panel on potential environmental impacts of the proposed Project in accordance with the Terms of Reference. The Gahcho Kué Panel will conduct a conformity check of the EIS to determine if the Terms of Reference have been met and issue a deficiency statement if necessary. The EIS will be available on the public registry and multiple copies will be provided to the Gahcho Kué Panel. The Gahcho Kué Panel will initiate technical review by independent consultants, experts, and regulatory authorities; issue and process information requests; manage and review the public registry; conduct technical and public hearings if necessary; and prepare a Report of the Gahcho Kué Panel.

The Gahcho Kué Panel's report will make a recommendation to the Minister of Indian and Northern Affairs on whether the proposed development should be approved and, if so, under what conditions (with or without mitigation or remedial measures or a follow up program) or whether the proposed development should be rejected (MVEIRB 2004). The Minister will then distribute the Gahcho Kué Panel's report to every responsible minister for consideration. Upon consideration, the ministers may issue a decision on whether the proposed development will proceed to permitting and, if so, under what conditions.

1.4.2 Regulatory Licenses, Agreements, Permits, Authorizations, and Land Leases

Should the Gahcho Kué Panel recommend approval at the completion of the EIR process, the Project will enter a second licensing phase. De Beers will then make applications for the many licenses, permits, and authorizations that fall under federal and territorial jurisdictions. Application would be made 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 License. The associated review process may include a Water License public hearing. De Beers will finish discussions about, and apply for, an authorization under the *Fisheries Act* to undertake any activities that may impact fish and fish habitat.

De Beers will also apply for other permits, licenses, and authorizations needed to construct and operate a mine in the NWT as shown in Table 1.4-1.

Table 1.4-1 Regulatory Permits, Licenses, and Authorizations Required for the Gahcho Kué Project

Authorization, Permit, License, Approval	Legislation	Agency	Tenure (Short- and Long-term)
Planning, Design, and Implementation of Environmental Baseline Studies for the Environmental Impact Statement and Environmental Monitoring Studies			
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 Environment and Natural Resources, GNWT	permit will be needed long-term for each phase of Project life for a wildlife monitoring plan permits are issued annually
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 License	<i>Fisheries Act</i>	Fisheries and Oceans Canada	as needed for aquatic and monitoring plans permits are issued annually
Construction/Operation/Closure Phase			
Land Lease License 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 the Project maximum 21 year lease for winter access road then renewal to cover final years
Mineral 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 the Project initially issued for 21 years; renewable for a further 21 years
Class A Water License	<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 license needed for all phases of the Project. It is renewable for further years to cover remaining phases of Project life (License tenure in renewals may be variable as dictated by the Mackenzie Valley Land and Water Board)

Table 1.4-1 Regulatory Permits, Licenses, and Authorizations Required for the Gahcho Kué Project (continued)

Authorization, Permit, License, Approval	Legislation	Agency	Tenure (Short- and Long-term)
Class A Land Use Permit	<i>Mackenzie Valley Resource Management Act</i> <i>Mackenzie Valley Land Use Regulations</i>	Mackenzie Valley Land and Water Board	long-term permit needed for all phases of the Project permits generally issued for five years, possibility of extension to seven years with renewal thereafter
Quarry Permit	<i>Territorial Lands Act</i> <i>Territorial Quarrying Regulations</i>	Indian and Northern Affairs Canada	long-term permit needed for construction, operation, and closure phases of the Project 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>	Chief Inspector of Mines, Workers' Safety and Compensation Commission, GNWT	long-term approval needed for construction and operation phases of the Project approval is granted at the start of the Project 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 the Project until closure is complete
Fisheries Authorization or Letter of Advice	<i>Fisheries Act</i>	Fisheries and Oceans Canada, Fish Habitat Management	at each stage of renewal of Water License or Land Use Permit if fish habitat is harmfully altered, disrupted, destroyed or deleterious substances deposited.
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 the Project
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 Chief Inspector of Mines, Workers' Safety and Compensation Commission, GNWT	long-term authorization needed for all phases of the Project
Registration of Fuel Storage Tanks	<i>Canadian Environmental Protection Act</i>	Environment Canada with cooperation from Indian and Northern Affairs Canada	long-term authorization needed while fuel storage tanks are in place
Approval to Transport Dangerous Goods	<i>Transportation of Dangerous Goods Act</i>	Transport Canada	long-term authorization needed to transport dangerous goods for all phases of the Project

GNWT = Government of the Northwest Territories.

1.5 REPORT ORGANIZATION

The EIS document is organized into thirteen main sections.

In Section 1, a brief introduction includes a corporate profile of De Beers, an overview of the proposed development, a description of the regulatory process, and a summary of required licenses and permits. The Terms of Reference, conformity table, and a summary of De Beers' commitments made in the EIS are located in appendices to Section 1.

De Beers has looked at a range of alternatives to carry out the proposed Project. In Section 2, alternatives are described under the following headings: alternatives to the Project, and alternative means of carrying out the Project (e.g., mining methods, water management, mine rock and processed kimberlite management, employee work schedule, and transportation).

The proposed development is described in detail in Section 3. The schedule, review of the three deposits, mining and processing methods, solid waste and water management, site infrastructure and access, employment opportunities, and closure and reclamation are addressed.

The approach to engage communities and regulatory bodies in the EIS development process is highlighted in Section 4. This section lists the meetings and discussions that have occurred, the issues raised, and De Beers' response to the issues.

The process used to collect traditional knowledge, a brief summary of traditional knowledge (from Annex M), and the use of traditional knowledge within the EIS are discussed in Section 5.

The overall assessment approach, including pathway analysis, valued components, spatial and temporal boundaries, and assessment methods, is discussed in Section 6.

The effect of the Project on caribou is assessed in the first key line of inquiry in Section 7.

The aquatic key lines of inquiry (water quality and fish in Kennady Lake; downstream water effects; and long-term biophysical effects, closure and reclamation) are assessed in Sections 8 through 10.

The 12 subjects of note pertaining to the biophysical environment are assessed in Section 11, including impacts on Great Slave Lake; alternative energy sources; air quality; mine rock and processed kimberlite; permafrost, groundwater, and hydrogeology; vegetation; traffic and road issues; waste management and wildlife; carnivore mortality; other ungulates; species at risk and birds; and climate change impacts.

The socio-economic impact assessment in Section 12 consists of three key lines of inquiry (long-term social, cultural, and economic effects; family and community cohesion; and social disparity within and between communities) and six subjects of note (employment, training, and economic development; impacts of tourism potential and wilderness character; demands on infrastructure; culture, heritage, and archaeology; aboriginal rights and community engagement; and proposed national park).

Sustainability and the cumulative effects of this Project, in combination with other existing, approved, proposed, and reasonably foreseeable projects are summarized in Section 13.

Section 14 will briefly list the primary conclusions of the biophysical and socio-economic assessments.

Lists of units, acronyms, references, and glossary terms have been included at the end of each section of the EIS. Appendices follow the EIS section in which they were first mentioned.

1.6 REFERENCES

1.6.1 Literature Cited

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1.7 ACRONYMS AND GLOSSARY

1.7.1 Acronyms and Abbreviations

CEO	Chief Executive Officer
De Beers	De Beers Canada Inc.
DFO	Fisheries and Oceans Canada
EIR	environmental impact review
EIS	environmental impact statement
EMS	environmental management system
IBAs	Impact Benefit Agreements
ISO	International Standards Organization
KCTC	Kimberlite Career & Technical Centre
MPV	Mountain Province Diamonds Inc.
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVRMA	<i>Mackenzie Valley Resource Management Act</i>
NWT	Northwest Territories
OHSAS	Occupational Health and Safety Assessment Series
PKC	processed kimberlite containment
Project	Gahcho Kué Project
SHMS	safety and health management system
UNGC	United Nations Global Compact
WMP	water management pond

1.7.2 Units of Measure

%	percent
ha	hectare
km	kilometre
m³	cubic metre
m³/a	cubic metre per annum
m³/d	cubic metre per day
Mt	million tonnes

1.7.3 Glossary

ecoregion	Subdivisions of ecozones that are relatively homogeneous with respect to soil, terrain, and dominant vegetation.
ecozone	Broad geographical unit defined according to general climate, vegetation, and terrain conditions.
EMS (Environmental Management System)	The EMS identifies how De Beers will manage its environmental responsibilities, and defines specific procedures and instructions that will be followed when performing certain tasks.
kimberlite	Igneous rocks that originate deep in the earth's mantle and intrude the earth's crust. These rocks typically form narrow pipe-like deposits that sometimes contain diamonds.

APPENDIX 1.I

TERMS OF REFERENCE FOR THE GAHCHO KUÉ ENVIRONMENTAL IMPACT STATEMENT



Terms of Reference
for the
Gahcho Kué
Environmental Impact Statement

Oct. 5, 2007

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1 Introduction

1.1 Purpose

The Gahcho Kue Environmental Impact Review Panel (the Panel) is conducting an environmental impact review of the proposed De Beers Gahcho Kue diamond mine. The Panel was established by the Mackenzie Valley Environmental Impact Review Board. The Panel is responsible for assessing the potential impacts of the proposed development, and is an independent body. This is the first time that a proposed diamond mine is being assessed by an environmental impact review established under the *Mackenzie Valley Resource Management Act (MVRMA)*.

The Panel has released this *Terms of Reference* document to provide instructions to DeBeers Canada Inc. (the developer) for preparing an Environmental Impact Statement (EIS) for the environmental impact review of the proposed Gahcho Kué diamond mine. The document sets the scope of the development under review, as well as that of the review itself. It provides the developer with instructions on the assessment methods to be used, the type of information that is required, and the presentation of this information.

The developer is required to produce an EIS based on the reasonable interpretation of these instructions. If necessary the Panel and the parties will address any shortcomings of the EIS through the gap analysis and subsequent information requests of the review process. The developer is encouraged to contact the Panel's office and ask for clarification in writing if necessary.

1.2 Regulatory History

DeBeers Canada Inc. applied to the Mackenzie Valley Land and Water Board for a type A Land Use Permit (MV2005C0032) and a type A Water License (MV2005L20015) on November 24, 2005. The Mackenzie Valley Land and Water Board deemed the applications complete on December 1, 2005 and notified the Review Board that it had started a preliminary screening. On December 22, 2005, Environment Canada referred the proposed development to environmental assessment before the Mackenzie Valley Land and Water Board finalized its screening report. In Environment Canada's opinion the proposed development might have significant adverse impacts on the environment.

The Review Board initiated the environmental assessment and notified the developer on January 4, 2006. Following scoping workshops in Yellowknife, Dettah, Lutsel K'e, Fort Resolution, and Behchoko, as well as scoping hearings in Yellowknife during March and April of 2006, the Review Board determined that the proposed development is likely to be a cause of significant public concern. The Review Board ordered an environmental impact review of the proposed Gahcho Kué project pursuant to MVRMA section 128(1)(c) on June 12, 2006. On June 28, 2006 the Review Board issued its *Reasons for Decision and Report of Environmental Assessment for the DeBeers Gahcho Kué Diamond Mine, Kennady Lake, NT (Report of Environmental Assessment)*.

Following the Review Board's order that an environmental impact review be conducted, the developer applied for a judicial review to the NWT Supreme Court on July 28, 2006.

The Supreme Court heard the application on November 22, 2006 and rendered its decision on April 2, 2007 upholding the Review Board's environmental impact review order. The Review Board notified potential parties and the public of the continuation of the environmental impact review on April 20, 2007.

The Panel is composed of seven members. Although members are appointed by the Mackenzie Valley Environmental Impact Review Board, the Panel is an independent body. It is tasked with conducting the environmental impact review of the proposed development, having regard to the protection of the environment from the significant adverse impacts, and to the protection of the existing and future social, cultural and economic well-being of Mackenzie Valley¹ residents and communities. The Panel is also required to ensure that public concerns are taken into account, and to have regard for the importance of conservation to the well-being and way of life of Aboriginal peoples.

1.3 Approach

Prior to ordering this environmental impact review, the Review Board conducted an environmental assessment which included a technical scoping workshop in Yellowknife and community scoping workshops in Dettah, Lutsel K'e, Fort Resolution and Behchoko, as well as technical and community scoping hearings in Yellowknife. The purpose of this extensive scoping exercise was not only to identify all the issues, but also to prioritize them and if possible, focus future work on the most important ones. The public record for the environmental assessment indicates that the participants in the assessment were of the view that all of the issues are important and that not enough information was available to allow excluding any from the scope. The public record also indicates that particular aspects of the proposed development and of the environment require higher levels of effort than others.

Every issue identified in this *Terms of Reference* requires a sufficient analysis to demonstrate whether it is likely to be the cause of significant impacts. However, some issues have been identified in the Review Board's *Report of Environmental Assessment* as issues that require particular attention during the environmental impact review. These special issues are categorized as either *Key Lines of Inquiry* or *Subjects of Note*.

Key Lines of Inquiry are topics of the greatest concern that require the most attention during the environmental impact review and the most rigorous analysis and detail in the EIS. Key Lines of Inquiry are intended to ensure a comprehensive analysis of the issues that resulted in the significant public concern identified by the Review Board. There are seven Key Lines of Inquiry, which are described in section 4.

Subjects of Note do not have the same priority as Key Lines of Inquiry, but are nonetheless issues that require serious consideration and a substantive analysis. There are eighteen Subjects of Note, which are described in section 5.

Previous environmental impact assessments on diamond mines in the NWT generally analyzed and predicted impacts on a subject-specific bases. Communities have expressed

¹ Throughout this document, the term "Mackenzie Valley" refers to the area as defined in section 2 of the MVRMA.

that their primary concerns often are broad and holistic, dealing with interconnecting systems of the land and the people who depend on it, instead of the more narrow subjects often studied by conventional scientific specialists. The Panel has made efforts to structure this document to meet the needs of both types of reviewers. Therefore, the Key Lines of Inquiry and the Subjects of Note focus on questions and issues that often overlap with other subject areas.

The developer's responses for Key Lines of Inquiry and Subjects of Note must be more than just summaries of the issue-specific responses to the items identified in sections 4 and 5. Responses to Key Lines of Inquiry and Subjects of Note must be comprehensive stand-alone analyses which require only minimal cross-referencing with other parts of the EIS. The developer's level of effort in providing an analysis of each issue must be appropriate for the category that the issue falls within. This means that a substantive effort should be directed at addressing Subjects of Note, and the highest level of effort should be directed towards the Key Lines of Inquiry. The appropriate level of effort will be explained in more detail in sections 4 and 5.

In addition to Key Lines of Inquiry and Subjects of Note, this document describes further information requirements regarding sustainability and cumulative effects, as well as on certain remaining issues. Detailed requirements for these are provided in sections 6 and 7 respectively.

1.4 Definitions

The definitions in sections 3 and 111 of the MVRMA apply. In addition, definitions in the following guidelines and reference bulletins issued by the Review Board apply:

- *Environmental Impact Assessment Guidelines*, Mackenzie Valley Environmental Impact Review Board, Yellowknife, NT. March 2004
- *Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment*, Mackenzie Valley Environmental Impact Review Board, Yellowknife, NT. July 2005.
- *Socio-Economic Impact Assessment Guidelines*, Mackenzie Valley Environmental Impact Review Board, Yellowknife. March 2006.
- *Reference Bulletin: Operational Interpretation of Key Terminology in Part 5 of the Mackenzie Valley Resource Management Act*. Mackenzie Valley Environmental Impact Review Board, Yellowknife. April 2006.

Throughout this environmental impact review the term “community” refers to any potentially affects settlement, town, village, or city as well as any First Nation or Métis group within the Tlicho and Akaichto regions unless otherwise specified.

1.5 Legal Requirements

This environmental impact review is subject to the requirements of Part 5 of the MVRMA. It is also subject to the Review Board's *Rules of Procedure*, which the Panel

adopted as its own. The review process is further described in the Review Board's *Environmental Impact Assessment Guidelines*. Copies of these documents can be obtained by contacting the Review Board or at www.mveirb.nt.ca.

1.6 Document Overview

The remainder of this document is organized as follows:

- Section 2** defines the scope of the development under review, as well as the scope of the environmental impact review.
- Section 3** provides the Panel's general information requirements. It describes the required information about proposed development and the existing environment. This section also discusses various other aspects of assessment, including² how the developer must describe impact predictions, significance criteria, use of traditional knowledge, and follow-up programs.
- Section 4** describes the Key Lines of Inquiry. It provides a description of each issue, an account of why it is particularly relevant, and an account of the Panel's expectations for addressing the issue in the EIS.
- Section 5** describes the Subjects of Note. Similarly to the previous sections, it provides a description of each issue, an account of why it is particularly relevant, and an account of the Panel's expectations for addressing the issue in the EIS.
- Section 6** describes the Panel's requirements for the analysis of the overall sustainability of the development and cumulative effects analysis.
- Section 7** provides information requirements for all remaining issues, organized by subject and listed in tables.
- Section 8** provides guidance on the deliverables required from the developer.

² Throughout this document, the term "including" implies "including but not limited to".

2 Scope

2.1 Scope of Development

The scope of the development under review includes the principal development, which is an open pit diamond mine and any activities or structures associated with the principal development, from pre-construction to closure and reclamation. Table 2-1 provides a brief overview of the development components.

Phase	Components/Activities
Construction	Construction of mine facilities and associated works
	Construction of dikes for dewatering of lake and diversion structures to manage inflows to the watershed
Mining Operations	Removal and transportation of waste rock, kimberlite and mine water from the open pits, including the use of explosives
	Processing of ore to extract diamonds
	Storage and handling of processed kimberlite
	Storage and handling of waste rock
	Removal of diamonds from mine site
Water Management	Dewatering of Kennady Lake
	Handling of mine water
	Surface water management
	Removal of water from Kennady Lake for use at the mine site, both by mining personnel and for mining operations, including dust control
	Water treatment and sewage disposal
Transport and Surface Structures	Use of the current Tibbitt-Contwoyto winter road and any alternate routes
	Construction of an access road from Tibbitt-Contwoyto winter road to development site and any alternate routes
	Construction and upgrading of airstrip and air transport activities
	Solid waste management and containment areas
	Surface structures, including power plant, sewage and water treatment plants, camp facilities, roads, and ore processing plant
Closure and Reclamation	Closure and reclamation of the mine site

Table 2-1: Development Overview

The development scope is based on the *Application Report*³ to the Mackenzie Valley Land and Water Board. Alternatives and any other changes to the proposed development must be included.

2.2 Scope of Review

The scope of the environmental impact review is governed by the requirements of the MVRMA, the Review Board's *Report of Environmental Assessment* of the Gahcho Kué project and the Panel, as well as recognized best practices in environmental impact assessment.

2.2.1 MVRMA Scoping Requirements

The MVRMA defines an impact on the environment to mean “any effect on land, water, air, or any component of the environment, as well as on wildlife harvesting, and includes any effect on the social and cultural environment or on heritage resources” (MVRMA section 111(1)). Moreover, the MVRMA provides the review process with guiding principles, including “*having regard to:*

- a) the protection of the environment from significant adverse impacts of proposed development;*
- b) the protection of the social, cultural and economic well-being of residents and communities in the Mackenzie Valley; and*
- c) the importance of conservation to the well-being and way of life of the aboriginal peoples of Canada [..]” (MVRMA section 115).*

Sections 117(2) and 117(3) of the MVRMA list a number of factors the Panel must consider in the environmental impact review. These include:

- impacts on the environment, including impacts of malfunctions and cumulative impacts, and their significance;
- comments by members of the public;
- the need for mitigative or remedial measures;
- the purpose of the development;
- alternative means of carrying out the development;
- the need for follow up programs; and
- the capacity of renewable resources to meet future needs.

Sections 134(1) and 134(2) of the MVRMA outline a process for the impact review that includes the submission of an environmental impact statement by the developer, an

³ De Beers Canada, 2005: “Application Report for the Mackenzie Valley Land and Water Board”, attachment to Land Use Permit Application MV20050032, DeBeers Canada, November 2005, Yellowknife, NT

analysis of the development by the Panel, as well as a report with the Panel's conclusions and its recommendation whether the proposal should be approved.

The scope of this environmental impact review includes all potential impacts on the biophysical and the human environment from the development, by itself and in combination with other past, present and reasonably foreseeable future developments. The temporal scope of the review ranges from pre-construction activities to construction, operation, closure, and post closure until reclamation is achieved.

In addition to the items described in this *Terms of Reference*, the Panel may require further additional information or clarification at any time during the review process.

2.2.2 Report of Environmental Assessment Scoping Requirements

The Review Board's *Report of Environmental Assessment* provides a description of the Review Board's effort to scope the issues for this development, including technical and community workshops, as well as public hearings. The *Report of Environmental Assessment* lists all issues raised during the scoping in the form of issues diagrams.

The *Report of Environmental Assessment* lists seven Key Lines of Inquiry and eighteen Subjects of Note. These are the results of efforts to prioritize issues during scoping. Parties to the environmental assessment requested that all issues raised, even if not covered by any key line or subject, be included in the scope of assessment. For this reason, all issues listed in the *Report of Environmental Assessment* and in the corresponding issues tables provided in this *Terms of Reference* are within the scope of the environmental impact review.

The Panel accepts the prioritization of issues prepared by the Review Board and requires the environmental impact statement to emphasize, and provide more detailed information for, Key Lines of Inquiry and Subjects of Note, as outlined in section 1.3, section 4 and section 5.

The *Report of Environmental Assessment* outlines the extent of the geographic area for which further study is required. The Panel accepts this.

Geographic scope of study must be appropriate for the potential impact being assessed. The geographic scope is defined for each topic in sections 4 and 5.

3 General Information Requirements

This section outlines information requirements regarding the developer, the description of the proposed development and the existing environment, the methods used for predicting impacts, and the presentation of information in the environmental impact statement.

If, at any time, the developer is unsure about the requirements of this *Terms of Reference* or the nature of the information requested, the developer should contact the Panel office in writing to seek clarification.

3.1 *Development and Environment Description*

3.1.1 Developer

DeBeers Canada must provide the following information regarding the developer and its partners:

- the ownership of the proposed development and its organizational structure, including the division of responsibilities between the partners to the Gahcho Kué project;
- a summary of the environmental performance and policies (including socio-economic policies) of the developer, its partners and parent companies; and
- a description of the relationship between DeBeers Canada and its contractors and subcontractors, including how the company will ensure that the contractors and subcontractors will be responsible for upholding relevant commitments made by DeBeers Canada.

3.1.2 Development Description

While the *Application Report* contains a general description of the development, the developer is required to provide a comprehensive development description as it is currently proposed. The EIS is intended to be a stand alone document. More detail than provided in the *Application Report* may be required for some development components, including ancillary developments that need to be constructed or improved. Sufficient detail must be provided for the Panel to adequately consider the potential impacts of the development and to adequately address the factors to be considered in the impact review (see section 2.2).

In particular, the developer is requested to provide the following additional information:

- ***Economic and Employment Information:*** This must include expected capital costs, estimated operating costs, and total expected revenues (at current market values for diamonds). The number of person years of work, broken down by life cycle stage, must be reported, as well the number and types of jobs (using a

recognized classification system), worker housing situations, transportation to work, and proposed work scheduling.

- ***Rationale for the need of the development:*** The rationale must describe the developer's motivation and the developer's understanding of how the proposed development meets the needs of potentially affected communities and the NWT in general. The analysis must include a discussion of the proposed timing of this development in relation to other ongoing or proposed developments, such as existing diamond mines and the Mackenzie Gas Project.
- ***Alternative means for carrying out the development:*** The EIS must provide a reasonably detailed analysis of alternatives to individual development components or activities, including but not limited to energy sources, mining, transportation and reclamation methods and rotation schedules.

Where appropriate, video presentations, maps, aerial photographs, and other visual media must be used to facilitate understanding of the proposed development by all parties.

The EIS must also include a description of all regulatory permits, licenses and other authorizations required to carry out the development.

3.1.3 Existing Environment

A detailed description of the existing environment is required, including current status and trends for all valued components. This description must contain sufficient detail for the parties and the Panel to thoroughly assess the potential direct, indirect and cumulative impacts from the proposed development. The description must also be presented in sufficient detail with statistical information to be used for subsequent follow-up programs.

The developer is required to describe the following:

Development Location

- the physical location of the proposed development (with maps), including ecozone(s) and ecoregion(s);

Physical Environment

Bedrock and Subsurface Conditions

- bedrock type, depth, and composition;
- acid rock drainage potential of exposed bedrock;

Surficial Materials & Soils

- unconsolidated materials and terrain types, including thickness;
- landforms, including bogs, fens and peat plateaus;
- soil types, including groups, series and type;

Granular Materials

- locations, type of materials, size and depth of deposit;
- permafrost and ice conditions within deposits, including discussion of material stability;
- quantity and availability of granular materials;

Permafrost

- distribution, thickness and lateral extent on the surface;
- permafrost processes, features and stability, including a description of the active layer;
- extent, locations and dimensions of taliks, included any connections between taliks in terms of groundwater movement;
- the interfaces between frozen and unfrozen ground (including frequency and length of segments,);

Areas of Potential Instability

- areas of geological instability, geological hazard and seismicity;

Climate

- prevailing climatic conditions and seasonal variations, including trends and extreme phases such as 100 year rain falls;
- predominant winds, including direction and speed;
- temperature levels;
- precipitation levels (rain, snowfall, snow depth, fog);
- location of recording stations for climatic data and length of record available;

Air Quality

- airshed(s) within which the project is located and provide a rationale for the delineation;
- any current sources of emissions to the airshed(s), including current seasonal variations, climatic conditions that affect air quality;
- visibility;
- sources of data, including locations of any recording stations and length of record available;

Noise

- existing sources of noise in the project area;
- present noise in terms of frequency, duration, decibel levels throughout the year;

Water Quality and Quantity

- all water bodies, watercourses, major drainage areas and watersheds potentially affected by the proposed development;
- Kennady Lake, including:
 - lake bed bathymetry and composition;
 - lake volumes and seasonal variations;
 - freeze/thaw timing;
 - permafrost conditions beneath or around lake; and
 - flow patterns;
- existing water quality for each water body identified for use in the proposed development, and those immediately downstream;
- existing groundwater resources in the project area, including quality and quantity, flow patterns, recharge and discharge areas, and interactions with surface water; and
- identify relevant federal, provincial or territorial guidelines, criteria or legislation;

Biological Environment

Fish and Aquatic Life Forms

- fish-bearing waterbodies and watercourses that may be affected by the proposed development;
- potentially affected species and local populations, and for each describe:
 - seasonal and life cycle movements;
 - habitat requirements for each life stage;
 - local and regional abundance, distribution, use of habitat;
 - known sensitive habitat areas, species or life stage/activity (e.g. spawning, hatching, feeding);
- key species used for traditional harvesting activities and any ecotourism activities;
- micro-organism community present in Kennady Lake, including planktons, algae and benthic invertebrates;
- any known issues currently affecting fish and aquatic life forms in the development (e.g. contamination of food sources, parasites, disease);

Birds and Bird Habitat

- species present, and for each describe:
 - abundance, distribution, seasonal movements, and habitat requirements;
 - areas of specific use at various life stages (e.g. breeding grounds, moulting periods); and
 - any sensitive time periods or habitat;
- key species used for traditional harvesting activities;
- any known issues currently affecting birds and bird habitat in the development area (e.g. contamination of food sources, parasites, disease);

Caribou

- each herd and subspecies present, and for each describe:
 - current population trends, including abundance, distribution and demographic rates such as calf survival, and adult mortality;
 - habitat requirements, including identifying areas of specific habitat use at different life stages (e.g. calving grounds, post calving and summer ranges);
 - attributes of the seasonal habitats that relate to how caribou use them (e.g. insect relief, travel routes, forage);
 - known population pressures, both natural and anthropogenic; and,
 - gaps in current knowledge of caribou such as assessing impacts disturbance, harvesting, behaviour or abundance;
- migratory routes, patterns and timings in relation to the proposed project activities including typical patterns and the range of known variation;
- traditional harvesting activities in relation to caribou;
- traditional values in the context of respect for caribou and how people should behave toward caribou;
- any known issues currently affecting caribou in the development area, (e.g. contamination of food sources, parasites, disease);

Mammals (Excluding Caribou)

- species present, and for each describe:

- abundance, distribution, seasonal movements, habitat requirements;
- areas of specific habitat use at various life stages (e.g. denning);
- any sensitive time periods or habitat; and
- any other relevant sensitivities or limiting factors, such as behaviours or territory requirements.
- key species used during traditional harvesting activities;
- any known issues currently affecting wildlife (excluding caribou) in the development area, (e.g. contamination of food sources, parasites, disease);

Vegetation

- vegetation types in the project area (including a map and any classification systems relevant to the area);
- species present in the project area and indicate any species that are valued or rare;
- baseline levels of contamination of local vegetation including lichen indicator species;
- the existing natural fire regime, including frequency and past events;

Biologically Vulnerable Species

- any species present or potentially present in the project area that are listed under the federal *Species At Risk Act* as Special Concern, Threatened or Endangered;
- any species listed by the GNWT with designations “may be at risk”, “at risk” or “sensitive” in the *General Status Rankings for Species in the NWT*;
- any species present or potentially present in the project area that are under consideration or are listed by as well as any species listed by the Committee on the Status of Endangered Wildlife in Canada;
- for species present, describe their specific locations, critical habitat, residences, population status, limits and size, sensitivities and other limiting factors;

Human Environment

- physical infrastructure present in the project area (including roads, buildings, quarries, power lines and other industrial works) and any roads that provide access to the project area. Especially important is an in-depth

analysis of all winter and all season roads along which equipment, supplies and fuel would be trucked. This analysis must indicate the loads currently traveling these corridors and expected increases during development activities;

- socio-economic conditions, including the current capacity to provide social services in the potentially affected communities ;
- historic and present land use, with the identification of traditional land use groups and areas of overlapping land use; and
- cultural, archaeological and heritage resources, with the identification of the cultural groups who associate with these resources.

The developer is encouraged to use the Review Board's *Socio Economic Impact Assessment Guidelines* to help prepare the socio-economic impact assessment (SEIA). Given the size of the proposed development and the public concern leading to the environmental impact review, a comprehensive SEIA is required. Appendices D and E of the *Socio-economic Impact Assessment Guidelines* identify some elements of the human environment to be considered. When developing a portrait of the existing human environment, the developer must use an issues-driven approach, focusing on valued components, criteria and indicators that are both important to the potentially affected communities in question and potentially affected by the development being proposed.

3.2 Assessment Methods and Presentation

3.2.1 Impact Predictions

Methods used to describe the environmental conditions and to identify and measure impacts on the environment should be consistent with high standards and best practice in the relevant subject area. Predictions should be presented in a way that facilitates the formulation of testable questions for future follow-up programs. Pathways of predicted impacts should be shown schematically and described in words. Methods used to predict how environmental changes could affect the development should also be explained.

In describing methodology:

- explain how scientific, engineering, traditional, and other knowledge was used to
 - describe the existing environment,
 - evaluate potential impacts, and
 - reach conclusions;
- document all models and studies so that analyses are transparent, and where appropriate, reproducible;
- identify which studies included the assistance of communities, who was involved, and how participants were selected;

- specify data collection methods and report the uncertainty, reliability and sensitivity of the methods used to reach conclusions;
- identify and justify any assumptions made;
- support analyses, interpretation of results and conclusions with reference to appropriate literature;
- specify and reference sources for any contributions based on traditional knowledge; and
- identify all proposed mitigation measures, along with evaluations of confidence levels in the effectiveness of those measures, and describe the residual impacts.

3.2.2 Significance Determination

The developer must provide its views on the significance of impacts, using the following criteria:

<i>Direction</i>	The main focus of the impact review is to assess whether the development is likely to cause significant adverse impacts on the environment or be cause for public concern. The developer is also encouraged to report anticipated positive changes. These may be used by parties or the Panel to evaluate the overall impact of the development.
<i>Magnitude</i>	Magnitude refers to the degree of change that may be caused, e.g. amount of water diverted. Where possible magnitude should be reported in absolute and in relative terms.
<i>Likelihood</i>	Likelihood refers to the probability of the impact occurring.
<i>Geographical Extent</i>	Geographical extent refers to the area affected. In using this criterion “locational intensities” must be considered as well, i.e. where an impact may affect various areas to differing degrees, separate analysis may be required. For example, downstream effects may be separated into several geographic areas of high, medium, low magnitude, rather than reporting an average impact on a large area.
<i>Duration</i>	Both the duration of individual events (e.g. waste water discharges) and the overall time frame during which the impact may occur (e.g. during construction, operation, and closure) must be considered. In addition, the length of time effects will last must be reported and considered.
<i>Frequency</i>	The frequency of impacts and events causing impacts must be considered, as well as the length of time between occurrences.

Reversibility

The reversibility of any impacts must be considered not only in terms of whether the impact is reversible at all but also in terms of how much time will be required for the affected environmental component to recover.

In terms of the human environment the manageability of impacts may be considered rather than their actual reversibility. Where appropriate the evaluation must also identify the existing social resources that may be diverted due to the proposed development to facilitate maintenance of acceptable conditions.

Ecological Context

Ecological context refers to the type of the impact as well as the nature of the affected environmental component. For example, the mortality of a hundred caribou might be considered significant, while the mortality of a thousand mosquitos might not, although all other criteria such as frequency, geographic extent and even magnitude may appear to indicate otherwise. Generally an impact on a highly valued component may trigger significance at relatively low magnitude, duration, and likelihood.

3.2.3 Uncertainty Analysis

Any impact prediction or impact analysis contains an amount of uncertainty. This may be related to limitations in understanding of natural systems or the inability to predict future events or conditions (e.g. disasters or a very warm winter). The environmental impact statement must provide a reasonably accurate description of the uncertainties associated with each prediction or analysis. Similarly, when making a significance determination the impact statement must report the confidence with which this determination can be made. The uncertainty analysis must include a description of the confidence in underlying assumptions, models, data sources, etc. The uncertainty analysis must also identify parameters that should receive particular attention when developing follow-up programs.

3.2.4 Valued Components

Conventionally environmental impact assessment uses valued components (also referred to as valued ecosystem components or valued socio-economic components) to focus impact predictions on important components of the bio-physical and human environment. Individual species or societal goals are commonly selected as valued components. The environmental assessment of the Gahcho Kué project already identified numerous potential valued components, listed in the various issues diagrams in the *Report of Environmental Assessment* and provided in more detail in the tables in section 7.

The Key Lines of Inquiry involve highly valued components. Similarly, the Subjects of Note provide important information on the selection of valued components. The developer must use the issues identified during the environmental assessment as the basis for the selection of any valued components. Key Lines of Inquiry and Subjects of Note are interdisciplinary, and typically will involve more than one valued component. The developer may select additional valued components not identified in the *Report of Environmental Assessment*, but must ensure that all Key Lines of Inquiry and Subjects of Note are thoroughly reflected in the identification of related valued components.

The EIS must provide a rationale for selecting valued components.

3.2.5 Traditional Knowledge

The Panel will rely on both traditional knowledge and conventional scientific knowledge in its deliberations. In the Panel's view traditional knowledge holders are experts in their own right and must be treated with the same respect as scientific experts.

The developer is encouraged to apply the Review Board's *Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment* wherever applicable when preparing the environmental impact statement. The environmental impact statement is required to:

- provide a summary of efforts made to collect relevant traditional knowledge;
- explain how traditional knowledge influenced project design, impact predictions, and mitigation measures; and
- provide a plan for future cooperation between the developer and traditional knowledge holders covering the full temporal scope of the proposed development.

Traditional knowledge is expected to be particularly helpful in the holistic analysis but use of traditional knowledge must be reported in all relevant sections.

In addition to incorporating traditional knowledge in impact predictions and significance analysis for individual issues, Key Lines of Inquiry, and Subjects of Note, the EIS must contain a comprehensive, stand alone, section on traditional knowledge. This section must provide sufficient information to allow the Panel and parties, particularly those representing traditional knowledge holders, to evaluate acquisition and analysis of traditional knowledge by the developer.

The traditional knowledge summary report must address the following specific items:

- which communities and traditional knowledge holders participated in any traditional knowledge studies and how those participants were identified and agreed upon;
- what approach was taken in working with traditional knowledge holders and in the collection and use of traditional knowledge, and why;
- verify for each community whether there are policies and cultural practices for the acceptable standards for working with traditional knowledge holders and

handling the traditional knowledge. Where these do exist, verify how they were adhered to;

- sources of traditional knowledge that have been used to date, including specific studies, archives, and individuals interviewed;
- when traditional knowledge is collected from existing studies and reports, provide verification that secondary sources are relevant and appropriate;
- evidence that the traditional knowledge was collected and peer-reviewed with the Aboriginal community or traditional knowledge holders, and approved by the appropriate individuals or organizations; and
- how traditional knowledge and traditional knowledge holders have influenced the developer's project design, impact assessment, and mitigation measures, as well as reclamation and closure planning.

The EIS must outline any plans for future cooperation between the developer and traditional knowledge holders (e.g. in monitoring and mitigation programs), and provide any commitments or agreements on which groups will participate in future studies.

Subject to confidentiality considerations the summary report on acquisition and analysis of traditional knowledge must include, or have regard to:

- who traditionally (individuals and communities) has used the area;
- who currently uses the area;
- what types of use are noted (historical and current);
- cultural practices and sacred sites;
- hunting, trapping and gathering;
- social activities;
- land use patterns; and
- cultural significance (including spiritual significance) of the area.

Where traditional knowledge and conventional science come to different impact predictions, the EIS must identify the different conclusions and outline how the developer proposes to deal with the disagreement (e.g. through adaptive management options).

The methods used in the acquisition, analysis, and presentation of traditional knowledge are at the developer's discretion but must be consistent with the Review Board's *Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment*.

3.2.6 Alternatives

Section 3.1 of these *Terms of Reference* requires the description of alternatives to the development and of alternative means of carrying out the development. The developer should use the development as described in the EIS as the baseline case for predicting

impacts and determining significance of alternatives. Development alternatives may be analyzed in terms of how they would alter these impacts, where separate impact predictions are not feasible.

The EIS must provide a reasonably detailed analysis of alternatives to individual development components or activities, including but not limited to:

- energy sources and energy conservation measures;
- disposal methods (e.g. alternatives to back filling of pits, alternative designs for the waste rock pile, alternatives to the use of two on-land processed kimberlite containment facilities);
- alternative transportation methods to reduce impacts along the ice road route;
- alternatives to the conventional two week staff rotation;
- alternative reclamation methods (e.g. alternatives for re-filling Kennady Lake); and
- other alternatives that the developer considered or may be considering (e.g. different extraction rates to extend the life of the mine, underground mining options).

When discussing alternatives the EIS must also provide an overview of how environmental conditions have influenced the project design. The EIS should not limit alternative means for carrying out the development to alternatives the developer currently considers feasible. The EIS must report all alternatives the developer considered and dismissed during the early project design, and must provide reasons for dismissal.

In addition, when analyzing alternatives to the development, the developer needs to do a full accounting of potential opportunity costs to communities and governments associated with the development. This may require a calculation of "futures foregone" (i.e., what alternative future development options would be undermined or otherwise impacted if the proposed development goes ahead). Consideration of potential adverse impacts on eco-tourism, outfitting, and the traditional harvesting economy must be included.

3.2.7 Follow-Up Programs

The MVRMA defines a follow up program as "*a program for evaluating*

- (a) the soundness of an environmental assessment or environmental impact review of a proposal for a development; and*
- (b) the effectiveness of the mitigative or remedial measures imposed as conditions of approval of the proposal."*

The proposed development would be the fifth diamond mine in the Slave Geological Province and the fourth within the Mackenzie Valley. This fact not only causes concerns related to cumulative effects, it also provides the opportunity to evaluate impact

predictions and mitigation measures from previous developments, and to adapt the design and management of the Gahcho Kué mine accordingly.

The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.

The EIS must provide a review of relevant research, monitoring and follow up activities since the first diamond mine was permitted in the Slave Geological Province to the extent that the relevant information is publicly available. This review must focus on the verification of impact predictions and the effectiveness of mitigation measures proposed in previous diamond mine environmental impact assessments. In particular the developer must make every reasonable effort to verify and evaluate the effectiveness of any proposed mitigation measures that have been used, or are similar to those used at other diamond mining projects in the Mackenzie Valley.

The EIS must include a proposal of how monitoring activities at the Gahcho Kué diamond mine can be coordinated with monitoring programs at all other diamond mines in the Slave Geological Province to facilitate cumulative impact monitoring and management. This proposal must also consider reporting mechanisms that could inform future environmental assessments or impact reviews. The developer is not expected to design and set up an entire regional monitoring system, but is expected to describe its views on a potential system. The developer must also state its views on the separation between developer and government responsibilities.

The term “monitoring” can be applied to several different activities. The developer must clearly distinguish which of the following meanings is meant with each use of the term “monitoring” in the EIS:

1. compliance inspection (i.e. the activities, procedures and programs undertaken to confirm the implementation of approved design standards, mitigation, conditions of approval and company commitments);
2. environmental monitoring (i.e. monitoring to track conditions or issues during the development lifespan, and subsequent adaptation of project management); or,
3. follow-up (i.e. any programs to verify the accuracy of impact predictions and determine the effectiveness of mitigation measures).

3.2.8 Presentation and Cross Referencing

The EIS must include a guide that clearly cross-references the *Terms of Reference* with the impact statement. Where any information required by the *Terms of Reference* cannot be provided, the EIS shall include the reason for the omission. The environmental impact statement must include an index that will allow parties to quickly find relevant sections of

the document. All mitigation measures proposed by the developer must be summarized in a “Table of Commitments” for easy reference.

The developer is encouraged to use modern technologies for presenting the information, including the use of hypertext for easy cross referencing. Similarly the use of maps, satellite imagery, photographs and other graphical depictions (such as Google Earth) is encouraged, as is the use of non-technical plain language.

Where possible, geographic information, or data, should be submitted in a format that allows the Panel and parties to conduct their own geographic information system (GIS) analysis. All GIS data must conform to the standards set by the GNWT’s spatial data warehouse⁴.

To facilitate public participation in this review, the EIS must contain plain language summaries in English, Chipewyan, Tlicho, and French.

⁴ The GNWT’s spatial data warehouse may be accessed at <http://maps.gnwtgeomatics.nt.ca/portal/index.jsp>.

4 Key Lines of Inquiry

4.1 Introduction to Key Lines of Inquiry

Key Lines of Inquiry are areas of the greatest concern that require the most attention during the environmental impact review and the most rigorous analysis and detail in the EIS. Key Lines of Inquiry are identified to ensure a comprehensive, detailed analysis of the issues that resulted in significant public concern about the proposed development during the environmental assessment.

Four Key Lines of Inquiry deal mainly, although not exclusively, with the biophysical environment. These are:

- caribou;
- water quality and fish in Kennady Lake;
- downstream water effects; and
- long term biophysical effects and closure issues;

Another three Key Lines of Inquiry concern mostly the human or socio-economic environment. These are:

- family and community cohesion;
- social disparity within and between communities; and
- long term social, cultural and economic effects.

Because these are top priorities, they require the highest level of consideration. For each of these, the analysis must include substantive modeling combined with expert evaluation in producing reliable predictions. Detailed consideration of public input and traditional knowledge are expected for all of these topics. Any that involve valued components that are influenced by more than one human activity or development will require detailed cumulative effects analyses. As well, all the Panel's expectations regarding assessment methods, as described in section 3.2, must be addressed for each Key Line of Inquiry.

The remainder of this section describes the Key Lines of Inquiry and provides specific information requirements where these have been identified in the environmental assessment.

4.1.1 Caribou

The environmental assessment identified caribou as the single most valued component. Caribou numbers decreased sharply in recent years and there seems to be consensus among Aboriginal groups that caribou are in poor health. Caribou are not only an important food source for traditional land users, they play an extremely important role in Aboriginal culture. Impacts on caribou are likely to result in corresponding economic,

social, and cultural impacts. Threats to caribou are seen not just from the proposed development alone but cumulatively from all the diamond mines, mineral exploration, and other activities within their range.

Within this Key Line of Inquiry the EIS must detail any effects on caribou, as well as their significance and likelihood in accordance with the instructions in sections 3.2 on assessment methods and section 7 on wildlife issues. In addition, the EIS must address how changes to abundance, health, distribution, and behaviour of caribou may affect the social, cultural, and economic well being of residents of the Mackenzie Valley, particularly Aboriginal communities in the regional study area. This must include an evaluation of possible contamination of country foods, and of possible impacts on hunting.

Discrepancies exist between some impact predictions in previous diamond mine assessments and the real or perceived outcomes. The EIS needs to address this by explaining how it incorporated lessons learned. To this end the developer is required to include a summary of caribou research and caribou related monitoring activities and their results for the potentially affected herds since the first diamond mine was permitted, to the extent that relevant information is publicly available.

The EIS must outline management options for dealing with impacts on caribou and related socio-economic impacts. For situations where the proposed development is predicted to be only one of many sources of impacts, direct or indirect, that combine in a cumulative manner, the EIS should outline what contributions this development can make to addressing a cumulative problem.

For potential impacts on caribou the geographical scope includes the potentially affected portion of the range of any herd that may be affected, including but not restricted to the vicinity of the mine site, the access road from Mackay Lake, and the Tibbitt to Contwoyto Road up to the start of the access road at Mackay Lake. Research and monitoring activities must be included for the Tibbitt to Contwoyto winter road corridor. Observations from existing diamond mines must be used to establish how far from a mine site caribou show behavioural changes.

The environmental impact assessment for the BHP Ekati mine in the mid 1990s coincided with a higher population level for the Bathurst caribou herd. The Gahcho Kué project comes at a time when caribou populations are considerably smaller. This may influence the significance of potential effects on the herd.

The following specific information needs were identified and must be included in the caribou-specific impact analysis:

- Information on all caribou herds with ranges that include the area of the proposed development, as well as the Tibbitt to Contwoyto winter road (including population size, demographics, trends, range use patterns and condition).
- A description of any life stages (including calving, post calving, overwintering, and migration) during which each herd may interact with the proposed development.

- An estimate of the amount (absolute and relative) of habitat loss, change, degradation, or effective habitat loss for each potentially affected herd for various life stages resulting from the development.
- An estimate of the existing habitat fragmentation at the landscape (seasonal range) and local (site) scale, the expected increase, and its possible effects on each potentially affected caribou herd for various life stages.
- An analysis of ways the proposed development may influence the energy balance of caribou under different seasonal conditions and to what extent this may affect birthrates, and calf survival. The analysis must include potential behavioural changes resulting from development components or associated activities, including sensory disturbance, effects on foraging, resting, and caribou movements within the development area. Moreover, the analysis must be broken down into disturbance from individual components, including construction and operation of the mine, traffic on the access route, as well as air traffic.
- The identification of all possible sources for increased caribou mortality.
- The identification of all hazards to caribou within the development area and access routes, particularly Tibbitt to Contwoyto winter road crossings, as well as road crossings at the site and hazards that may be posed from waste rock and processed kimberlite containment facilities, materials used to build roads and berms and the exposed lake bottom (e.g. contact with contaminated or hazardous materials).
- The identification of all possible pathways for caribou exposure to contaminants, e.g. from exposure to dust or intake of contaminated forage (e.g. lichens affected by air pollution) or direct intake of tailings, as well as any measures or actions to be taken to minimize exposure. Include a description of any resulting caribou health issues (risk analyses) as well as an evaluation of potential avoidance of caribou as food source by Aboriginal communities.
- An identification of all potential changes to the predator-prey relationship of any potentially affected herd and how this may affect the herds.
- The identification of all components and associated activities of the development (including use of the Tibbitt to Contwoyto winter road) that may have an effect on caribou, regardless of whether they are in the developer's view significant or not.
- The identification of all additive, multiplicative, or synergetic effects that may result from the components or activities associated with the proposed development. Determine the overall effect of all components of the development as a whole on caribou.
- A description of any methods used to distinguish between impacts from development and natural variations in caribou numbers, health or behaviour.
- The identification of potential impacts on caribou from sources other than the proposed development, particularly those that may be influenced by the development. This must include an evaluation of any potential development related changes to harvest levels for each potentially affected caribou herd, e.g. by creating an access

via the Mackay Lake road into an area previously inaccessible to vehicular traffic. Natural factors that increase the vulnerability of caribou must be considered as well.

- The identification of all cumulative effects of other past, current, or reasonably foreseeable future developments within the range of each potentially affected caribou herd in combination with individual components or activities of the proposed development and its effects on other environmental components such as predators as well as the overall effect of the proposed development.
- An outline of any potential measures or actions to minimize impacts, (e.g. various road bed designs). To the extent possible this should include an evaluation of any proposed mitigation against the measures implemented by previous diamond mine developments and a discussion of the likelihood of success for each measure.
- An explanation how any proposed mitigation measures, including plans for progressive reclamation, will contribute to the sustainability of the Bathurst caribou herd as well as other potentially affected herds.
- An outline of any adaptive management strategies (i.e. what management response will occur if adverse effects on caribou are detected) for any of the items listed above, as well as any plans for monitoring effects on caribou. Management strategies must be outlined where observed effects may be linked directly or indirectly to the proposed development.

4.1.2 Water Quality and Fish in Kennady Lake

Lowering the water level of the majority of the lake and exposing the lake bottom for 15 or more years is of great concern to relevant government departments and Aboriginal communities. During the scoping exercise both groups questioned the ability of the ecosystem to recover. Similarly, the question of long term stability of deposited waste rock and processed kimberlite in excavated pits resulted in concern among various parties.

The EIS must provide a detailed analysis of all impacts on fish abundance, health, and fitness for consumption including a comprehensive analysis of potential impacts on water quality of Kennady Lake as a result of possible contamination. Particular emphasis must be placed on the ability of the lake ecosystem, particularly fish and fish habitat, to recover from prolonged exposure of the lake bed and on the viability of the proposed disposal methods for waste rock and kimberlite. The geographic scope for the analysis of this Key Line of Inquiry includes Kennady Lake itself, along with its inlets, outlets and riparian zones. Downstream areas are considered in the next Key Line of Inquiry.

This Key Line of Inquiry is closely related to the one described in 4.1.4. Where appropriate information requirements identified there should also be addressed here via a summary analysis.

Describe the following regarding fish in Kennady Lake:

- any impacts associated with the fish-out, fish salvage and restocking;

- habitat destruction and creation, including potential for interrupting fish migration, alterations to natural drainage, and addition of deep water habitat;
- possible fish contamination and wildlife and human health effects from contaminated fish consumption, including pathways and long and short term exposure levels and health effects of toxic exposure levels on wildlife and humans; and
- possible changes to fish behavior including interruption of migration and spawning patterns and associated effects and changes in the behavior of wildlife species dependent on fish populations.

Describe the following regarding water quality in Kennady Lake:

- water balance for Kennady Lake and analysis of related uncertainties;
- expected changes in turbidity in Kennady Lake with adaptive management options for unexpected turbidity levels (this analysis may use simulation models);
- the hydrogeological dynamics of the lake bottom under freezing conditions, in particular the potential for highly concentrated deep ground water to be expelled into the remaining ponds during freeze up, as well as an assessment of changes in the thermal regime of the lake bottom and the extent of freezing;
- a description of maintenance procedures for long-term frozen conditions of potentially reactive waste rock and barren kimberlite, including the incorporation of frozen conditions under climate change parameters;
- a long-term monitoring plan of thermal conditions of frozen waste rock and PK piles;
- any interactions between ground water and submerged processed kimberlite and waste rock, including the possibility of the pits being a long term contamination source;
- potential contamination sources including: mill effluent, lakebed sediments, backfilled pits, use of explosives, spills (including additive effects of minor spills over time), waste rock and processed kimberlite, and deep ground water, including adequate information to evaluate the potential for dust generation from the exposed lake bed (e.g. substrate characteristics, particle size, sediment chemistry) as well as bench testing of drying behaviour;
- all potential sources for water contamination, particularly hydrocarbon or ammonium nitrate contamination including accidents and malfunctions. This must also include an evaluation of the potential for explosive charges, exploded or unexploded, to contribute to pollution;
- a detailed water management plan with information on treatment surfactants and reagents with enough detail to assess the capability of the treatment system to protect water quality, including back up options for adaptive management;

- any proposed collection system for runoff from processed kimberlite and waste rock storage facilities, including expected contaminant levels and contingency plans;
- any proposed monitoring activities, including monitoring of untreated runoff from roads or other structures (The principles addressed in section 3.2.7 on compliance inspection, monitoring, and follow-up apply);
- the spatial extent of downstream effects and how these effects may change through time (seasonally and annually);
- water balance calculations during present conditions and over time as the project proceeds is required to compare baseline conditions with future downstream effects;
- impacts on riparian vegetation in Kennady Lake, water fowl, semi-aquatic furbearers, terrestrial mammals, and channel stability from downstream effects of water discharges during construction, fluctuating water levels during operation, and reduced water levels while the lake is re-filling;
- impacts on wildlife resulting from a possible change in freeze up and thaw conditions associated with the de-watering of Kennady Lake;
- reversibility of impacts associated with water level changes and the ability of affected ecosystems to recover;
- the effects of lake dewatering and excavation of pits on ground water flow and quality in the Kennady Lake area in the short and in the long term as well as details on how groundwater flows will be managed (including simulations);
- potential interaction between ground water and the open pits, as well as between ground water and submerged waste rock or kimberlite, including the possibility of the pits being a long term contamination source;
- the relationship between taliks (i.e. unfrozen sections of soil beneath water bodies) and ground water flows in the project area, particularly potential for taliks acting as a pathway for contaminants, including the distribution of taliks in the project area and any connection or interactions between taliks of different lakes;
- the chemical stability of co-disposed waste rock and processed kimberlite; and
- confidence in predictions from long term modeling has been conducted for permafrost issues, particularly effects of the pits on the thermal regime, and a verification that robust monitoring program will be in place.

4.1.3 Downstream Water Effects

The release of large quantities of water during the dewatering of Kennady Lake may have effects on downstream creeks and lakes. Large short-term increases in water flow will be followed by a substantial decrease over a longer period of time as the tertiary pit and lake are re-filling. In addition to fluctuations in lake water volume, Aboriginal communities

are concerned about possible water contamination, their experience with older mines being mainly negative. Areas of concern include but are not limited to: water quality and quantity, riparian vegetation, fish abundance and quality, and wildlife effects.

The ‘downstream water effects’ and ‘water quality and fish in Kennady Lake’ Key Lines of Inquiry are related in that similar concerns are raised. Where the analysis of ‘water quality and fish in Kennady Lake’ identifies potential impacts or where uncertainty exists, the EIS must provide an evaluation of the potential downstream effects and extent of impact. All of the applicable information requirements relating to fish and to water quality described with respect to Kennady Lake in section 4.1.2 must be addressed in the this section with respect to downstream water bodies. This section must also include:

- physicals effects of increased flows and changes to water quality on downstream water bodies;
- an analysis of the geographic extent of any downstream effects and a water balance for all affected water bodies;
- a detailed assessment of impacts on aquatic life that considers timing and levels of increased flows and changes to downstream water quality relative to sensitive life stages of fish; and
- a detailed assessment of the potential biological impacts of changes, such as effects on riparian habitat and wildlife such as semi-aquatic fur-bearers and waterfowl that use riparian habitat.

The geographical scope of this Key Line of Inquiry includes all water bodies (and associated riparian areas) downstream of Kennedy Lake up to Great Slave Lake.

4.1.4 Long Term Biophysical Effects, Closure and Reclamation

The environmental assessment revealed considerable concern over the long term effects of this development. In particular, the environmental assessment identified uncertainty about the viability of encapsulating processed kimberlite and mine water in the mined out pits, as well as pessimism about the recovery of the lake ecosystem after mine closure. The EIS must include a conceptual closure and reclamation plan and an analysis of the viability of this plan.

The scoping exercise also resulted in the following specific information needs regarding long term biophysical effects:

- A demonstration of the long term physical stability including long-term maintenance of frozen conditions both within and under waste rock and processed kimberlite storage facilities. If long-term waste storage is solely reliant on frozen conditions, stability of frozen conditions in climate change scenarios must be included;
- a description of any plans to restock the lake;
- an evaluation of the long term physical stability of any works constructed in connection with the development, including reclaimed areas;

- an evaluation of the potential for acid generating rock, the resulting impacts, and the management options to deal with acid generating rock and its impacts;
- a summary of the use of public consultation, consultation with first nations, and traditional knowledge in determining standards and methods for reclamation;
- an evaluation of the possibility of speeding up the re-filling of the lake by utilizing additional water sources;
- a description of the type of fish and other aquatic habitat that will be created during reclamation, including a comparison to the existing habitat, as well as a description how DFO's No Net Loss requirements will fully mitigate all predicted impacts on fish habitat;
- an evaluation of the capacity of the ecosystem to fully recover, or a prediction of the type of ecosystem that is expected to be created instead; and
- any long term monitoring plans, need for long term care and maintenance, assurance of long term monitoring and maintenance, including long term structural and environmental stability of waste rock and kimberlite storage facilities.

As outlined in section 3.2.7, the EIS must include a description of follow up and monitoring programs, contingency plans, or adaptive management programs designed to verify the impact predictions of this environmental impact review. A detailed contingency plan, spelling out monitoring and adaptive management strategies, must be developed to address the possibility that partially backfilled pits will adversely impact water quality in the immediate and surrounding areas.

The geographic scope for this Line of Inquiry includes the areas where any valued component may be affected by the development, including the development area, downstream areas for impacts related to aquatics. The geographical scope for cumulative effects on wildlife should reflect the biological range characteristics of each species or herd.

Since cumulative effects were of great concern during the scoping sessions, the EIS must address follow up programs not only in regards to the direct impacts of the proposed development but also in regards to cumulative impacts in combination with other developments. The EIS must include the developer's vision of a coordinated monitoring program for cumulative effects from all diamond mines between the developer, other developers, Aboriginal communities, and government agencies. The developer is encouraged to review the *Mine Site Reclamation Guidelines for the NWT*.⁵ This requirement is closely related to requirements of section 4.3.2 on cumulative effects assessment.

⁵ Indian and Northern Affairs Canada, 2007: "Mine Site Reclamation Guidelines for the NWT", Indian and Northern Affairs Canada, January 2007, Yellowknife.

4.1.5 Family and Community Cohesion

During environmental assessment scoping sessions representatives of Aboriginal communities reported that increased substance abuse has been observed since diamond mines started operating in the NWT. Moreover, the environmental assessment revealed concerns that an additional influx of money combined with rotational work schedules may have an adverse effect on families, communities and individuals. The scoping exercise identified community wellness related issues applying to individual First Nations and Métis communities, whether located in a specific settlement or not.⁶

The scale and scope of this development (alone and in combination with other developments), along with the sensitivity of the potentially affected communities, indicates that a Comprehensive SEIA, as outlined in Section 3 of the Review Board's *Socio-economic Impact Assessment Guidelines* is necessary.

The geographical scope for this Key Line of Inquiry includes (but is not limited to) communities in the Tlicho and Akaitcho regions.

The EIS must provide a detailed analysis of this Key Line of Inquiry including the following specific issues:

- alternatives to two week rotation (see also section 3.2.6 on alternatives);
- influx of outside workers placing increasing demands on community social fabric and facilities;
- absence of workers from their family;
- decreased family cohesion, including breakups of families;
- absence of leaders, volunteers, etc. from communities;
- changes in levels of substance abuse;
- changes in traditional practices and levels of participation in traditional practices;
- migration of workers and their family to larger centres; and
- money management and changes in lifestyle choices.

For this, as well as other socio-economic issues, it is important that the EIS provides a separate analysis for each potentially affected community, including communities not associated with a particular settlement in addition to a regional study. The analysis must address the vulnerability of each community and describe how each community was involved in the assessment of impacts for this Key Line of Inquiry. The EIS must report on indicators of cultural resilience for affected communities, such as practice of language, story telling, and cultural activities, as well as consumption of country foods.

The Panel realizes that the developer cannot be expected to solve pre-existing social problems, such as substance abuse or domestic violence, through the proposed development. Nor can the developer be held responsible for all choices made by individuals, which are influenced by numerous factors beyond the developer's control.

⁶ The table titled "Community Wellness Issues" in section 7 lists the six groups of issues that were identified.

Nonetheless, given the importance of these issues, it is incumbent upon the developer to isolate aspects of its proposed development that might add to the “impact load” being felt by potentially affected communities. The EIS must identify existing vulnerabilities and determine how the proposed development might magnify them.

In addition, the developer is expected to work with communities and relevant government agencies to develop innovative solutions to identified problems. To the extent possible the EIS must outline how the developer might facilitate a cooperative approach to social problems, which may be related to the proposed development. As a minimum the EIS must provide an overview of how similar issues have been addressed in other developments.

While conducting an impact assessment based on identified Valued Components, specific consideration shall be given, but not be limited to, the following, broken down into appropriate geographic and demographic units of analysis. For each chosen component or indicator, the developer is required to identify any development-related changes that may impact on it.

- community and population health and associated indicators such as, but not limited to:
 - population in- and out-migration;
 - alcohol and drug access and use;
 - access to health care;
 - housing pressures;
 - crime rates;
 - access to child care;
 - increased social divisions within or between communities;
 - public safety; and
 - educational access and education completion levels.
- the physical, mental, and cultural well-being of northern mine workers and northern mine workers’ families;
- existing and required social service networks to support community health and wellness (pressures on social services);
- the effect of this and other past, present and reasonably foreseeable developments on political and social development, cultural values, traditional practices and language in potentially affected communities;
- a description, for each identified potential effect, as to how the development may effect valued social and cultural components:
- at the regional level;
- at the local level for each potential-affected community; and

- among particularly vulnerable sub-populations within potentially affected communities, such as women, children and Elders;
- an identification of lessons learned from social and cultural impacts of previous mine developments in the NWT and the North, and how they have been incorporated into the impact identification, prediction and mitigation for this development;
- a discussion concerning the development of a Human Resources Management Plan and any programs that will be offered at the mine site to identify and mitigate social problems; and
- a comparison of the likely relative distribution of beneficial and adverse cultural and social impacts among the different potentially affected communities.

4.1.6 Social Disparity Within and Between Communities

The scoping exercise in the environmental assessment identified the issue of increasing social disparity between those participating and benefiting from mine development and those who will not, or cannot, participate. Elders, traditional land users, women, and others who are less likely to participate in mining related activities are not only left behind but have to contend with increased costs of living, causing an effective decrease in standard of living and associated social problems. During the environmental assessment Aboriginal communities expressed concerns that they may not benefit from this development. This concern was based on their experience with previous mines and on the already existing skilled labour shortage in the NWT. (See also section 4.1.7 on lost opportunities.)

The EIS must address this issue in a comprehensive and detailed manner including impact predictions and proposed measures to mitigate any impacts. The EIS must clearly state the criteria and relevant indicators for analyzing increased social disparity. This analysis must address disparity not only between individuals but also between communities. As with the previous Key Line of Inquiry (section 4.1.5) a separate analysis for each potentially affected community addressing vulnerabilities, community engagement, and innovative solutions that may indirectly offset the direct impacts from the proposed development is required.

The geographical scope for this Key Line of Inquiry includes (but is not limited to) communities in the Tlicho and Akaitcho regions.

Socio-economic issues, and this Key Line of Inquiry in particular, resulted in high levels of community concern during the scoping of the environmental assessment. The EIS must, therefore, include a detailed description of the engagement with potentially affected communities to ensure adequate consideration of socio-economic issues. This description must include details regarding the specific concerns raised, mechanisms for their resolution, and any aspects of project design intended to accommodate concerns. Communities in the Tlicho and Akaitcho regions include First Nations and Métis residing in any of the cities, towns or settlements in the respective regions.

4.1.7 Long Term Social, Cultural and Economic Effects

During the environmental assessment process, concerns were raised by community members regarding a potential economic downturn after mine closure, resource extraction at a time when many Aboriginal people cannot participate (or are already working at other mines), and lack of long-term benefit to communities as a whole.

The EIS must provide a comprehensive analysis of the development's long term social, cultural, and economic effects. One area to be evaluated is the issue of potentially lost opportunities. The developer proposes to extract a resource at a time when northerners may not be in a position to fully benefit. That resource may not be available when communities may be in a better position to benefit from such a development. The analysis may include a discussion of opportunities not related to the development but facilitated by it. An analysis of projected benefits, actually accrued benefits, and how the proposed development may improve on previous developments is required.

The geographical scope for this Key Line of Inquiry includes (but is not limited to) all communities in the Tlicho and Akaitcho regions, and the NWT overall.

The EIS must also address the following additional longer term issues related to the human environment:

- contribution of this development to the cumulative long term effects on communities from an increasing pace of development, considering communities' abilities to respond to, plan for and benefit from development;
- lack of capacity for monitoring by communities and government;
- single resource dependency – economic over-reliance on one resource;
- increased demands on social, cultural and economic services (e.g. medical transportation, emergency services, hospital services, education, child care, social service, and public health services);
- the likely level of in- and out-migration as a result of the development, including out-migration of skills, and the likely economic impacts of in- and out-migration among potentially affected communities;
- health effects from changed diet (e.g. less country food);
- pressures on organizations and businesses servicing the region, including those who maintain infrastructure or provide social services, caused by:
 - the mobilization of local labour away from potentially affected communities to the Gahcho Kué workforce; and
 - socio-economic effects associated with increasing disposable income and a larger reliance on the wage economy;
- particular sub-populations within potentially affected communities that are more vulnerable to any of the discussed potential economic impacts;
- an estimate of required contractor and subcontractor goods and services required through the different stages of the project life cycle, and associated direct and

indirect economic effects (e.g., local and regional income multipliers);

- the opportunities for - and capacities of - local, regional and territorial businesses to compete for the right to supply required goods and services, both directly to the proposed development, as well as to meet new demand created by economic growth spurred by the development. Include estimates of what percentage of goods and services might feasibly be provided by northern businesses, and discuss any plans, commitments or strategies the developer has for maximizing this percentage;
- how the development will contribute to opportunities to diversify the economic base at the local, regional and territorial level. New local and regional economic development associated with the development, including the production and supply of new goods and services, must be included in this assessment;
- potential other economic uses of the area that may be affected by the proposed development, including an assessment of opportunity costs;
- a list of estimates of all predicted economic impacts, both beneficial and adverse, stemming from the development, including but not limited to impacts caused by:
 - increased government revenues at the local, territorial and national levels (include at minimum an estimate of total expected direct and indirect taxes to be paid to each level of government as a result of Gahcho Kué activities;
 - increased employment numbers, including a prediction of employment multipliers, and the development's estimated effects on employment levels in potentially-affected communities;
 - predicted increases in local income and disposable income levels (identify income multipliers where possible);
 - potential impacts the development will have on local and regional inflationary pressure and the cost of living; and
 - possible effect of the development on other types of economic activity occurring in the potentially affected communities, with emphasis on the traditional economy; and
- for each of the items listed above, how the economic effects identified will be distributed among potentially affected communities versus other areas.

Similar to section 4.1.5 the EIS must outline how the developer might facilitate a cooperative approach to social, cultural, and economic issues, including an overview of how similar issues have been address in other developments. While formal agreements between developers and communities and governments have become a common vehicle for addressing social, cultural, and economic impacts, their existence cannot be considered as mitigation unless their contents can be provided to the Panel.

Similar to the requirements of section 4.1.4 on long term bio-physical effects, the EIS must include at least an outline or overview of proposed follow up programs to verify the impact predictions and to monitor the effectiveness of any mitigation measures. Also similar to section 4.1.4 this must include an evaluation of possible joint monitoring of cumulative effects.

5 Subjects of Note

5.1 *Introduction to Subjects of Note*

Subjects of Note require a thorough analysis including a cumulative effects assessment, but do not require the same level of detail as Key Lines of Inquiry. The Review Board's *Report of Environmental Assessment* defined eighteen Subjects of Note based on the input from parties and the public during the scoping exercise. The description of each Subject of Note is based on the results of the scoping session and does not represent a determination by the Panel.

Of the eighteen Subjects of Note, eleven deal mostly with biophysical issues, while seven deal with socio-economic issues.

Biophysical Subjects of Note are:

- impacts on Great Slave Lake;
- air quality;
- carnivore mortality
- species at risk and birds;
- permafrost, groundwater, and hydrogeology;
- waste rock and processed kimberlite;
- climate change impacts;
- alternative energy sources;
- other ungulates;
- waste management and wildlife;
- traffic and road issues; and
- vegetation

Socio-economic Subjects of Note are:

- employment, training, and economic development;
- impacts on tourism potential and wilderness character;
- demands on infrastructure;
- culture, heritage and archaeology;
- Aboriginal rights and community engagement; and
- the proposed National Park.

5.2 *Biophysical Subjects of Note*

5.2.1 *Impacts on Great Slave Lake*

The Review Board's *Report of Environmental Assessment* identified impacts on Great Slave Lake as a separate Subject of Note. Under the 'downstream water effects' Key Line of Inquiry the EIS must already address the question of how far downstream any

effects from water flow fluctuation and contamination are likely to reach. Therefore, a summary of the analysis for Great Slave lake suffices here.

5.2.2 Air Quality

During the environmental assessment, concerns over air quality were based, in part, on Gahcho Kué being the fifth diamond mine in the general area contributing to air pollution. The EIS consequently must address the issue of emissions from Gahcho Kué adding to pre-existing emissions.

In particular the EIS must provide air quality modeling for construction and operational phases including worst case scenarios. The air quality assessment must include an assessment of risk to human health, including worker camps. The EIS must further identify best available technologies and best management practices to be used. (Other sections dealing with impacts related to dust include 4.1.1, 4.1.2, and 5.2.12).

The geographical scope for this Subject of Note must include the area of any potentially affected airsheds.

The EIS must provide a comprehensive analysis of air quality issues, including an evaluation of the following items:

- diesel powered equipment and power generation, and the related transportation of fuel;
- dust generated by traffic, use of explosives, the exposed lake bottom and other exposed surfaces including the processed kimberlite;
- release of persistent organic pollutants and metals from waste incineration, including a description how compliance with Canada wide standards for dioxins, furans, and mercury will be achieved; and
- release of various pollutants including NO_x, SO₂, CO, with air quality predictions based on an air quality model comparing predicted ambient pollutant concentrations with applicable ambient air quality and deposition standards.

In addition to providing predictions and a significance evaluation for impacts on air quality, the EIS must provide an analysis of how air quality changes, particularly pollutants with bioaccumulation potential, will affect vegetation, wildlife, and fish. This analysis must be factored into the impact analysis for fish and wildlife issues.

5.2.3 Carnivore Mortality

The potential increased mortality of carnivores, including grizzly bear, wolverine, and wolf, was an important issue in previous assessments of diamond mines, including DeBeers' Snap Lake project. The EIS must evaluate the experiences with carnivore mortality and related mitigation measures at the existing and developing diamond mines, including Ekati, Diavik and Snap Lake. In addition to an evaluation of the mitigation measures prescribed in earlier assessments, as well as any adaptive management activities, the EIS must provide improvements over the methods applied at existing

developments. The EIS must address any differences in impact predictions resulting from the proposed development's proximity to the tree line.

The geographical scope for this Subject of Note includes the development area and all related access routes. In the cumulative context for species with larger ranges, this must include evaluations of the impacts in consideration of the full range used by each species.

Specific information needs identified include:

- potential attraction to wolves, foxes, bear, and wolverines to attractants such as garbage, the creation of habitat in the camp, waste rock storage, etc;
- development components that may cause a sensory disturbance to wolves, foxes, bear, and wolverines;
- effects on movement and hunting success from linear development components, such as the ice road;
- increased carnivore mortality resulting from creating access into a previously largely inaccessible area;
- impacts on prey species such as small mammals;
- effective habitat loss; and
- measures that may be taken to avoid or reduce these impacts.

5.2.4 Species at Risk and Birds

The proposed development is closer to the tree line than existing diamond mines and different species may be involved. The geographical scope for this Subject of Note includes the development area, all access routes and downstream areas.

The analysis provided in the EIS must be of sufficient detail to allow the Panel, as well as relevant other parties, to discharge its responsibilities under the *Species At Risk Act*, which includes:

- determining whether the proposed development is likely to affect a listed species or its critical habitat;
- identifying the adverse effects on the species and its critical habitat;
- ensuring that measures are taken to avoid or lessen those effects, consistent with any applicable recovery strategy and action plan; and
- monitoring the effects.

For the purpose of this environmental impact review, the term “species at risk” includes all species listed under any applicable schedule of the *Species At Risk Act*, as well as any species listed by the Committee on the Status of Endangered Wildlife in Canada. It also includes any species listed by the GNWT with designations “may be at risk”, “at risk” or “sensitive” in the *General Status Rankings for Species in the NWT*.

For birds the EIS must provide:

- all potential disturbances during nesting, rearing, molting, staging, and migration, (e.g. from construction activities, air traffic, and downstream effects of water flow changes);
- the potential for increased predation facilitated by the development;
- identification and quantification of all contaminant exposure routes and possible changes in contaminant levels, particularly in harvested species; and
- identification of all potential alterations to bird habitat, including loss of habitat within the mine footprint, the creation of new habitat, and any downstream effects of water flow changes, with particular emphasis on waterfowl.

5.2.5 Permafrost, Groundwater, and Hydrogeology

Limited baseline information creates uncertainty about any impacts on permafrost or ground water movements. The dewatering of the lake, the excavation of large pits, and the re-filling of these pits with waste rock, processed kimberlite, and contaminated mine water was noted to have great potential to disrupt or change permafrost distribution and ground water flow.

Although part of the information relevant to this Subject of Note is already covered in the water quality and fish Key Line of Inquiry, the EIS must provide a comprehensive analysis for this Subject of Note. In particular, the EIS must provide a detailed analysis of the feasibility of sequestering contaminants in the mined out pits over the long term.

The EIS must include a discussion of the potential impacts for accumulation of permafrost into on-site infrastructure and proposed mitigative strategies.

5.2.6 Waste Rock and Processed Kimberlite Storage

While closely connected to other Subjects of Note, such as ‘permafrost, groundwater, hydrology’ or Key Lines of Inquiry (e.g. ‘water quality and fish in Kennady Lake’), the storage of waste rock and processed kimberlite in the mined out pits and in on-land facilities must be treated as a subject in its own right.

During the environmental assessment various parties expressed considerable concern over the feasibility of storing processed kimberlite and/or waste rock in the mined out pits without creating a long term contamination source for Kennady Lake. Although parties generally acknowledged that backfilling pits is preferable to large waste rock piles, they considered this technology as unproven. The EIS must, therefore, provide a detailed description and analysis of how any water contamination will be avoided over the long term, i.e. many decades or even centuries after mine closure. This will include descriptions of interactions between the waste rock and PK and all sources of water, including groundwater, surface water, and permafrost (including taliks).

The EIS must clearly describe the planned long-term maintenance of the waste rock and processed kimberlite under frozen conditions. This description must include different

scenarios, including scenarios occurring decades and centuries into the future and a consideration of the impact of climate change.

The height of the waste rock pile also caused some caribou-related concerns. The EIS must provide a review of available information on the effects of such structures on caribou behaviour. In addition, the EIS must provide a detailed discussion of alternative designs and their potential impacts. Experiences at any of the existing diamond mines in the NWT would be particularly helpful.

5.2.7 Climate Change Impacts

The scientific consensus is that the North is particularly vulnerable to impacts from a changing climate. The EIS must examine and evaluate the development as a potential greenhouse gas contributor. It must also examine potential climate change effects on the proposed development. The EIS must examine quantity of greenhouse gas emissions, the use of alternative energies (as per section 5.2.8), energy conservation initiatives, and linkages between greenhouse gas prevention and other environmental opportunities.

The analysis must include:

- quantity of emissions (in absolute terms, as proportion of NWT industrial emissions, and as proportion of NWT total emissions);
- project alternatives, including greenhouse gases offsetting options and technology innovations (including descriptions of alternative energy initiatives on site); and
- linkages between greenhouse gas prevention and other environmental opportunities (e.g. air and water pollution reduction, sustainable development).

The EIS must include climate change scenarios and their impacts on the development, as well as climate variability and its impacts (e.g. on the operation of the ice road). This analysis must include the effect of changing extremes, such as 100 year rainfall events. The EIS must also include an evaluation of the potential for the development to create a local change in climate at the mine site. In addition the EIS must address climate change impacts in combination with development related impacts on any of the valued components. The EIS must outline any specific adaptations of the development to climate change, as well as management options for a variety of future climate change effect scenarios. The Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment's *Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners*⁷ may be used for further guidance on climate change issue.

⁷Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment, 2003. "Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners". Available from the Canadian Environmental Assessment Agency website www.ceaa-acee.gc.ca/012/newguidance_e.htm.

The development as proposed relies heavily on the Tibbitt to Contwoyto ice road. The ice road and the traffic on it contribute to greenhouse gas emissions and are vulnerable to climate change at the same time. The EIS must provide a detailed analysis of alternatives to transporting goods via road to the development site. See also section 3.2.6.

The EIS must provide a detailed account of energy conservation initiatives on site, addressing subjects such as vehicle idling policies, use of waste oil for heating, etc. Describe how this compares to energy conservation plans at other diamond mines (eg. the Ekati Energy Smart Program).

5.2.8 Alternative Energy Sources

This development would be the fifth diamond mine in the region generating its power from diesel generators, resulting in air quality issues, transportation issues, climate change issues, renewable resource use issues and others. Most of these issues can have a direct or indirect impact on caribou, water and fish which are Key Lines of Inquiry for this EIR.

As already outlined in section 3.2.6, the EIS must provide a thorough analysis of alternative means of carrying out the development. This is especially true for energy sources. In addition to discussion the feasibility of alternatives and how they could be incorporated into the development, the EIS must compare the environmental impacts of transporting and burning diesel fuel to the environmental impacts of renewable energy sources (e.g. hydro power or wind power). The EIS must also provide details regarding any relevant current negotiations and commitments relating to alternative energy sources.

5.2.9 Other Ungulates

The proposed development is closer to the tree line than previous diamond mines in the NWT. There may therefore be different species present, resulting in ungulates other than caribou being affected to a larger extent than was the case with previous diamond mines in the NWT.

Specific information requirements include:

- frequency of muskoxen and moose utilizing the development area and including pertinent information such as time of the year, abundance, and other developments that may impact on the same muskoxen population;
- development components that may cause a sensory disturbance to muskoxen or moose as well as possible sources of contamination and on site hazards;
- potential changes to the predator-prey relationship of any potentially affected ungulate population and predicted long term effects on the population;
- any measures may be taken to avoid or reduce these impacts; and
- potential development-related changes to harvest levels for each potentially affected ungulate population, e.g. by creating an access via the Mackay Lake road into an area previously inaccessible to vehicular traffic.

5.2.10 Waste Management and Wildlife

During the environmental assessment impacts related to waste management and wildlife were recorded in this category. Waste management in this section refers to the management of sewage, camp waste, automotive fluids, and other wastes generated during construction and operation, rather than the management and disposal of waste rock, processed kimberlite, or contaminated ground water. This relates to other Key Lines of Inquiry and Subjects of Note. For example, waste may attract carnivores leading to increased conflicts and mortality.

The EIS must provide a plan of waste management during construction, operation, and closure including:

- camp sewage;
- camp refuse;
- automotive fluids or other hydrocarbons at mine site and on the access route from Yellowknife, including handling of hydrocarbon contaminated soil;
- scrap metal and other discarded machinery or parts;
- discarded construction material;
- any hazardous materials; and
- any other waste generated.

The EIS must include a discussion of alternatives to the proposed waste management plan that have been considered and any adaptive management options. The waste management plan must take into consideration experiences of the existing diamond mines (Ekati, Diavik, Snap Lake) as well as the capacity of the receiving environment (e.g. for sewage disposal).

The proposed waste management, as described in the land use permit application, relies heavily on Yellowknife facilities. The EIS must show that Yellowknife is capable and willing to accept the materials, particularly hazardous material.

5.2.11 Traffic and Road Issues

Traffic and other road related concerns were raised multiple times during environmental assessment scoping, and must be addressed specifically, even though aspects of this subject relate to other Key Lines of Inquiry and Subjects of Note. Most but not all items in this section relate to assessing biophysical impacts.

The geographical scope of this Subject of Note includes all access routes, including all waterbodies and land crossings used for the Tibbitt to Contwoyto Road and the Mackay Lake access road (or any alternative or additional routes) and adjacent areas.

The EIS must describe:

- any efforts by the developer, other developers, or governments to monitor the environmental effects of the Tibbitt to Contwoyto winter road;

- the results of these efforts and any plans for future monitoring;
- how changes in traffic volume and pattern may affect the environment, including caribou, erosion and sedimentation around portages, vegetation, waterbodies, fish, spills, and water withdrawal;
- how construction and operation of the spur road may affect the environment including caribou, erosion/sedimentation around portages, vegetation and benthic environment, spills, and water withdrawal;
- the potential of the spur road to open a previously inaccessible area to hunters or recreational snowmobilers (any data collected during the advanced exploration stage on this issue should be presented);
- how the proposed development will alter traffic volumes and patterns on the Tibbitt to Contwoyto winter road and Ingraham Trail, including potential hazards to other road users and the transport of dangerous goods;
- increases in air traffic, including the estimated number of flights during construction, operation and closure, broken down by season and type of aircraft (ie. jet, large propeller, small airplane and helicopter). This should be estimated based on experience with previous diamond mine developments, taking into consideration 'normal' winter road seasons, such as the 2006/07 season, as well as exceptional seasons such as the 2005/06 season that resulted in a significant increase in air traffic, and potential interactions with caribou (e.g. during spring migration); and
- any potential effects related to the use of glycol on the airstrip.

5.2.12 Vegetation

The EIS must include an assessment of the probability of introducing any foreign, parasitic, or invasive species, as well as management options in the case of such an introduction. Similar to water and air quality (4.1.2 and 5.1.2) the EIS must also address the potential of dust (from the lake bed, or any other exposed surface including roads) to adversely affect vegetation by changing snow melt and plant phenology, or by any other means. Any indirect effects of dust on wildlife must also be described.

5.3 Socio-Economic Subjects of Note

5.3.1 Employment, Training and Economic Development

The EIS must provide an analysis of training and education needs for mine employment and mine worker advancement. In addition the EIS must provide an analysis of how the proposed development might affect training and education in the potentially affected communities in general. For example, increased training and education programs for mine employees but not others might increase the social disparity issues discussed in section 4.1.6. Moreover, training and education can contribute to providing opportunities

unrelated to the proposed development that may address some of the lost opportunities issues identified in section 4.1.7.

The EIS must assess the current capacity of training programs and of Aboriginal and northern people to engage in these training programs. The developer is encouraged to present its views on how the development can address the issue in conjunction with existing or possible future government programs.

The EIS must describe the following:

- all employment requirements by skills category over the life of the project;
- which employees will be direct versus contractor employees, and describe whether and how the developer will require its contractors to have similar commitments to maximizing regional and Aboriginal employment;
- where the likely labour pool “draw” is going to be from for this development. This must include an assessment of the available labour pool, at varying geographic scales, to meet the direct mine labour requirements, including: individual communities and the Akaitho and Tlicho regions as a whole, territorial, and beyond the NWT;
- any identified barriers to employment, advancement and retention for Northern workers (with particular emphasis on residents of smaller potentially affected communities and Aboriginal people), including minimum skill requirements, hiring policies related to criminal records or substance addictions, availability of willing employees, and lack of training opportunities for community members;
- the requirements for any training, education, and other improvements necessary to maximize employment of residents of potentially affected communities in the workforce of the mine, and compare these requirements to existing training initiatives available in the NWT;
- requirements for any training, education or other improvements necessary to maximize engagement of businesses of each potentially-affected community in the economic benefits accruable from the development; and
- the developer’s strategies, plans or commitments with respect to maximizing the proportion of direct mine employees that are NWT residents, Aboriginal persons, and residents of potentially affected communities (e.g. through hiring policies, training initiatives).

5.3.2 Impacts on Tourism Potential and Wilderness Character

Tourism is another viable economic option for some Aboriginal communities. Tourism in the NWT depends heavily on the wilderness character of the land. Increasing mine development and mineral exploration threatens that wilderness character. Industry related air traffic, for example, greatly diminishes the wilderness experience visitors are willing to pay for.⁸ Wilderness also has an intrinsic value to many Canadians.

⁸ In addition to the scoping sessions for the Gahcho Kué project, this topic was also raised as an important issue by the same communities in a subsequent environmental assessment of a mineral exploration program (EA0607-003).

This Subject of Note is related to the ‘long term social cultural, economic impacts’ Key Line of Inquiry. The EIS must provide a summary of any analysis relevant to this subject done under that key line. The EIS must also address any potential for the proposed development to create opportunities not directly related to the proposed development. Specific information needs identified during scoping include:

- impacts from air traffic;
- loss of wilderness character (see also cumulative impacts); and
- decreased hunting success (or fewer wildlife sightings for eco-tourists) reducing attractiveness.

5.3.3 Demand on Infrastructure

Increased development inevitably increases demands on physical and social infrastructure, including physical infrastructure and social services. Infrastructure such as schools, roads, and hospitals undergo increased pressure with the addition of major developments. The concern is especially acute as this development may be going ahead in parallel with other major developments, which by themselves are expected to increase pressures on existing physical and human infrastructure. Moreover, competition for skilled labour will make it more difficult and expensive for government to maintain infrastructure.

In light of the multiple infrastructure demands, the following specific issues identified in the scoping sessions must be addressed:

- infrastructure pressures on regional centres from in migration;
- shortage of locally available labour for community services;
- costs for government to provide services increases and maintain adequate physical infrastructure;
- monitoring and regulatory capacity of government;
- over-extension of human and economic resources by local communities through project and its review process; and
- rotational schedule resulting in absence of critical volunteers, e.g. volunteer fire fighters.

The developer must include an assessment of the socio-economic costs and who will bear them of any increases in physical and social service infrastructure predicted to be required as a result of pressures or requirements of the development (this must include discussion of likely in- and out-migration scenarios to which the development will contribute);

The developer is encouraged, although not required, to identify innovative solutions to infrastructure and capacity issues that may be outside the developer’s purview in a similar fashion to the cooperative approaches described in section 4.1.5.

The developer must describe lessons learned from economic, cultural and social impacts of previous mine developments in the NWT and the North, and how they have been incorporated into the impact identification, prediction and mitigation for the development. For each of the above impacts, the developer must describe any plans, strategies or commitments designed to mitigate the identified adverse impacts.

5.3.4 Culture, Heritage and Archaeology

There is concern over possible impacts on cultural, heritage and archaeological sites in the Lockhart River system, including the original Lutsel K'e settlement at Artillery Lake. Increased participation in the wage economy may also weaken traditional activities, reduce cultural cohesion and adversely affect the existing cultural landscape.

The EIS must provide a comprehensive analysis of these issues, taking into consideration that they are closely related to several Key Lines of Inquiry, e.g. caribou and increasing social disparity. The developer must engage communities and document their cultural, heritage and archaeological information for the area within the geographic scope of this review.

Specific issues, or potential impacts to be evaluated, include:

- reduced involvement in communal activities including communal hunts;
- potential for growing sense of disempowerment;
- increasing out migration and skills drain to regional centres;
- reduced harvesting success and loss of traditional skills;
- loss of language;
- loss of spiritual connections and knowledge;
- physical impact on heritage and archaeological sites;
- loss of spiritual value of place;
- lost of aesthetic value of place;
- hunting restrictions around mine sites;
- effects on Lockhart River sacred site;
- Artillery Lake as the original site of Lutsel K'e; and
- Our Lady of the Falls

The proposed development may not be solely responsible for issues such as language loss, but the developer is called upon to explore innovative solutions in cooperation with affected communities and relevant government agencies.

5.3.5 Aboriginal Rights and Community Engagement

During the environmental assessment, potential impacts were linked to possible infringements on Aboriginal rights. While the responsibility for consultation on aboriginal rights rests with the government, procedural aspects of this consultation may be satisfied by environmental impact review proceedings. For this reason, the EIS must provide a record of community engagement including which concerns or issues were raised and how they would be accommodated through project design or other mechanisms (as described in section 4.1.6).

5.3.6 Proposed National Park

The proposed development is upstream of a proposed national park around the East Arm of Great Slave Lake. A memorandum of understanding between the Lutsel K'e Dene First Nation and Parks Canada indicates that the proposed development would be in close proximity to Parks Canada's preliminary area of interest for the park.

The EIS must provide maps showing the exact location of the proposed development in relation to the national park preliminary area of interest. Moreover, the EIS must provide an evaluation of any potential impacts from the development on the proposed national park. This evaluation must include activities indirectly caused by the proposed development such as activities following increased access into the area.

6 Sustainability and Cumulative Effects Analysis

6.1.1 Integrated Project-Specific Analysis and Sustainability

The EIS must evaluate the development's overall impact on the environment. This includes the combined impact of any part of this development with any other parts of the development. These impacts may be additive or synergetic combinations of effects that arise from individual development parts of this proposed development. By themselves, the impacts of each part may not be considered significant, but taken as a whole they might be.

This integrated analysis will be guided by the MVRMA's requirement to have regard to the protection of the social, cultural and economic well-being of residents and communities in the Mackenzie Valley, the importance of conservation to the well-being and way of life of the Aboriginal peoples of Canada and the capacity of renewable resources to meet future needs.

The proposed development's contribution to sustainability and effects on future generations must be evaluated on the basis of:

- the extent to which it makes a positive overall contribution towards environmental, social, cultural and economic sustainability;
- how the planning and design take into account its effects on achieving sustainable development;
- to what degree it promotes the present generation's ability to meet its needs without compromising the ability of future generations to do so;
- how monitoring, management and reporting systems have incorporated indicators of sustainability; and
- the views of stakeholders and participants in the environmental impact review process.

6.1.2 Cumulative Effects Assessment

Concern over possible cumulative effects arose frequently during the environmental assessment and the fact that the proposed development would be the fifth diamond mine in the general area was cited numerous times as a rationale behind an issue or its priority. Consequently, cumulative impacts must be an important consideration in this EIR. In its *Report of Environmental Assessment* the Review Board chose not to formulate a separate cumulative effects Key Line of Inquiry.

Many Key Lines of Inquiry and Subjects of Note contain important cumulative effects components. In addition to providing a detailed assessment in the response to each of these, a stand-alone assessment of the cumulative effects of the proposed development in combination with past, present and reasonably foreseeable future developments is required.

The EIS must contain a cumulative effects assessment, providing sufficient information to allow the Panel and parties to evaluate the significance of the proposed development's

overall cumulative impact on the environment, without having to refer to other sections extensively. As a minimum, this section in the EIS must provide summaries of the analysis and results for any cumulative effects assessment done and presented under any individual Key Lines of Inquiry or Subjects of Note.

The exact methods for assessing cumulative effects are left to the developer, provided that the method chosen is suitable to incorporate all different types of effects that could contribute to the cumulative impact on a given valued component. The cumulative effects assessment must follow the guidance of the Review Board's *Environmental Impact Assessment Guidelines*. Appendix H of the *Guidelines* refers specifically to cumulative effects assessment.

7 Remaining Issues

This section contains instructions to the developer for analyzing all individual issues identified in the scoping exercise of the environmental assessment. These technical scoping workshops were organized along four themes for the bio-physical environment, including:

- wildlife;
- water;
- fish and other aquatic organisms; and
- ‘other’.

The technical scoping workshop also addressed the human environment with two themes:

- community wellness; and
- regional / territorial socio-economic issues.

This section includes all of the issues and any specific information requirements identified during scoping, organized by the themes of the environmental assessment scoping workshop. These issues, listed in the following tables 1 through 7, are intended to be comprehensive, and include those issues emphasized in the previous sections.

For each issue listed, the developer is required to reconcile whether it was assessed in a Key Line of Inquiry or Subject of Note. If so, the developer must provide a reference accordingly. If not, the developer must provide sufficient analysis to demonstrate whether it is likely to cause significant impacts. Any issues that are not relevant to a Key Line of Inquiry or a Subject of Note do not require in-depth analysis beyond showing that significant impacts can be prevented with standard mitigation or regulatory conditions.

Table 7-1: Wildlife Issues

<p><i>Caribou</i></p> <ul style="list-style-type: none"> • exposure to contaminants • impacts to already vulnerable populations • effects on reproduction • cumulative impacts to population • impacts on caribou behaviour • impacts of hazards on site • impacts on migration • effects of tall waste pile on caribou and their predators
<p><i>Carnivores</i></p> <ul style="list-style-type: none"> • carnivore attraction • human/bear encounters • increased carnivore mortality • noise/sensory impacts • key habitat loss in eskers • loss of prey sources for grizzly bears
<p><i>Birds</i></p> <ul style="list-style-type: none"> • Disturbance • exposure to contaminants • habitat impacts
<p><i>Changing Water Levels</i></p> <ul style="list-style-type: none"> • drawdown impacts on habitat • downstream impacts • wildlife impacts from freeze- and breakup timing changes
<p><i>Other Ungulates</i></p> <ul style="list-style-type: none"> • impacts on muskoxen distribution • impacts on moose • sensory disturbance to muskoxen
<p><i>Traffic & Road Concerns</i></p> <ul style="list-style-type: none"> • impacts from traffic on winter roads • new access from spur road • aircraft traffic disturbance
<p><i>Species at Risk</i></p>
<p><i>General</i></p> <ul style="list-style-type: none"> • waste management impacts • impacts on small mammals

Table 7-2: Fish Issues

<p><i>Watershed Impacts</i></p> <ul style="list-style-type: none"> • fish health • fish behaviour (increase and decrease in flow) • migration interruption • water chemistry alterations from deep ground water • chemistry changes in sediment and water • impacts of backfilling on aquatic biota • fluctuation of water flows
<p><i>Road Effects</i></p> <ul style="list-style-type: none"> • ice road construction • Erosion • water withdrawal • increased ice thickness • watercourse crossings • Spills
<p><i>Operations and Construction</i></p> <ul style="list-style-type: none"> • fish out • contaminant levels • freshwater Lake impacts • habitat destruction and creation • noise and vibration on fish behaviour
<p><i>Data Collection</i></p> <ul style="list-style-type: none"> • baseline data • Monitoring
<ul style="list-style-type: none"> • <i>Long Term Effects</i> • feasibility of recovery • physical changes to lake • addition of deep water habitat post-mine and impacts on the rest of the lake
<ul style="list-style-type: none"> • <i>Reclamation Methods</i> • alternative water sources • habitat creation • restocking of fish

Table 7-3: Water Issues

<p><i>Water Rights</i></p> <ul style="list-style-type: none"> • impacts on Dene water rights and spiritual concerns • impacts on navigability of downstream waters • interference with existing water users
<p><i>Permafrost</i></p> <ul style="list-style-type: none"> • effects of permafrost freezeback on exposed lake bed • adequacy of permafrost monitoring and data to appropriately model mine components • problems with freezeback of processed kimberlite • implications of climate change on reclaimed mine components
<p><i>Groundwater/Hydrogeology</i></p> <ul style="list-style-type: none"> • impacts of pits on movement and quality of groundwater • interaction between groundwater and submerged waste • relationships between taliks and groundwater flow regime • short term and longterm impacts on groundwater flow • management of groundwater flows by DeBeers
<p><i>Public Concern</i></p> <ul style="list-style-type: none"> • implications of water quality on human health • public notification of flooding events
<p><i>Water Quality</i></p> <ul style="list-style-type: none"> • end of pipe contamination • pits as long term contamination sources • geochemistry of waste rock and process kimberlite • turbidity during dewatering and rewatering lake • contamination runoff from PKC and waste rock • dust as water contamination • hydrocarbon contamination • length and adequacy of long-term water quality monitoring
<p><i>Surface Water and Watershed</i></p> <ul style="list-style-type: none"> • downstream effects of large water releases • reduced water flows as lake level is restored • ice quality on Kennady Lake and surrounding lakes • cumulative effects on Hoarfrost and Lockhart rivers and Great Slave Lake • extent of downstream effects
<p><i>Water Use and Management</i></p> <ul style="list-style-type: none"> • water diversion effects • alterations to natural drainage

Table 7-4: Other Issues

<i>Climate Change</i> <ul style="list-style-type: none">• impact on project design• transportation alternatives• energy alternatives• creation of microclimate at mine site
<i>Physical Stability</i> <ul style="list-style-type: none">• waste rock and PKC co-disposal• impacts from changing permafrost
<i>Geochemistry</i> <ul style="list-style-type: none">• impacts from acid-generating rock• composition of lake bed sediments
<i>Air Quality</i> <ul style="list-style-type: none">• increased dust from exposed lake bed• waste incineration impacts• impacts from emissions
<i>Vegetation</i> <ul style="list-style-type: none">• increase in invasive species• impacts from increased dust on vegetation• stress to rare plant populations
<i>Emergency Measures</i> <ul style="list-style-type: none">• impact of spills• accidents and malfunctions

Table 7-5: Community Wellness Issues

<p><i>Employment</i></p> <ul style="list-style-type: none"> • hiring policy and practices – recruitment and retention • cultural difference in workplace affecting job satisfaction • lack of opportunity for advancement • increased need for child care • gender inequities • ability to meet northern/Aboriginal hiring targets
<p><i>Education</i></p> <ul style="list-style-type: none"> • incentives and disincentives to further education • need for increased educational programming to prepare for mine employment • lack of functional literacy
<p><i>Training</i></p> <ul style="list-style-type: none"> • lack of diversity & adequacy of training opportunities • inability to meet educational requirements to access training • limited training available in outlying communities
<p><i>Income and Expenses</i></p> <ul style="list-style-type: none"> • unhealthy lifestyle choices • money management issues (e.g. impacts from poor budgeting skills) • increasing income disparities (haves/have nots) • increased cost of living • availability, adequacy and affordability of housing
<p><i>Cultural/Population Health</i></p> <ul style="list-style-type: none"> • loss of language • reduced harvesting success • loss of traditional skills • decreased transfer of knowledge between generations • loss of spiritual connections and knowledge • physical impacts to health • loss of family cohesion related to rotational work schedules
<p><i>Community Capacity</i></p> <ul style="list-style-type: none"> • reduced involvement in communal activities • lack of control over pace of development • potential for growing sense of disempowerment • increasing out-migration/skills drain to larger centres • infrastructure pressures of increasing in-migration to regional centres • shortage of locally available labour force for community services • lack of capacity to engage in monitoring & enforcement

Table 7-6: Regional/Territorial Socio-Economic Issues

<p><i>Heritage Resources</i></p> <ul style="list-style-type: none"> • physical disturbances to heritage sites • loss of spiritual value of place • loss of aesthetic value of place • loss of alternative uses of land
<p><i>Labour Force</i></p> <ul style="list-style-type: none"> • problems with employee retention • lack of adequate Northern labour pool to staff mine • wage benefit drain from North
<p><i>Government Capacity</i></p> <ul style="list-style-type: none"> • increasing costs and pressures on existing physical infrastructure • increased costs and pressures on existing social services • lack of adequate skills training programs for Northerners • increasing costs and pressures on regulation and monitoring activities
<p><i>Regional Disparities</i></p> <ul style="list-style-type: none"> • widening income disparities between communities and regions • competition for access to benefits between communities • determination of "affected communities"
<p><i>Northern Business</i></p> <ul style="list-style-type: none"> • distribution of spin off effects - flows from North • inflated wages/material costs - effects on local/regional businesses • secondary business development opportunities for Northern firms
<p><i>Sustainable Economy</i></p> <ul style="list-style-type: none"> • over-reliance on one resource economy • impacts on alternative business opportunities/economic diversification

8 Deliverables

The developer is expected to submit the EIS to the Panel office for a conformity analysis. Once in conformity Panel staff will provide direction to the developer for distribution of materials to parties. The EIS submission to the Panel should include:

- 10 copies of the EIS in hardcopy (although once the EIS is determined to be in conformity with these *Terms of Reference*, copies will be required for all parties);
- the EIS in digital format with individual files not to exceed 5 MB in size and ideally with individual files being less than 3 MB in size (using only low-resolution images);
- a concordance table that clearly cross-references the *Terms of Reference* with the impact statement as part of the EIS;
- a commitments table listing all mitigation measures the developer commits to employ as part of the EIS;
- associated maps (not including engineering drawings) as shape files in accordance with GNWT spatial data warehouse specifications;
- a non-technical summary of the EIS in English, Tlicho, Chipewyan, and French; and
- any supporting materials such as videos or animations that might enhance the understanding of the Panel and the parties.

While preparing the EIS, the developer is encouraged to continue consulting with all parties to the EIR. The developer is also encouraged to contact the Panel office when the developer is unclear about any of the requirements of this *Terms of Reference* document, and to seek clarification in writing.

APPENDIX 1.II
CONFORMANCE TABLES

Table 1.II-1 Conformance Table Pertaining to Section 1 to Section 6 of the EIS

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
1.3 Approach	Every issue identified in this Terms of Reference requires a sufficient analysis to demonstrate whether it is likely to be the cause of significant impacts. However, some issues have been identified in the Review Board's Report of Environmental Assessment as issues that require particular attention during the environmental impact review. These special issues are categorized as either Key Lines of Inquiry or Subjects of Note.	6.2
2.1 Scope of Development	The scope of the development under review includes the principal development, which is an open pit diamond mine and any activities or structures associated with the principal development, from pre-construction to closure and reclamation.	1.3 , 3.2.1
	The Development scope is based on the Application Report ³ to the Mackenzie Valley Land and Water Board. Alternatives and any other changes to the proposed development must be included.	Section 2, Section 3
2.2.1 MVRMA Scoping Requirements	The scope of this environmental impact review includes all potential impacts on the biophysical and the human environment from the development, by itself and in combination with other past, present and reasonably foreseeable future developments.	6.6
	The temporal scope of the review ranges from pre-construction activities to construction, operation, closure, and post closure until reclamation is achieved.	6.4.2
2.2.2 Report of Environmental Assessment Scoping Requirements	The Panel accepts the prioritization of issues prepared by the Review Board and requires the environmental impact statement to emphasize, and provide more detailed information for, Key Lines of Inquiry and Subjects of Note, as outlined in section 1.3, section 4 and section 5.	6.2
	Geographic scope of study must be appropriate for the potential impact being assessed. The geographic scope is defined for each topic in sections 4 and 5.	6.4.1
3.1.1 Developer	The ownership of the proposed development and its organizational structure, including the division of responsibilities between the partners to the Gahcho Kué Project.	1.1.2, 1.1.3
	A summary of the environmental performance and policies (including socio-economic policies) of the developer, its partners, and parent companies.	1.1.5 , 1.1.6
	A description of the relationship between De Beers Canada and its contractors and subcontractors, including how the company will ensure that contractors and subcontractors will be responsible for upholding relevant commitments made by De Beers.	1.1.7
3.1.2 Development Description	General description of the development.	1.3
	Rationale for the need for the development.	1.2
	... the developer is required to provide a comprehensive development description as it is currently proposed. The EIS is intended to be a stand alone document. Sufficient detail must be provided for the Panel to adequately consider the potential impacts of the development and to adequately address the factors to be considered in the impact review	Section 3
	The development must also include a description of all regulatory permits, licenses and other authorizations required to carry out the development.	1.4
3.1.3 Existing Environment	The physical location of the proposed development (with maps), including ecozones(s) and ecoregions(s).	1.3.1, 1.3.2

Table 1.II-1 Conformance Table Pertaining to Section 1 to Section 6 of the EIS (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.2.1 Impact Predictions	Methods used to describe the environmental conditions and to identify and measure impacts on the environment should be consistent with high standards and best practice in the relevant subject area. Predictions should be presented in a way that facilitates the formulation of testable questions for future follow-up programs. Pathways of predicted impacts should be shown schematically and described in words. Methods used to predict how environmental changes could affect the development should also be explained.	Section 6
3.2.2 Significance Determination	The developer must provide its views on the significance of impacts, using the following criteria: ...(truncated for brevity) Direction Magnitude Likelihood Geographic Extent Duration Frequency Reversibility Ecological Context	6.7
3.2.3 Uncertainty Analysis	The environmental impact statement must provide a reasonably accurate description of the uncertainties associated with each prediction or analysis. Similarly, when making a significance determination the impact statement must report the confidence with which this determination can be made. The uncertainty analysis must include a description of the confidence in underlying assumptions, models, data sources, etc. The uncertainty analysis must also identify parameters that should receive particular attention when developing follow-up programs.	6.8
3.2.4 Valued Components	The developer must use the issues identified during the environmental assessment as the basis for the selection of any valued components. Note are interdisciplinary, and typically will involve more than one valued component. The developer may select additional valued components not identified in the Report of Environmental Assessment, but must ensure that all Key Lines of Inquiry and Subjects of Note are thoroughly reflected in the identification of related valued components. The EIS must provide a rationale for selecting valued components.	6.3

Table 1.II-1 Conformance Table Pertaining to Section 1 to Section 6 of the EIS (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.2.5 Traditional Knowledge	The environmental impact statement is required to:	
	• provide a summary of efforts made to collect relevant traditional knowledge;	5.2
	• explain how traditional knowledge influenced project design, impact predictions, and mitigation measures; and	5.2
	• provide a plan for future cooperation between the developer and traditional knowledge holders covering the full temporal scope of the proposed development.	5.5.5
	Traditional knowledge is expected to be particularly helpful in the holistic analysis but use of traditional knowledge must be reported in all relevant sections.	
	In addition to incorporating traditional knowledge in impact predictions and significance analysis for individual issues, Key Lines of Inquiry, and Subjects of Note, the EIS must contain a comprehensive, stand alone, section on traditional knowledge. This section must provide sufficient information to allow the Panel and parties, particularly those representing traditional knowledge holders, to evaluate acquisition and analysis of traditional knowledge by the developer.	
	The traditional knowledge summary report must address the following specific items:	
	• which communities and traditional knowledge holders participated in any traditional knowledge studies and how those participants were identified and agreed upon;	5.2
	• what approach was taken in working with traditional knowledge holders and in the collection and use of traditional knowledge, and why;	5.2.3
	• verify for each community whether there are policies and cultural practices for the acceptable standards for working with traditional knowledge holders and Terms of Reference for the Gahcho Kué Environmental Impact Statement handling the traditional knowledge. Where these do exist, verify how they were adhered to;	5.2.1
	• sources of traditional knowledge that have been used to date, including specific studies, archives, and individuals interviewed;	5.3, 5.4
	• when traditional knowledge is collected from existing studies and reports, provide verification that secondary sources are relevant and appropriate;	5.2.4.1.1
	• evidence that the traditional knowledge was collected and peer-reviewed with the Aboriginal community or traditional knowledge holders, and approved by the appropriate individuals or organizations; and	5.5
	• how traditional knowledge and traditional knowledge holders have influenced the developer's project design, impact assessment, and mitigation measures, as well as reclamation and closure planning.	5.5.5

Table 1.II-1 Conformance Table Pertaining to Section 1 to Section 6 of the EIS (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.2.5 Traditional Knowledge (continued)	The EIS must outline any plans for future cooperation between the developer and traditional knowledge holders (e.g. in monitoring and mitigation programs), and provide any commitments or agreements on which groups will participate in future studies.	
	Subject to confidentiality considerations the summary report on acquisition and analysis of traditional knowledge must include, or have regard to:	
	<ul style="list-style-type: none"> • who traditionally (individuals and communities) has used the area; • who currently uses the area; • what types of use are noted (historical and current); • cultural practices and sacred sites; • hunting, trapping and gathering; • social activities; • land use patterns; and • cultural significance (including spiritual significance) of the area. 	5.3, 5.4
	Where traditional knowledge and conventional science come to different impact predictions, the EIS must identify the different conclusions and outline how the developer proposes to deal with the disagreement (e.g. through adaptive management options).	5.4.1
3.2.6 Alternatives	Section 3.1 of these Terms of Reference requires the description of alternatives to the development and of alternative means of carrying out the development. The developer should use the development as described in the EIS as the baseline case for predicting Terms of Reference for the Gahcho Kué Environmental Impact Statement impacts and determining significance of alternatives. Development alternatives may be analyzed in terms of how they would alter these impacts, where separate impact predictions are not feasible.	2.2, 2.3
	The EIS must provide a reasonably detailed analysis of alternatives to individual development components or activities, including but not limited to:	
	<ul style="list-style-type: none"> • energy sources and energy conservation measures; 	2.1.2, 11.3

Table 1.II-1 Conformance Table Pertaining to Section 1 to Section 6 of the EIS (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.2.6 Alternatives (continued)	<ul style="list-style-type: none"> disposal methods (e.g. alternatives to back filling of pits, alternative designs for the waste rock pile, alternatives to the use of two on-land processed kimberlite containment facilities); 	2.3.3
	<ul style="list-style-type: none"> alternative transportation methods to reduce impacts along the ice road route; 	2.3.5
	<ul style="list-style-type: none"> alternatives to the conventional two week staff rotation; 	2.3.6
	<ul style="list-style-type: none"> alternative reclamation methods (e.g. alternatives for re-filling Kennady Lake); and 	2.3.2.3
	<ul style="list-style-type: none"> other alternatives that the developer considered or may be considering (e.g. different extraction rates to extend the life of the mine, underground mining options). 	2.3.1, 2.3.2
	When discussing alternatives the EIS must also provide an overview of how environmental conditions have influenced the project design.	2.4
	The EIS should not limit alternative means for carrying out the development to alternatives the developer currently considers feasible. The EIS must report all alternatives the developer considered and dismissed during the early project design, and must provide reasons for dismissal.	2.3
	In addition, when analyzing alternatives to the development, the developer needs to do a full accounting of potential opportunity costs to communities and governments associated with the development. This may require a calculation of "futures foregone" (i.e., what alternative future development options would be undermined or otherwise impacted if the proposed development goes ahead).	2.2.3
	Consideration of potential adverse impacts on ecotourism, outfitting, and the traditional harvesting economy must be included.	2.2.3
3.2.7 Follow-up Programs	<p>The term "monitoring" can be applied to several different activities. The developer must clearly distinguish which of the following meanings is meant with each use of the term "monitoring" in the EIS:</p> <ol style="list-style-type: none"> 1. compliance inspection (i.e. the activities, procedures and programs undertaken to confirm the implementation of approved design standards, mitigation, conditions of approval and company commitments); 2. environmental monitoring (i.e. monitoring to track conditions or issues during the development lifespan, and subsequent adaptation of project management); or, 3. follow-up (i.e. any programs to verify the accuracy of impact predictions and determine the effectiveness of mitigation measures). 	6.9

Table 1.II-1 Conformance Table Pertaining to Section 1 to Section 6 of the EIS (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.2.8 Presentation and Cross Referencing	The EIS must include a guide that clearly cross-references the Terms of Reference with the impact statement. Where any information required by the Terms of Reference cannot be provided, the EIS shall include the reason for the omission. The environmental impact statement must include an index that will allow parties to quickly find relevant sections of Terms of Reference for the Gahcho Kué Environmental Impact Statement the document.	Appendix 1.II Conformity Table
	All mitigation measures proposed by the developer must be summarized in a "Table of Commitments" for easy reference.	Appendix 1.VII Commitments Table
	Where possible, geographic information, or data, should be submitted in a format that allows the Panel and parties to conduct their own geographic information system (GIS) analysis. All GIS data must conform to the standards set by the GNWT's spatial data warehouse.	Provided under separate cover
	To facilitate public participation in this review, the EIS must contain plain language summaries in English, Chipewyan, Tlicho, and French.	Plain Language Summary
5.3.5 Aboriginal Rights and Community Engagement	While the responsibility for consultation on aboriginal rights rests with the government, procedural aspects of this consultation may be satisfied by environmental impact review proceedings. For this reason, the EIS must provide a record of community engagement including which concerns or issues were raised and how they would be accommodated through project design or other mechanisms (as described in section 4.1.6).	Section 4
6.1.2 Cumulative Effects Assessment	Many Key Lines of Inquiry and Subjects of Note contain important cumulative effects components. In addition to providing a detailed assessment in the response to each of these, a stand-alone assessment of the cumulative effects of the proposed development in combination with past, present and reasonably foreseeable future developments is required. The EIS must contain a cumulative effects assessment, providing sufficient information to allow the Panel and parties to evaluate the significance of the proposed development's Terms of Reference for the Gahcho Kué Environmental Impact Statement overall cumulative impact on the environment, without having to refer to other sections extensively. As a minimum, this section in the EIS must provide summaries of the analysis and results for any cumulative effects assessment done and presented under any individual Key Lines of Inquiry or Subjects of Note.	Section 13

Table 1.II-2 Terms of Reference Pertaining to Section 7

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
3.1.3 Existing Environment: Caribou	Describe each herd and subspecies present, and for each describe:	
	<ul style="list-style-type: none"> current population trends, including abundance, distribution, and demographic rates such as calf survival and adult mortality; 	7.1.3.2, 7.1.3.3, 7.3.2.1, 7.3.3.1, 7.3.3.2
	<ul style="list-style-type: none"> habitat requirements, including identifying areas of specific habitat use at different life stages (e.g., calving grounds, post calving, and summer ranges); 	7.1.3.2, 7.3.3.1, 7.3.3.2
	<ul style="list-style-type: none"> attributes of the seasonal habitats that relate to how caribou use them (e.g., insect relief, travel routes, forage); 	7.3.3.1, 7.3.3.2
	<ul style="list-style-type: none"> known population pressures, both natural and anthropogenic; and 	7.3.3.2, 7.3.3.3
	<ul style="list-style-type: none"> gaps in current knowledge of caribou such as assessing impacts from disturbance, harvesting, behaviour, or abundance. 	7.3.3.2, 7.3.3.3
	Describe migratory routes, patterns, and timings in relation to the proposed Project activities including typical patterns and the range of known variation.	7.3.3.2, 7.3.3.1
	Describe traditional harvesting activities in relation to caribou.	7.3.3.3, 7.3.3.4
	Describe traditional values in the context of respect for caribou and how people should behave towards caribou.	7.3.3.3, 7.3.3.4
	Describe any known issues currently affecting caribou in the development area (e.g., contamination of food sources, parasites, disease).	7.3.3.2, 7.5.3.2
3.1.3 Existing Environment: Noise	Describe the existing noise, and for each describe:	
	<ul style="list-style-type: none"> existing sources of noise in the project area; and 	7.3.3.2
	<ul style="list-style-type: none"> present noise in terms of frequency, duration, decibel levels throughout the year. 	7.5.3.1, 7.5.3.2
4.1.1 Key Lines of Inquiry: Caribou	General requirements pertaining to caribou include:	
	<ul style="list-style-type: none"> The EIS must detail any effects on caribou, as well as their significance and likelihood. 	7.5, 7.6
	<ul style="list-style-type: none"> The EIS must address how changes to abundance, health, distribution, and behaviour of caribou may affect the social, cultural, and economic well being of residents of the Mackenzie Valley, particularly Aboriginal communities in the regional study area. This must include an evaluation of possible contamination of country foods, and possible impacts on hunting. 	7.5.4, 7.6.2, 7.5.5
	<ul style="list-style-type: none"> Discrepancies exist between some impact predictions in previous diamond mine assessments and the real or perceived outcomes. The EIS needs to address this by explaining how it incorporated lessons learned. To this end, the developer is required to include a summary of caribou research and caribou related monitoring activities and their results for the potentially affected herds since the first diamond mine was permitted, to the extent that relevant information is publicly available. 	7.3.3.2, 7.6, 7.8.2, 7.9

Table 1.II-2 Terms of Reference Pertaining to Section 7 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
4.1.1 Key Lines of Inquiry: Caribou (continued)	<ul style="list-style-type: none"> The EIS must outline management options for dealing with impacts on caribou and related socio-economic impacts. For situations where the proposed development is predicted to be only one of many sources of impacts, direct or indirect, that combine in a cumulative manner, the EIS should outline what contributions this development can make to addressing a cumulative problem. 	7.6, 7.8.2, 7.4.2
	<ul style="list-style-type: none"> Observations from existing diamond mines must be used to establish how far from a mine site caribou show behavioural changes. 	7.5, 7.6
	Specific requirements regarding caribou include:	
	<ul style="list-style-type: none"> Information on all caribou herds with ranges that include the area of the proposed development, as well as the Tibbitt-to-Contwoyto Winter Road (including population size, demographics, trends, range use patterns, and condition). 	7.3.3.1, 7.3.3.2, 7.5.1
	<ul style="list-style-type: none"> A description of any life stages (including calving, post calving, overwintering, and migration) during which each herd may interact with the proposed development. 	7.5.2, 7.5.3
	<ul style="list-style-type: none"> An estimate of the amount (absolute and relative) of habitat loss, change, degradation, or effective habitat loss for each potentially affected herd for various life stages resulting from the development. 	7.5.1, 7.5.2, 7.5.3, 7.5.4
	<ul style="list-style-type: none"> An estimate of the existing habitat fragmentation at the landscape (seasonal range) and local (site) scale, the expected increase, and its possible effects on each potentially affected caribou herd for various life stages. 	7.5.2
	<ul style="list-style-type: none"> An analysis of ways the proposed development may influence the energy balance of caribou under different seasonal conditions and to what extent this may affect birth rates and calf survival. The analysis must include potential behavioural changes resulting from development components or associated activities, including sensory disturbance, effects on foraging, resting, and caribou movements within the development area. Moreover, the analysis must be broken down into disturbance from individual components, including construction and operation of the mine, traffic on the access route, as well as air traffic. 	7.5.2, 7.5.3, 7.5.4, 7.6
	<ul style="list-style-type: none"> The Identification of all possible sources for increased caribou mortality. 	7.5, 7.6, 7.3.3.2, 7.4.2.1.2
	<ul style="list-style-type: none"> Identification of all hazards to caribou within the development area and access routes, particularly Tibbitt-to-Contwoyto Winter Road crossings, as well as road crossings at the site and hazards that may be posed from mine rock and processed kimberlite containment facilities, materials used to build roads and berms, and the exposed lake bottom (e.g., contact with contaminated or hazardous materials). 	7.3.3.2.4, 7.4.2, 7.4.2.1.1, 7.4.2.1.2, 7.7.2

Table 1.II-2 Terms of Reference Pertaining to Section 7 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
4.1.1 Key Lines of Inquiry: Caribou (continued)	<ul style="list-style-type: none"> The identification of all possible pathways for caribou exposure to contaminants, e.g., from exposure to dust or intake of contaminated forage (e.g. lichens affected by air pollution) or direct intake of tailings, as well as any measures or actions to be taken to minimize exposure. Include a description of any resulting caribou health issues (risk analyses) as well as an evaluation of potential avoidance of caribou as food source by Aboriginal communities. 	7.3.3.2, 7.4.2, 7.4.2.1.1, 7.4.2.1.2, 7.5.3.1, 7.5.5.3
	<ul style="list-style-type: none"> An identification of all potential changes to the predator-prey relationship of any potentially affected herd and how this may affect the herds. 	7.4.2.1.2, 7.3.3.2.4
	<ul style="list-style-type: none"> The identification of all components and associated activities of the development (including use of the Tibbitt-to-Contwoyto Winter Road) that may have an effect on caribou, regardless of whether they are in the developer's view significant or not. 	7.3.3.2.4, 7.4.2, 7.4.2.1.1, 7.4.2.1.2, 7.5.2, 7.5.3, 7.5.4
	<ul style="list-style-type: none"> The identification of all additive, multiplicative, or synergetic effects that may result from the components or activities associated with the proposed development. Determine the overall effect of all components of the development as a whole on caribou. 	7.4.2, 7.5.2.2, 7.5.3.2, 7.5.4.2, 7.6
	<ul style="list-style-type: none"> A description of any methods used to distinguish between impacts from development and natural variations in caribou numbers, health, or behaviour. 	7.5.1, 7.5.4.1.1, 7.5.3.2.2
	<ul style="list-style-type: none"> The identification of potential impacts on caribou from sources other than the proposed development, particularly those that may be influenced by the development. This must include an evaluation of any potential development related changes to harvest levels for each potentially affected caribou herd, e.g., by creating an access via the Mackay Lake road into an area previously inaccessible to vehicular traffic. Natural factors that increase the vulnerability of caribou must be considered as well. 	7.4.2, 7.4.2.1.2, 7.5.2.1, 7.5.3.1
	<ul style="list-style-type: none"> The identification of all cumulative effects of other past, current, or reasonably foreseeable future developments within the range of each potentially affected caribou herd in combination with individual components or activities of the proposed development and its effects on other environmental components, such as predators as well as the overall effect of the proposed development. 	7.4.2, 7.5, 7.6
	<ul style="list-style-type: none"> An outline of any potential measures or actions to minimize impacts, (e.g., various road bed designs). To the extent possible this should include an evaluation of any proposed mitigation against the measures implemented by previous diamond mine developments and a discussion of the likelihood of success for each measure. 	7.4.2
	<ul style="list-style-type: none"> An explanation of how any proposed mitigation measures, including plans for progressive reclamation, will contribute to the sustainability of the Bathurst caribou herd as well as other potentially affected herds. 	7.4.2
	<ul style="list-style-type: none"> An outline of any adaptive management strategies (i.e., what management response will occur if adverse effects on caribou are detected) for any of the items listed above, as well as any plans for monitoring effects on caribou. Management strategies must be outlined where observed effects may be linked directly or indirectly to the proposed development. 	7.4.2

Table 1.II-2 Terms of Reference Pertaining to Section 7 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
7 (Table 7-1) Wildlife Issues	Remaining wildlife issues pertaining to caribou include:	
	• exposure to contaminants;	7.4.2.1.1, 7.4.2.1.2, 7.4.2, 7.5.2
	• impacts to already vulnerable populations;	7.5.4
	• effects on reproduction;	7.5.3.2, 7.5.4
	• cumulative impacts to population;	7.5.3.2, 7.5.4
	• impacts on caribou behaviour;	7.5.3.2, 7.5.3.1, 7.5.4
	• impacts of hazards on-site;	7.4.2.1.1, 7.4.2.1.2, 7.5.3.2.4
	• impacts on migration; and	7.5.2.2, 7.5.3, 7.6.1.1, 7.6.2.1, 7.6.2.2
	• effects of tail waste pile on caribou and their predators.	7.3.3.2.4, 7.4.2
	Remaining wildlife issues pertaining to changing water levels include:	
	• drawdown impacts on habitat;	7.4.2
	• downstream impacts; and	7.4.2
	• wildlife impacts from freeze- and break-up timing changes.	7.4.2
	Remaining general wildlife issues include:	
	• waste management impacts.	7.3.3.2.4, 7.4.2
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	7.10, Appendix 7.I
	The EIS must provide a review of relevant research, monitoring and follow up activities since the first diamond mine was permitted in the Slave Geological Province to the extent that the relevant information is publicly available. This review must focus on the verification of impact predictions and the effectiveness of mitigation measures proposed in previous diamond mine environmental impact assessments. In particular the developer must make every reasonable effort to verify and evaluate the effectiveness of any proposed mitigation measures that have been used, or are similar to those used at other diamond mining projects in the Mackenzie Valley.	7.3.3.2, 7.6, 7.8.2, 7.9

Table 1.II-3 Terms of Reference Pertaining to Section 8

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
3.1.3 Existing Environment: Water Quality and Quantity	Describe all water bodies, watercourses, and major drainage areas and watersheds potentially affected by the proposed development	8.3.1
	Describe Kennady Lake, including:	
	- lake-bed bathymetry and composition	8.3.8.2.1
	- lake volumes and seasonal variations	8.3.8.2.1
	- freeze/thaw timing	8.3.5.2.1
	- permafrost conditions beneath or around lake	8.3.3.2, 11.6.2.1, Annex D
	- flow patterns	8.3.5.2.3
	Describe existing water quality for each water body identified for use in the proposed development, and those immediately downstream	8.3.6.2.1, 8.3.6.2.2
	Describe existing groundwater resources in the Project area, including quality and quantity, flow patterns, recharge and discharge areas, and interactions with surface water	8.3.4.2.1, 8.3.4.2.2, 8.3.4.2.3, 8.3.4.3
	identify relevant federal, provincial, or territorial guidelines, criteria, or legislation	8.3.6.1
3.1.3 Existing Environment: Fish and Aquatic Life Forms	describe fish-bearing waterbodies and watercourses that may be affected by the proposed development	8.3.8.2.1
	describe potentially affected fish species and local populations, and for each describe:	
	- seasonal and life cycle movements	8.3.8.2
	- habitat requirements for each life stage	8.3.8.2.
	- local and regional abundance, distribution, use of habitat	8.3.8.2
	- known sensitive habitat areas, species or life stage/activity (e.g., spawning, hatching, feeding)	8.3.8.2
	describe key species used for traditional harvesting activities and any ecotourism activities	8.5.2.2
	describe the micro-organism community present in Kennady Lake, including plankton, algae, and benthic invertebrates	8.3.7.2.1, 8.3.7.2.2
	describe any known issues currently affecting fish and aquatic life forms in the proposed development (e.g., contamination of food sources, parasites, disease)	8.3.8.2.10

Table 1.II-3 Terms of Reference Pertaining to Section 8 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
4.1.2 Key Lines of Inquiry: Water Quality and Fish in Kennady Lake	general requirements pertaining to water quality and fish in Kennady Lake include:	
	- the EIS must provide a detailed analysis of all impacts on fish abundance, health, and fitness for consumption including a comprehensive analysis of potential impacts on water quality of Kennady Lake as a result of possible contamination. Particular emphasis must be placed on the ability of the lake ecosystem, particularly fish and fish habitat, to recover from prolonged exposure of the lake-bed and on the viability of the proposed disposal methods for waste rock and kimberlite	8.8, 8.9, 8.10, 8.11, 11.5
	specific requirements pertaining to fish in Kennady Lake include:	
	- describe any impacts associated with the fish-out, fish salvage, and restocking	8.6.2.1, 8.10.3
	- describe habitat destruction and creation, including potential for interrupting fish migration, alterations to natural drainage, and addition of deep water habitat	8.6.2
	- describe possible fish contamination, and wildlife and human health effects from contaminated fish consumption, including pathways and long- and short-term exposure levels and health effects of toxic exposure levels on wildlife and humans.	8.6.2, 8.7.3, 8.9.8.12
	- describe possible changes to fish behaviour including interruption of migration and spawning patterns and associated effects and changes in the behaviour of wildlife species dependent on fish populations	8.6.2, 8.10, 8.11, 8.12,
	specific requirements pertaining to water quality in Kennady Lake include:	
	- describe the water balance for Kennady Lake and analysis of related uncertainties	8.4.5, 8.15
	- describe expected changes in turbidity in Kennady Lake with adaptive management options for unexpected turbidity levels (this analysis may use simulation models)	8.8
	- describe the hydrogeological dynamics of the lake bottom under freezing conditions, in particular the potential for highly concentrated deep ground water to be expelled into the remaining ponds during freeze up, as well as an assessment of changes in the thermal regime of the lake bottom and the extent of freezing	11.6
	- provide a description of maintenance procedures for long-term frozen conditions of potentially reactive waste rock and barren kimberlite, including the incorporation of frozen conditions under climate change parameters	8.6, 11.6, 11.13
	- provide a long-term monitoring plan of thermal conditions of frozen waste rock and PK piles	8.11, 11.5
	- describe any interactions between ground water and submerged processed kimberlite and waste rock, including the possibility of the pits being a long-term contamination source	8.6.2.3, 11.6, 11.5

Table 1.II-3 Terms of Reference Pertaining to Section 8 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
4.1.2 (continued)	- describe potential contamination sources including: mill effluent, lake-bed sediments, backfilled pits, use of explosives, spills (including additive effects of minor spills over time), waste rock and processed kimberlite, and deep ground water, including adequate information to evaluate the potential for dust generation from the exposed lake-bed (e.g., substrate characteristics, particle size, sediment chemistry) as well as bench testing of drying behaviour	8.4.6, 11.4, 11.6
	- describe all potential sources for water contamination, particularly hydrocarbon or ammonium nitrate contamination including accidents and malfunctions; this must also include an evaluation of the potential for explosive charges, exploded or unexploded, to contribute to pollution	8.4.6, 8.6
	- provide a detailed Water Management Plan with information on treatment surfactants and reagents with enough detail to assess the capability of the treatment system to protect water quality, including back up options for adaptive management	8.4.3
	- describe any proposed collection system for runoff from processed kimberlite and waste rock storage facilities, including expected contaminant levels and contingency plans	8.4.3
	- describe any proposed monitoring activities, including monitoring of untreated runoff from roads or other structures. (the principles addressed in section 3.2.7 on compliance inspection, monitoring, and follow-up apply)	8.16
	- describe the spatial extent of downstream effects and how these effects may change through time (seasonally and annually)	9
	- describe water balance calculations during present conditions and over time as the Project proceeds is required to compare baseline conditions with future downstream effects	8.4.5
	- describe impacts on riparian vegetation in Kennady Lake, water fowl, semi-aquatic furbearers, terrestrial mammals, and channel stability from downstream effects of water discharges during construction, fluctuating water levels during operation, and reduced water levels while the lake is refilling	8.12, 8.12.2.1.2, 11.12
	- describe impacts on wildlife resulting from a possible change in freeze-up and thaw conditions associated with the de-watering of Kennady Lake	8.12, 8.12.2.1.2, 11.12
	- describe the reversibility of impacts associated with water level changes and the ability of affected ecosystems to recover	8.6, 8.7.4, 8.11
	- describe the effects of lake dewatering and excavation of pits on ground water flow and quality in the Kennady Lake area in the short- and in the long-term as well as details on how groundwater flows will be managed (including simulations)	8.6.2.3, 8.7.3.2, 8.7.3.3, 11.6

Table 1.II-3 Terms of Reference Pertaining to Section 8 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
4.1.2 (continued)	- describe the potential interaction between ground water and the open pits, as well as between ground water and submerged waste rock or kimberlite, including the possibility of the pits being a long-term contamination source	8.6.2.3, 11.6, 11.5
	- describe the relationship between taliks (i.e., unfrozen sections of soil beneath water bodies) and ground water flows in the Project area, particularly potential for taliks acting as a pathway for contaminants, including the distribution of taliks in the Project area and any connection or interactions between taliks of different lakes	8.3.4.2.1, 8.3.4.2.2, 8.3.4.2.3, 11.6
	- describe the chemical stability of co-disposed waste rock and processed kimberlite	Appendix 8.I
	- describe the confidence in predictions from long-term modelling has been conducted for permafrost issues, particularly effects of the pits on the thermal regime, and a verification that robust monitoring program will be in place	8.15
7 (Table 7-2) Fish Issues	remaining fish issues pertaining to watershed impacts include:	
	- fish health	8.9
	- fish behaviour (increase and decrease in flow)	8.10
	- migration interruption	8.10
	- water chemistry alterations from deep ground water	8.6, 8.8.4
	- chemistry changes in sediment and water	8.6, 8.8.3, 8.8.4
	- impacts of backfilling on aquatic biota	8.6, 8.10.4
	- fluctuation of water flows	8.7
	remaining fish issues pertaining to road effects include:	
	- ice road construction	8.6
	- erosion	8.7
	- water withdrawal	8.7
	- increased ice thickness	8.7
	- watercourse crossings	8.6, 8.10
	- spills	8.4, Appendix 3.I, Attachment 3.I.1
	remaining fish issues pertaining to operations and construction include:	
	- fish out	8.6, 8.10.3
	- contaminant levels	8.8

Table 1.II-3 Terms of Reference Pertaining to Section 8 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
7 (Table 7-2) Fish Issues (continued)	- freshwater lake impacts	8.7, 8.8.1, 8.10.3, 8.11, 8.13
	- habitat destruction and creation	8.6, 8.10
	- noise and vibration on fish behaviour	8.6.2.2
	remaining fish issues pertaining to data collection include:	
	- baseline data	8.3
	- monitoring	8.16
	remaining fish issues pertaining to long-term effects include:	
	- feasibility of recovery	8.11
	- physical changes to lake	8.6
	- addition of deep water habitat post-mine and impacts on the rest of the lake	8.6, 8.8, 8.10
	remaining fish issues pertaining to reclamation methods include:	
	- alternative water sources	8.6
	- habitat creation	8.6, 10
	- restocking of fish	8.6, 8.11
7 (Table 7-3) Water Issues	remaining water issues pertaining to water quality include:	
	- end of pipe contamination	8.8.3
	- pits as long-term contamination sources	8.6, 8.8.4, 11.6, 11.5
	- turbidity during dewatering and rewatering lake	8.8.4
	- contamination runoff from PKC and waste rock	8.6
	- dust as water contamination	8.8.3
	- hydrocarbon contamination	8.6, Appendix 3.I, Attachment 3.I.1
	- length and adequacy of long-term water quality monitoring	8.16
	remaining Kennady Lake water issues related to public concern include:	
	- implications of water quality on human health	8.12
	remaining Kennady Lake water issues related to surface water and watershed include:	
	- ice quality on Kennady Lake and surrounding lakes	8.3.5.2.1
	remaining Kennady Lake water issues pertaining to water use and management include:	
	- alterations to natural drainage	8.7

Table 1.II-3 Terms of Reference Pertaining to Section 8 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	8.16
	The EIS must provide a review of relevant research, monitoring and follow up activities since the first diamond mine was permitted in the Slave Geological Province to the extent that the relevant information is publicly available. This review must focus on the verification of impact predictions and the effectiveness of mitigation measures proposed in previous diamond mine environmental impact assessments. In particular the developer must make every reasonable effort to verify and evaluate the effectiveness of any proposed mitigation measures that have been used, or are similar to those used at other diamond mining projects in the Mackenzie Valley.	8.3.4.2.3, 8.3.4.3.2, 8.3.7.2.1, 8.4.6.3.1, 8.6.2.3, 8.8.3.1.1, 8.10.2.4, 8.10.3.2, 8.10.3.3, 8.15
	The EIS must include a proposal of how monitoring activities at the Gahcho Kué diamond mine can be coordinated with monitoring programs at all other diamond mines in the Slave Geological Province to facilitate cumulative impact monitoring and management. This proposal must also consider reporting mechanisms that could inform future environmental assessments or impact reviews. The developer is not expected to design and set up an entire regional monitoring system, but is expected to describe its views on a potential system. The developer must also state its views on the separation between developer and government responsibilities.	8.11, 8.16

Table 1.II-4 Terms of Reference Pertaining to Section 9

Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.1.3 Physical Environment: Water Quality and Quantity	Describe all water bodies, watercourses and major drainage areas and watersheds potentially affected by the proposed development	9.3.2
	Describe existing water quality for each water body identified for use in the proposed development, and those immediately downstream	9.3, Annex I, Addendum II
	Describe existing groundwater resources in the Project area, including quality and quantity, flow patterns, recharge and discharge areas, and interactions with surface water	9.3
	Identify relevant federal, provincial, or territorial guidelines, criteria, or legislation	9.8
3.1.3 Existing Environment: Fish and Aquatic Life Forms	Describe fish-bearing waterbodies and watercourses that may be affected by the proposed development	9.3
	Describe potentially affected fish species and local populations, and for each describe:	
	• seasonal and life cycle movements;	9.3.5
	• habitat requirements for each life stage;	9.3.5
	• local and regional abundance, distribution, use of habitat; and	9.3.5
	• known sensitive habitat areas, species or life stage/activity (e.g., spawning, hatching, feeding)	9.3.5, 9.10
	Describe key species used for traditional harvesting activities and any ecotourism activities.	9.5.1.3
4.1.3 Key Lines of Inquiry: Downstream Water Effects	Describe any known issues currently affecting fish and aquatic life forms in the proposed development (e.g., contamination of food sources, parasites, disease).	9.3.5
	Specific requirements pertaining to downstream water effects include:	
	• describe the physical effects of increased flows and changes to water quality on downstream water bodies	9.7
	• provide an analysis of the geographic extent of any downstream effects and a water balance for all affected water bodies	9.7
	• provide a detailed assessment of impacts on aquatic life that considers timing and levels of increased flows and changes to downstream water quality relative to sensitive life stages of fish	9.7
	• provide a detailed assessment of the potential biological impacts of changes, such as effects on riparian habitat and wildlife such as semi-aquatic fur-bearers and waterfowl that use riparian habitat	9.8, 9.9, 9.10, 9.11

Table 1.II-4 Terms of Reference Pertaining to Section 9 (continued)

Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
7 (Table 7-3) Water Issues	Remaining issues pertaining to surface water and watershed include:	
	• downstream effects of large water releases;	9.7, 9.8, 9.9, 9.10
	• reduced water flows as lake level is restored;	9.7.3, 9.7.4
	• ice quality on Kennady Lake and surrounding lakes;	9.3.2.2.2
	• cumulative effects on Hoarfrost and Lockhart rivers and Great Slave Lake; and	9.12, 11.2
	• extent of downstream effects	9.7, 9.8, 9.9, 9.10
	Remaining issues pertaining to surface water use and management include:	
	• water diversion effects; and	9.7, 9.10
	• alterations to natural drainage	9.7, 9.10
	Remaining issues pertaining to public concern include:	
	• implications of water quality on human health; and	9.8, 9.11
	• public notification of flooding events	Section 3
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	9.13.4, 9.14, 9.15
	The EIS must provide a review of relevant research, monitoring and follow up activities since the first diamond mine was permitted in the Slave Geological Province to the extent that the relevant information is publicly available. This review must focus on the verification of impact predictions and the effectiveness of mitigation measures proposed in previous diamond mine environmental impact assessments. In particular the developer must make every reasonable effort to verify and evaluate the effectiveness of any proposed mitigation measures that have been used, or are similar to those used at other diamond mining projects in the Mackenzie Valley.	9.2, 9.3.1, 9.6.2.1.2

Table 1.II-5 Terms of Reference Pertaining to Section 10

Final Terms of Reference Requirements		Addressed in Subsection
Section	Description	
4.1.4 Key Line of Inquiry: Long-term Biophysical Effects, Closure, and Reclamation	General requirements pertaining to long-term biophysical effects, closure and reclamation include:	
	<ul style="list-style-type: none">the EIS must include a conceptual closure and reclamation plan and an analysis of the viability of this plan	10.4.1, 10.4.2
	<ul style="list-style-type: none">the EIS must include a description of follow-up and monitoring programs, contingency plans, or adaptive management programs designed to verify the impact predictions of this environmental impact review	10.10
	<ul style="list-style-type: none">a detailed contingency plan, spelling out monitoring and adaptive management strategies, must be developed to address the possibility that partially backfilled pits will adversely impact water quality in the immediate and surrounding areas	10.10
	<ul style="list-style-type: none">the EIS must address follow-up programs not only in regards to the direct impacts of the proposed development but also in regards to cumulative impacts in combination with other developments	10.10
	<ul style="list-style-type: none">the EIS must include the developer's vision of a coordinated monitoring program for cumulative effects from all diamond mines between the developer, other developers, Aboriginal communities, and government agencies	10.10
	Specific information needs pertaining to long-term biophysical effects, closure, and reclamation include:	
	<ul style="list-style-type: none">provide a demonstration of the long-term physical stability including long-term maintenance of frozen conditions both within and under waste rock and processed kimberlite storage facilities. If long-term waste storage is solely reliant on frozen conditions, stability of frozen conditions in climate change scenarios must be included	10.4.2
	<ul style="list-style-type: none">provide a description of any plans to restock the lake	10.5.3.3
	<ul style="list-style-type: none">provide an evaluation of the long-term physical stability of any works constructed in connection with the development, including reclaimed areas	10.4.2
	<ul style="list-style-type: none">provide an evaluation of the potential for acid generating rock, the resulting impacts, and the management options to deal with acid generating rock and its impacts	10.4.2
	<ul style="list-style-type: none">provide a summary of the use of public consultation, consultation with first nations, and traditional knowledge in determining standards and methods for reclamation	10.4.3
	<ul style="list-style-type: none">provide an evaluation of the possibility of speeding up the re-filling of the lake by utilizing additional water sources	10.4.1.13
	<ul style="list-style-type: none">provide a description of the type of fish and other aquatic habitat that will be created during reclamation, including a comparison to the existing habitat, as well as a description how DFO's No Net Loss requirements will fully mitigate all predicted impacts on fish habitat	10.4.1.12
	<ul style="list-style-type: none">provide an evaluation of the capacity of the ecosystem to fully recover, or a prediction of the type of ecosystem that is expected to be created instead	10.5
	<ul style="list-style-type: none">provide any long-term monitoring plans, need for long-term care and maintenance, assurance of long-term monitoring and maintenance, including long-term structural and environmental stability of waste rock and kimberlite storage facilities	10.10

Table 1.II-6 Terms of Reference Pertaining to Section 11.2

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
5.2.1 Biophysical Subjects of Note: Impacts on Great Slave Lake	Under the 'downstream water effects' Key Line of Inquiry the EIS must already address the question of how far downstream any effects from water flow fluctuation and contamination are likely to reach.; therefore, a summary of the analysis for Great Slave Lake suffices here	11.2.3
7 (Table 7-3) Water Issues	Remaining issues pertaining to surface water and watershed include:	11.2.3
	<ul style="list-style-type: none"> cumulative effects on Hoarfrost and Lockhart Rivers and Great Slave Lake. 	

Table 1.II-7 Terms of Reference Pertaining to Section 11.3

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
3.2.6 Assessment Methods and Presentation: Alternatives	<p>The EIS must provide a reasonably detailed analysis of alternatives to individual development components or activities, including but not limited to:</p> <ul style="list-style-type: none"> energy sources and energy conservation measures 	11.3.2, 11.3.3.1, 11.3.4
5.2.8 Biophysical Subjects of Note: Alternative Energy Sources	<p>The EIS must provide a thorough analysis of alternative means of carrying out the development; this is especially true for energy sources.</p> <p>In addition to discussing the feasibility of alternatives and how they could be incorporated into the development, the EIS must compare the environmental impacts of transporting and burning diesel fuel to the environmental impacts of renewable energy sources (e.g. hydroelectric power or wind power).</p> <p>The EIS must also provide details regarding any relevant current negotiations and commitments relating to alternative energy sources.</p>	11.3.3.1, 11.3.3.2, 11.3.4

Table 1.II-8 Terms of Reference Pertaining to Section 11.4

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
3.1.3 Existing Environment: Air Quality	Describe airshed(s) within which the Project is located and a rationale for the delineation	11.4.1.3.2
	Describe any current sources of emissions to the airshed(s), including current seasonal variations, climatic conditions that affect air quality	11.4.2.2, Appendix 11.4.II and Annex B
	Describe visibility	11.4.2.2.3, Annex B
	Describe sources of data, including locations of any recording stations and length of record available	11.4.2.2 and Annex B
5.2.2 Biophysical Subjects of Note: Air Quality	General requirements pertaining to air quality include:	
	<ul style="list-style-type: none"> the EIS must provide air quality modelling for construction and operational phases, including worst case scenarios 	11.4.5.1, 11.4.5.11, and Appendix 11.4.II
	<ul style="list-style-type: none"> the air quality assessment must include an assessment of risk to human health, including worker camps 	11.4.5.8
	<ul style="list-style-type: none"> the EIS must further identify best available technologies and best management practices to be used 	11.4.3.2 and 11.4.8
	<ul style="list-style-type: none"> in addition to providing predictions and a significance evaluation for impacts on air quality, the EIS must provide an analysis of how air quality changes, particularly pollutants with bioaccumulation potential, will affect vegetation, wildlife, and fish; this analysis must be factored into the impact analysis for fish and wildlife issues 	7, 8, 9
	Specific requirements pertaining to air quality include:	
	<ul style="list-style-type: none"> evaluate diesel powered equipment and power generation, and the related transportation of fuel 	11.4.5 and Appendix 11.4.II
	<ul style="list-style-type: none"> evaluate dust generated by traffic, use of explosives, the exposed lake bottom, and other exposed surfaces including the processed kimberlite 	11.4.5.5 and Appendix 11.4.II
	<ul style="list-style-type: none"> evaluate the release of persistent organic pollutants and metals from waste incineration, including a description of how compliance with Canada-wide standards for dioxins, furans, and mercury will be achieved 	11.4.3. 2, 11.4.5.8, 11.4.5.9, 11.4.5.10, Appendix 11.4.II and Appendix 11.4.III

Table 1.II-8 Terms of Reference Pertaining to Section 11.4 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
5.2.2 Biophysical Subjects of Note: Air Quality (cont)	<ul style="list-style-type: none"> evaluate the release of various pollutants including NO_x, SO₂, CO, with air quality predictions based on an air quality model comparing predicted ambient pollutant concentrations with applicable ambient air quality and deposition standards 	11.4.3. 2, 11.4.5.1, 11.4.5.2, 11.4.5.3, 11.4.5.4, 11.4.5.5, 11.4.5.6, and Appendix 11.4.II
7 (Table 7-4) Other Issues	Remaining issues pertaining to air quality include:	
	<ul style="list-style-type: none"> increased dust from exposed lake bed 	11.4.5.5 and Appendix 11.4.II
	<ul style="list-style-type: none"> waste incineration impacts 	11.4.5.10
	<ul style="list-style-type: none"> impacts from emissions 	11.4.6, 11.4.7
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	11.4.8
	The EIS must provide a review of relevant research, monitoring and follow up activities since the first diamond mine was permitted in the Slave Geological Province to the extent that the relevant information is publicly available. This review must focus on the verification of impact predictions and the effectiveness of mitigation measures proposed in previous diamond mine environmental impact assessments. In particular the developer must make every reasonable effort to verify and evaluate the effectiveness of any proposed mitigation measures that have been used, or are similar to those used at other diamond mining projects in the Mackenzie Valley.	11.4.2.2, Appendix 4.II, Annex B

Table 1.II-9 Terms of Reference Pertaining to Section 11.5

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
5.2.6 Biophysical Subjects of Note: Waste Rock and Processed Kimberlite Storage	The EIS must provide a detailed description and analysis of how any water contamination from mine rock and processed kimberlite placed in the backfilled pits will be avoided over the long-term (i.e., many decades or even centuries after mine closure). This will include descriptions of interactions between the mine rock and processed kimberlite (PK) and all sources of water, including groundwater, surface water, and permafrost (including taliks).	11.5.4.1, 11.5.4.2
	The EIS must clearly describe the planned long-term maintenance of the mine rock and processed kimberlite under frozen conditions. This description must include different scenarios, including scenarios occurring decades and centuries into the future and a consideration of climate change.	11.5.4.4
	The EIS must provide a review of available information on the effects of structures (such as the height of the mine rock piles) on caribou behaviour, including experiences at any of the existing mines in the NWT.	11.5.4.3
	The EIS must provide a detailed discussion of alternative designs for the mine rock pile and their potential impacts.	2.3.3
7 (Table 7-4) Other Issues	<p>Remaining issues pertaining to physical stability include:</p> <ul style="list-style-type: none"> mine rock and PK co-disposal; and impacts from changing permafrost. 	11.5.2, 11.5.4.4

Table 1.II-10 Terms of Reference Pertaining to Section 11.6

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
Permafrost		
3.1.3 Existing Environment: Permafrost	Describe the distribution, thickness, and lateral extent on the surface	11.6.2.1, Annex D
	Describe permafrost processes, features, and stability, including a description of the active layer	11.6.2.1, Annex D
	Describe the extent, locations, and dimensions of taliks, including any connections between taliks in terms of groundwater movement	11.6.2.1, 11.6.2.2.3, 11.6.2.2.5, Annex D
	Describe the interfaces between frozen and unfrozen ground (including frequency and length of segments)	11.6.2.1, Annex D
	Describe permafrost conditions beneath or around Kennady Lake	11.6.2.1, 8.3.3.2, Annex D
5.2.5 Biophysical Subjects of Note: Permafrost, Groundwater, and Hydrogeology	Include a discussion of the potential impacts for accumulation of permafrost into on-site infrastructure and proposed mitigative measures	11.6.3.1, 11.6.4.1
4.1.2 Water Quality and Fish in Kennady Lake	Description of maintenance procedures for long-term frozen conditions of potentially reactive waste rock and barren kimberlite, including the incorporation of frozen conditions under climate change parameters	11.5, 11.6.3, 11.13
	Long-term monitoring plan of thermal conditions of frozen waste rock and process kimberlite piles	11.6.3.4
	Confidence in predictions from long-term modelling that has been conducted for permafrost issues, particularly effects of the pits on the thermal regime, and a verification that a robust monitoring program will be in place	11.6.3
4.1.4 Long Term Biophysical Effects, Closure and Reclamation	Demonstration of the long-term physical stability including long-term maintenance of frozen conditions both within and under waste rock and processed kimberlite storage facilities; if long-term waste storage is solely reliant on frozen conditions, stability of frozen conditions in climate change scenarios must be included	11.5, 11.6.3, 11.13
7 (Table 7-3) Water Issues	Remaining water issues pertaining to permafrost include:	
	• effects of permafrost freeze back on exposed lake bed	11.6.3.1.2
	• adequacy of permafrost monitoring and data to appropriately model mine components	11.6.3.4
	• problems with freeze-back of processed kimberlite	11.5, 11.6
	• implications of climate change on reclaimed mine components	11.13
7 (Table 7-4) Other Issues	Remaining issues pertaining to physical stability:	
	• impacts from changing permafrost	11.5, 11.6.3

Table 1.II-10 Terms of Reference Pertaining to Section 11.6 (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
Groundwater and Hydrogeology		
3.1.3 Existing Environment: Water Quality and Quantity	Describe existing groundwater resources in the Project area, including quality and quantity, flow patterns, recharge and discharge areas, and interactions with surface water	11.6.2.2, Annex G
5.2.5 Biophysical Subjects of Note: Permafrost, Groundwater, and Hydrogeology	Provide a detailed analysis of the feasibility of sequestering contaminants in the mined out pits over the long-term	11.6.4, 11.5
4.1.2 Water Quality and Fish in Kennady Lake	Hydrogeological dynamics of the lake bottom under freezing conditions, in particular the potential for highly concentrated deep groundwater to be expelled into the remaining ponds during freeze-up, as well as an assessment of changes in the thermal regime of the lake bottom and the extent of freezing	11.6.3
	Interactions between groundwater and submerged processed kimberlite and waste rock, including the possibility of the pits being a long-term contamination source	11.6.4
	Potential interaction between groundwater and the open pits, as well as between groundwater and submerged waste rock or kimberlite, including the possibility of the pits being a long-term contamination source	11.6.4, 8.6.2
	Relationship between taliks and groundwater flows in the Project area, particularly the potential for taliks to act as a pathway for contaminants, including the distribution of taliks in the Project area and any connection or interactions between taliks of different lakes	11.6.4, 8.3.4
7 (Table 7-3) Water Issues	Remaining water issues pertaining to groundwater/hydrogeology include:	
	• impacts of pits on movement and quality of groundwater	11.6.4
	• interaction between groundwater and submerged waste	11.6.4
	• relationships between taliks and groundwater flow regime	11.6.2
	• short-term and long-term impacts on groundwater flow	11.6.4
	• management of groundwater flows by De Beers	11.6.4

Table 1.II-10 Terms of Reference Pertaining to Section 11.6 (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	11.6.3.4, 11.6.4.4
	The EIS must provide a review of relevant research, monitoring and follow up activities since the first diamond mine was permitted in the Slave Geological Province to the extent that the relevant information is publicly available. This review must focus on the verification of impact predictions and the effectiveness of mitigation measures proposed in previous diamond mine environmental impact assessments. In particular the developer must make every reasonable effort to verify and evaluate the effectiveness of any proposed mitigation measures that have been used, or are similar to those used at other diamond mining projects in the Mackenzie Valley.	11.6.4.1, 11.6.4.3

Table 1.II-11 Terms of Reference Pertaining to Section 11.7

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.1.3 Existing Environment: Development Location	Describe the physical location of the proposed development (with maps), including ecozone(s) and ecoregion(s)	11.7.1.3, 11.7.2.1
3.1.3 Existing Environment: Physical Environment	Describe the bedrock and subsurface conditions, including: <ul style="list-style-type: none"> bedrock type, depth, and composition 	Appendix 11.7.I
	Describe the surficial materials and soils, including: <ul style="list-style-type: none"> unconsolidated materials and terrain types, including thickness land forms, including bogs, fens, and peat plateaus soil types, including groups, series, and type 	Appendix 11.7.I
	Describe the bedrock and subsurface conditions, including: <ul style="list-style-type: none"> locations, type of materials, size and depth of deposit permafrost and ice conditions within deposits including discussion of material stability quantity and availability of granular materials 	Appendix 11.7.I
	Describe areas of potential instability, including: <ul style="list-style-type: none"> areas of geological instability, geological hazard, and seismicity 	Appendix 11.7.I
3.1.3 Existing Environment: Vegetation	Describe vegetation types in the Project area (including a map and any classification systems relevant to the area).	11.7.2
	Describe species present in the Project area and identification of any species that are valued or rare.	11.7.2.3
	Describe baseline levels of contamination of local vegetation including lichen indicator species.	11.7.2.3.5
	Describe the existing natural fire regime, including frequency and past events.	11.7.2.1
5.2.12 Biophysical Subjects of Note: Vegetation	Include an assessment of the probability of introducing any foreign, parasitic, or invasive species, as well as management options in the case of such an introduction.	11.7.3.4
	Address the potential of dust (from lake bed or exposed surfaces, including roads) to adversely affect vegetation by changing snow melt and plant phenology, or by any other means.	11.7.4
	Any effects of dust on wildlife (as a result of changes to vegetation) must be described.	11.7.5
7 (7-4) Other Issues	Remaining issues pertaining to vegetation include:	
	<ul style="list-style-type: none"> increase in invasive species 	11.7.3.4
	<ul style="list-style-type: none"> impacts from increased dust on vegetation 	11.7.3.4
	<ul style="list-style-type: none"> stress to rare plant populations 	11.7.4.1.2

Table 1.II-11 Terms of Reference Pertaining to Section 11.7 (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	11.7.10

Table 1.II-12 Terms of Reference Pertaining to Section 11.8

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
5.2.11 Biophysical Subjects of Note: Traffic and Road Issues	Describe any efforts by the developer; other developers; or governments to monitor the environmental effects of the Tibbitt-to-Contwoyto Winter Road	11.8.2.6
	Describe the results of these efforts and any plans for future monitoring	11.8.2.6; 11.8.9
	Describe how changes in traffic volume and pattern may affect the environment; including caribou; erosion; and sedimentation around portages; vegetation; waterbodies; fish; spills; and water withdrawal	11.8.3.4; 11.8.4, 11.8.5, 11.8.6
	Describe how construction and operation of the spur road may affect the environment, including caribou, erosion/sedimentation around portages, vegetation and benthic environment, spills, and water withdrawal	11.8.4, 11.8.5, 11.8.6
	Describe the potential of the spur road to open a previously inaccessible area to hunters or recreational snowmobilers (any data collected during the advanced exploration stage on this issue should be presented)	11.8.7
	Describe how the proposed development will alter traffic volumes and patterns on the Tibbitt-to-Contwoyto Winter Road and Ingraham Trail; including potential hazards to other road users and the transport of dangerous goods	11.8.3.2; 11.8.3.4
	Describe increases in air traffic; including the estimated number of flights during construction; operation; and closure; broken down by season and type of aircraft (i.e., jet, large propeller; small airplane; and helicopter); this should be estimated based on experience with previous diamond mine developments; taking into consideration 'normal' winter road seasons; such as the 2006/07 season; as well as exceptional seasons such as the 2005/06 season that resulted in a significant increase in air traffic; and potential interactions with caribou (e.g. During spring migration)	11.8.3.3; 11.8.3.5; 11.8.6
	Describe any potential effects related to the use of glycol on the airstrip	11.8.4.2.2
7 (7-1) Wildlife Issues	Remaining wildlife issues pertaining to traffic and road concerns include <ul style="list-style-type: none"> • impacts from traffic on winter roads; • new access from spur road; and • aircraft traffic disturbance 	11.8.4.3; 11.8.4.2
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	11.8.2.6, 11.8.9
	The EIS must provide a review of relevant research, monitoring and follow up activities since the first diamond mine was permitted in the Slave Geological Province to the extent that the relevant information is publicly available. This review must focus on the verification of impact predictions and the effectiveness of mitigation measures proposed in previous diamond mine environmental impact assessments. In particular the developer must make every reasonable effort to verify and evaluate the effectiveness of any proposed mitigation measures that have been used, or are similar to those used at other diamond mining projects in the Mackenzie Valley.	11.8.2.6

Table 1.II-13 Terms of Reference Pertaining to Section 11.9

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
5.2.10 Biophysical Subjects of Note: Waste Management and Wildlife	General requirements pertaining to waste management and wildlife include:	
	The EIS must include a discussion of alternatives to the proposed waste management plan that have been considered and any adaptive management options.	11.9.3.8
	The waste management plan must take into consideration experiences of the existing diamond mines as well as the capacity of the receiving environment (e.g., for sewage disposal).	8, 11.9.2.6, 11.9.3
	The EIS must show that Yellowknife is capable and willing to accept the materials, particularly hazardous material.	11.9.3.3, 11.9.3.4
	The EIS must provide a plan of waste management during construction, operation, and closure including:	11.9.3
	<ul style="list-style-type: none"> camp sewage; camp refuse; automotive fluids or other hydrocarbons at the mine site and on the access route from Yellowknife, including handling of hydrocarbon contaminated soil; scrap metal and other discarded machinery or parts; discarded construction material; any hazardous materials; and any other waste generated. 	11.9.3.5 11.9.3.4, 11.9.3.6 11.9.3.4, 11.9.3.7 11.9.3.3, 11.9.3.4, 11.9.3.6.3 11.9.3.4, 11.9.3.6.3, 11.9.3.7 11.9.3.4, 11.9.3.7 11.9.3
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	11.9.2.6.3
	The EIS must provide a review of relevant research, monitoring and follow up activities since the first diamond mine was permitted in the Slave Geological Province to the extent that the relevant information is publicly available. This review must focus on the verification of impact predictions and the effectiveness of mitigation measures proposed in previous diamond mine environmental impact assessments. In particular the developer must make every reasonable effort to verify and evaluate the effectiveness of any proposed mitigation measures that have been used, or are similar to those used at other diamond mining projects in the Mackenzie Valley.	11.9.2.6.3, 11.9.4.2, 11.9.4.3

Table 1.II-14 Terms of Reference Pertaining to Section 11.10

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.1.3 Existing Environment: Mammals (Excluding Caribou)	Describe species present, and for each describe:	
	<ul style="list-style-type: none"> abundance, distribution, seasonal movements, habitat requirements 	11.10.1.3, 11.10.2.1, 11.10.2.2, 11.10.2.3, 11.10.2.4
	<ul style="list-style-type: none"> areas of specific habitat use at various life stages (e.g., denning) 	11.10.2.2, 11.10.2.3
	<ul style="list-style-type: none"> any sensitive time periods or habitat 	11.10.2.2, 11.10.2.3
	<ul style="list-style-type: none"> any other relevant sensitivities or limiting factors, such as behaviours or territory requirements 	11.10.2.2, 11.10.2.3
	Describe key species used during traditional harvesting activities	11.10.2.3
5.2.3 Biophysical Subjects of Note: Carnivore Mortality	Describe any known issues currently affecting wildlife (excluding caribou) in the development area, (e.g., contamination of food sources, parasites, disease)	11.10.2.4
	General requirements pertaining to carnivore mortality include:	
	<ul style="list-style-type: none"> the EIS must evaluate the experiences with carnivore mortality and related mitigation measures at existing and developing diamond mines, including Ekati, Diavik, and Snap Lake 	11.10.2.4, 11.10.3,
	<ul style="list-style-type: none"> in addition to an evaluation of the mitigation measures prescribed in earlier assessments, as well as any adaptive management activities, the EIS must provide improvements over the methods applied at existing developments 	11.10.2.4, 11.10.3
	<ul style="list-style-type: none"> the EIS must address any differences in impact predictions resulting from the proposed development's proximity to the tree line 	11.10.3.2, 11.10.4.2, 11.10.4.3, 11.10.5.1, 11.10.5.2
	Specific information needs pertaining to carnivore mortality include:	
	<ul style="list-style-type: none"> potential attraction to wolves, foxes, bear, and wolverines to attractants such as garbage, the creation of habitat in the camp, mine rock storage, etc. 	11.10.2.4, 11.10.3.2, 11.10.4.3, 11.10.4.5; 11.10.5.2
	<ul style="list-style-type: none"> development components that may cause a sensory disturbance to wolves, foxes, bear, and wolverines 	11.10.3.2, 11.10.4.3, 11.10.5.2
	<ul style="list-style-type: none"> effects on movement and hunting success from linear development components such as the ice road 	11.10.3.2, 11.10.4.3, 11.10.5.2, 11.10.5.4
	<ul style="list-style-type: none"> increased carnivore mortality resulting from creating access into a previously largely inaccessible area 	11.10.3.2, 11.10.4.3, 11.10.4.4, 11.10.5.2, 11.10.5.4
	<ul style="list-style-type: none"> impacts on prey species including small mammals 	11.10.3.2, 11.10.4.5, 11.10.5.3

Table 1.II-14 Terms of Reference Pertaining to Section 11.10 (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
5.2.3 Biophysical Subjects of Note: Carnivore Mortality (continued)	<ul style="list-style-type: none"> effective habitat loss 	11.10.3.2, 11.10.4.2, 11.10.4.3, 11.10.5.1, 11.10.5.2
	<ul style="list-style-type: none"> measures that may be taken to avoid or reduce these impacts 	11.10.3.1, 11.10.3.2, 11.10.7.2, 11.10.10
7 (7-1) Wildlife Issues	Remaining wildlife issues pertaining to carnivores include:	
	<ul style="list-style-type: none"> carnivore attraction 	11.10.2.4, 11.10.4.3, 11.10.4.4, 11.10.5.2,
	<ul style="list-style-type: none"> human/bear encounters 	11.10.2.4, 11.10.4.3, 11.10.4.4, 11.10.4.6
	<ul style="list-style-type: none"> increased carnivore mortality 	11.10.2.4, 11.10.4.4, 11.10.6, 11.10.7.2
	<ul style="list-style-type: none"> noise/sensory impacts 	11.10.4.3, 11.10.5.2
	<ul style="list-style-type: none"> key habitat loss in eskers 	11.10.4.2, 11.10.4.3, 11.10.5.1, 11.10.5.2
	<ul style="list-style-type: none"> loss of prey sources for grizzly bears 	11.10.4.5, 11.10.6.1
	Remaining wildlife issues pertaining to changing water levels include:	
	<ul style="list-style-type: none"> drawdown impacts on habitat 	11.10.3.2, 11.10.4.2, 11.10.4.3, 11.10.6.1, 11.10.7.2, 11.10.8.2
	<ul style="list-style-type: none"> downstream impacts 	11.10.3.2, 11.10.4.2, 11.10.4.3, 11.10.6.1, 11.10.7.2, 11.10.8.2
	<ul style="list-style-type: none"> wildlife impacts from freeze- and break-up timing changes 	11.10.3.2, 11.10.4.2, 11.10.4.3, 11.10.6.1, 11.10.7.2, 11.10.8.2, 11.13

Table 1.II-14 Terms of Reference Pertaining to Section 11.10 (continued)

Final Terms of Reference Requirements		Applicable EIS Subsection
Section	Description	
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	11.10.10
	The EIS must provide a review of relevant research, monitoring and follow up activities since the first diamond mine was permitted in the Slave Geological Province to the extent that the relevant information is publicly available. This review must focus on the verification of impact predictions and the effectiveness of mitigation measures proposed in previous diamond mine environmental impact assessments. In particular the developer must make every reasonable effort to verify and evaluate the effectiveness of any proposed mitigation measures that have been used, or are similar to those used at other diamond mining projects in the Mackenzie Valley.	11.10.10
	The EIS must include a proposal of how monitoring activities at the Gahcho Kué diamond mine can be coordinated with monitoring programs at all other diamond mines in the Slave Geological Province to facilitate cumulative impact monitoring and management. This proposal must also consider reporting mechanisms that could inform future environmental assessments or impact reviews. The developer is not expected to design and set up an entire regional monitoring system, but is expected to describe its views on a potential system. The developer must also state its views on the separation between developer and government responsibilities.	11.10.10

Table 1.II-15 Terms of Reference Pertaining to Section 11.11

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
3.1.3 Existing Environment: Mammals (Excluding Caribou)	Describe species present, and for each describe:	11.11.2.3
	• abundance, distribution, seasonal movements, habitat requirements;	
	• areas of specific habitat use at various life stages;	
	• any sensitive time periods or habitat; and	
	• any other relevant sensitivities or limiting factors, such as behaviours or territory requirements.	
	Describe key species used during traditional harvesting activities.	11.11.2.3
	Describe any known issues currently affecting wildlife (excluding caribou) in the development area, (e.g., contamination of food sources, parasites, disease).	11.11.2.3
5.2.9 Biophysical Subjects of Note: Other Ungulates	Specific information requirements pertaining to other ungulates include:	
	Frequency of muskoxen and moose utilizing the development area and including information such as time of the year, abundance, and other developments that may impact on the same muskoxen population.	11.11.2.3.1, 11.11.2.3.2
	Development components that may cause a sensory disturbance to muskoxen or moose as well as possible sources of contamination and on-site hazards.	11.11.3.2.1, 11.11.4.2.1, 11.11.4.2.2, 11.11.5.2.1, 11.11.5.2.2, 11.11.6.2
	Potential changes to the predator-prey relationship of any potentially affected ungulate population and predicted long-term effects on the population.	11.11.3.2.2
	Any mitigation measures to avoid or reduce these impacts.	11.11.3.2
	Potential development-related changes to harvest levels for each potentially affected ungulate population, e.g., by creating an access via the Mackay Lake road into an area previously inaccessible to vehicular traffic.	11.11.3.2
7 (7-1) Wildlife Issues	Remaining wildlife issues pertaining to other ungulates include:	
	• impacts on muskoxen distribution;	11.11.4
	• impacts on moose; and	11.11.5
	• sensory disturbance to muskoxen.	11.11.4, 11.11.6
	Remaining wildlife issues pertaining to changing water levels include:	
	• drawdown impacts on habitat;	11.11.3.2.2
	• downstream impacts; and	11.11.3.2.2
	• wildlife impacts from freeze- and break-up timing changes.	11.13

Table 1.II-15 Terms of Reference Pertaining to Section 11.10 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	11.11.10
	The EIS must include a proposal of how monitoring activities at the Gahcho Kué diamond mine can be coordinated with monitoring programs at all other diamond mines in the Slave Geological Province to facilitate cumulative impact monitoring and management. This proposal must also consider reporting mechanisms that could inform future environmental assessments or impact reviews. The developer is not expected to design and set up an entire regional monitoring system, but is expected to describe its views on a potential system. The developer must also state its views on the separation between developer and government responsibilities.	11.11.10

Table 1.II-16 Terms of Reference Pertaining to Section 11.12

Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
3.1.3 Existing Environment: Birds and Bird Habitat	Describe species present, and for each describe	
	<ul style="list-style-type: none">abundance, distribution, seasonal movements, and habitat requirements;	11.12.2
	<ul style="list-style-type: none">areas of specific use at various life stages; and	11.12.2
	<ul style="list-style-type: none">any sensitive time periods or habitat	11.12.2
	Describe key species used for traditional harvesting activities	11.12.2.3
	Describe any known issues currently affecting birds and bird habitat in the development area (e.g., contamination of food sources, parasites, disease)	11.12.2
3.1.3 Existing Environment: Biologically Vulnerable Species	Describe any species present or potentially present in the Project area that are listed under the federal Species At Risk Act as Special Concern, Threatened, or Endangered	11.12.2
	Describe any species present or potentially present in the Project area that are under consideration or are listed by the Committee on the Status of Endangered Wildlife in Canada	11.12.2
	For species present, describe the specific locations, critical habitat, residences, population status, limits and size, sensitivities, and other limiting factors	11.12.2.1, 11.12.2.2, 11.12.2.3
5.2.4 Biophysical Subjects of Note: Species at Risk and Birds	The analysis provided in the EIS must be of sufficient detail to allow the Panel, as well as relevant other parties, to discharge its responsibilities under the Species at Risk Act, which includes	
	<ul style="list-style-type: none">determining whether the proposed development (Project) is likely to affect a listed species or its critical habitat;	11.12.3.2, 11.12.7.1, 11.12.7.2, 11.12.7.3, 11.12.8, 11.12.9
	<ul style="list-style-type: none">identifying the adverse effects on the species and its critical habitat;	11.12.3.2, 11.12.7.1, 11.12.7.2, 11.12.7.3, 11.12.8, 11.12.9
	<ul style="list-style-type: none">ensuring that measures are taken to avoid or lessen those effects, consistent with any applicable recovery strategy and action plan; and	11.12.3.2, 11.12.8, 11.12.9
	<ul style="list-style-type: none">monitoring the effects	11.12.11
	For birds, the EIS must provide the following information	
	<ul style="list-style-type: none">all potential disturbances during nesting, rearing, molting, staging and migration (e.g., from construction -activities, air traffic, and downstream effects of water flow changes)	11.12.4.1, 11.12.4.2, 11.12.5.1, 11.12.5.2, 11.12.6.1, 11.12.6.2, 11.12.7.1, 11.12.7.2

Table 1.II-16 Terms of Reference Pertaining to Section 11.12 (continued)

Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
5.2.4 Biophysical Subjects of Note: Species at Risk and Birds (continued)	<ul style="list-style-type: none"> the potential for increased predation facilitated by the development 	11.12.4.2, 11.12.5.2, 11.12.6.2, 11.12.7.2
	<ul style="list-style-type: none"> identification and quantification of all contaminant exposure routes and possible changes in contaminant levels, particularly in harvested species 	11.12.4.2, 11.12.5.2, 11.12.6.2, 11.12.7.2
	<ul style="list-style-type: none"> identification of all potential alterations to bird habitat, including loss of habitat within the mine footprint, the creation of new habitat, and any downstream effects of water flow changes, with particular emphasis on waterfowl 	11.12.4.1, 11.12.4.2, 11.12.5.1, 11.12.5.2, 11.12.6.1, 11.12.6.2, 11.12.7.1, 11.12.7.2
7 (Table 7-1) Wildlife Issues	Remaining wildlife issues pertaining to birds include	
	<ul style="list-style-type: none"> disturbance; 	11.12.4.1, 11.12.4.2, 11.12.5.1, 11.12.5.2, 11.12.6.1, 11.12.6.2, 11.12.7.1, 11.12.7.2
	<ul style="list-style-type: none"> exposure to contaminants; and 	11.12.4.2, 11.12.5.2, 11.12.6.2, 11.12.7.2
	<ul style="list-style-type: none"> habitat impacts 	11.12.4.1, 11.12.4.2, 11.12.5.1, 11.12.5.2, 11.12.6.1, 11.12.6.2, 11.12.7.1, 11.12.7.2
	Remaining wildlife issues pertaining to changing water levels include	
	<ul style="list-style-type: none"> dewatering impacts on habitat; 	11.12.3.2
	<ul style="list-style-type: none"> downstream impacts; and 	11.12.3.2
	<ul style="list-style-type: none"> wildlife impacts from freeze- and break-up timing changes 	11.12.3.2
3.2.7 Follow-up Programs	The EIS must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development, for the purpose of recognizing and managing unpredicted problems. The EIS must explain how the developer proposes to verify impact predictions. The impact statement must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.	11.12.11
	The EIS must include a proposal of how monitoring activities at the Gahcho Kué diamond mine can be coordinated with monitoring programs at all other diamond mines in the Slave Geological Province to facilitate cumulative impact monitoring and management. This proposal must also consider reporting mechanisms that could inform future environmental assessments or impact reviews. The developer is not expected to design and set up an entire regional monitoring system, but is expected to describe its views on a potential system. The developer must also state its views on the separation between developer and government responsibilities.	11.12.11

Table 1.II-17 Terms of Reference Pertaining to Section 11.13

Final Terms of Reference Requirements		Applicable EIS Sub-section
Section	Description	
5.2.7 Biophysical Subjects of Note: Climate Change Impacts	General requirements pertaining to climate change impacts include:	
	• the EIS must examine and evaluate the development (Project) as a potential greenhouse gas contributor	11.13.3
	• it (the EIS) must also examine potential climate change effects on the proposed development (Project)	11.13.4
	• the EIS must examine quantity of greenhouse gas emissions, the use of alternative energies, energy conservation initiatives, and linkages between greenhouse gas prevention and other environmental opportunities	11.13.3, 11.13.6
	• climate change scenarios and their impacts on the development, as well as climate variability and its impacts (e.g., on the operation of the ice road). This analysis must include the effect of changing extremes, such as 100-year rainfall events)	11.13.4
	• the EIS must include an evaluation of the potential for the development to create a local change in climate at the mine site	11.13.4
	• the EIS must address climate change impacts in combination with development related impacts on any of the valued components	11.13.4
	• the EIS must outline any specific adaptations of the development to climate change, as well as management options for a variety of future climate change effect scenarios	11.13.4, 11.13.6
	• the EIS must provide a detailed analysis of alternatives to transporting goods via road to the development site (as the ice road and the traffic on it contribute to greenhouse gas emissions and are vulnerable to climate change at the same time)	11.8, 11.13.4
	• the EIS must provide a detailed account of energy conservation initiatives on-site, addressing subjects such as vehicle idling policies, use of waste oil for heating, etc. Describe how this compares to energy conservation plans at other diamond mines	11.13.4, 11.13.6
	Specific requirements pertaining to climate change impacts include:	
	• describe the quantity of emissions (in absolute terms, as proportion of NWT industrial emissions, and as proportion of NWT total emissions)	11.13.3
	• describe project alternatives, including greenhouse gases offsetting options and technology innovations (including descriptions of alternative energy initiatives on-site)	11.3
	• describe linkages between greenhouse gas prevention and other environmental opportunities (e.g., air and water pollution reduction, sustainable development)	11.13.6
7 (Table 7-4) Other Issues	Other issues pertaining to climate change include:	
	• impact on project design	11.13.4
	• transportation alternatives	11.13.4, 11.13.6
	• energy alternatives	11.3
	• - creation of microclimate at the mine site	11.13.4

Table 1.II-18 Terms of Reference Pertaining to Section 12

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
4.1.5 Family and Community Cohesion	Money management and changes in lifestyle choices.	12.3.4.4.4, 12.3.5, 12.5.6, 12.6.2.3, 12.6.3.3, 12.8.2.1, 12.8.4
	Provide an analysis of alternatives to the conventional two-week rotation.	12.4.2.5, 12.6.1.3.1, 12.6.2.2.2, 12.7.1.2.2, 12.8.4.1.1
	Address potential for the influx of outside workers placing increasing demands on community social fabric and facilities.	12.6.1.3, 12.6.2.4, 12.7.2.2, 12.7.2.8, 12.8.4.1.2
	Absence of workers from their family.	12.6.2.2, 12.6.2.4, 12.6.2.7, 12.6.3.2, 12.8.7
	Decreased family cohesion, including breakup of families.	12.6.1.3.1, 12.6.1.5.1, 12.6.2.2.1, 12.6.2.3.2, 12.6.2.4, 12.6.2.6, 12.8.4.4
	Absence of leaders, volunteers, etc. from communities.	12.3.4.4.6, 12.5.6, 12.6.2.2, 12.6.3.3.1, 12.6.3.6.2, 12.7.2.1.2, 12.7.2.5, 12.7.2.7, 12.7.2.8.2, 12.8.7
	Changes in levels of substance abuse.	12.3.4.4.7, 12.3.5, 12.6.2.3.1, 12.6.2.3.2, 12.6.3.3.1, 12.8.4.3

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
4.1.5 Family and Community Cohesion (continued)	Changes in traditional practices and levels of participation in traditional practices.	12.3.4.4.6, 12.3.4.8.4, 12.3.4.8.5, 12.3.4.8.6, 12.3.5, 12.6.2.2.1, 12.6.2.4, 12.6.3.3.1, 12.7.1.2.1, 12.7.4.2.1, 12.7.5.3, 12.7.5.7.2, 12.8.5, 12.8.6.3, 12.8.7
	Provide an outline as to how a cooperative approach to social, economic, and cultural problems related to the proposed development may be facilitated.	12.7.1.2.1, 12.8.6.4, 12.9.1
	Determine how the proposed development might magnify existing vulnerabilities of the community.	12.3.4.4.7, 12.6.3.3.1, 12.6.3.3.2, 12.8.4.3, 12.8.4.4
	Isolate aspects of the proposed development that might add to the "impact load" being felt by potentially affected communities.	12.7.1.2.1, 12.8
	Report on indicators of cultural resilience for affected communities, such as practice of language, story telling, and cultural activities, as well as consumption of country food.	12.3.4.4.1, 12.3.4.6.1, 12.3.4.8.3, 12.3.5, 12.6.2.2.1, 12.6.2.4, 12.7.5.2, 12.7.5.3, 12.7.5.5, 12.7.5.7.2, 12.8.5.1, 12.8.5.3, 12.8.6.1, 12.8.6.3, 12.8.7
	Provide a discussion concerning the development of a Human Resources Management Plan and any programs that will be offered at the mine site to identify and mitigate social problems.	12.4

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
4.1.5 Family and Community Cohesion (continued)	Impacts related to population in-and out-migration.	12.2, 12.3.4.3, 12.3.5, 12.6.1.3.1, 12.6.1.3.2, 12.6.2.3.2, 12.6.2.4, 12.7.1.2.1, 12.7.2.2, 12.7.2.8.2, 12.8.3.2.1, 12.8.3.4, 12.8.4.1.2
	Decreased access to health care.	12.3.4.4.4, 12.3.4.4.7, 12.3.4.7.1, 12.3.4, 12.3.5, 12.4.15, 12.7.2.2.2
	Increased housing pressures.	12.3.4.1.1, 12.3.4.4.7, 12.3.4.6.7, 12.3.5, 12.6.3.3.1, 12.8.4.3
	Increased crime rates.	12.3.4.4.6, 12.3.4.4.7, 12.3.5, 12.6.2.3.1, 12.6.3.3, 12.8.4.3
	Decreased access to childcare.	12.3.4.6.1, 12.6.1.3.1, 12.7.5.2.1
	Increased social divisions within or between communities.	12.6.3.3, 12.8.4.3, 12.8.6.3
	Decreased public safety.	12.3.4.4.7, 12.3.4.7.1, 12.7.2.3.1
	Decreased access to education and decreased education completion levels.	12.3.4.3, 12.3.4.6.1, 12.3.5, 12.6.3.2.1, 12.6.3.2.2, 12.8.6.2
	Decreased physical, mental, and cultural well-being of northern mine workers and northern mine workers' families.	12.3.4.4, 12.3.5, 12.6.2.2.1, 12.7.1.1.2, 12.8.6.3

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
4.1.5 Family and Community Cohesion (continued)	Provide a comparison of the likely relative distribution of beneficial and adverse cultural and social impacts among the different potentially affected communities.	12.3.5, 12.6.3.2, 12.6.3.5, 12.6.3.6.1, Annex K
	Describe the required social service networks to support community health and wellness (pressures on social services).	12.3.4.4.6, 12.3.4.7, 12.7.5.2.1, (see also Annex K)
	Impacts of the proposed development and other past, present and reasonably foreseeable developments on political and social development, cultural values, traditional practices and language in potentially affected communities.	12.6.2.4, 12.7.5, 12.8.2, 12.8.4, 12.8.5, 12.8.7, 6.6.2
	Provide a description, for each identified potential effect, as to how the development may effect valued social and cultural components: <ul style="list-style-type: none">• at the regional level;• at the local level for each potential-affected community; and• among particularly vulnerable sub-populations within potentially affected communities, such as women, children, and elders.	12.3.4.4.7, 12.5.5.2, 12.6.1.8, 12.6.1.9.2, 12.6.2.6, 12.6.2.7, 12.6.3.3, 12.6.3.5, 12.6.3.6, 12.7.1.4, 12.7.1.6, 12.7.2.2.2, 12.7.2.3.2, 12.7.2.4.2, 12.7.2.6, 12.7.2.8, 12.7.3.6, 12.7.4.3, 12.7.4.4, 12.7.4.6.2, 12.7.5.2.2, 12.7.5.3.2, 12.7.5.4.2, 12.7.5.5, 12.7.5.7, 12.8.4.3, 12.8.4.4, Appendix K.I

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
4.1.6 Social Disparity within and Between Communities	State the criteria and relevant indicators for analyzing increased social disparity.	12.6.3.1.3
	Address disparity not only between individuals but also between communities.	12.6.3.2
	Describe the engagement with potentially affected communities so that there is adequate consideration of socio-economic issues, including the specific concerns raised; mechanisms for their resolution, and any aspects of project design intended to accommodate concerns.	12.1.1, 12.3.4.4.6, 12.5.2, 12.5.4, 12.5.5.2, 12.6.2.2, 12.6.2.4, 12.6.2.5, 12.6.3.1.2, 12.6.3.5, 12.7.1.3.2, 12.7.4.2.2, 12.7.5.3, 12.7.6, 12.8.6.4, 12.9, Section 4
	Provide a separate analysis for each potentially affected community addressing vulnerabilities, community engagement, and innovative solutions that may indirectly offset the direct impacts from the proposed development.	12.5.5.2, 12.5.7.2, 12.8.4.4, 12.8.5.3, 12.8.6, 12.9, Section 4, Annex K, Appendix K.I
4.1.7 Long Term Social, Cultural and Economic Effects	Provide a summary of the long-term social, cultural, and economic effects.	12.2, 12.6.1.8
	Provide an analysis of projected benefits, actually accrued benefits, and how the proposed development may improve on previous developments.	12.6.1, 12.8.3.1, 12.8.3.2, 12.8.6.2, 12.8.7, Appendix 12.II
	Address the contribution of the development to the cumulative long term effects on communities from an increasing pace of development, considering communities' abilities to respond to, plan for and benefit from development.	12.3.3, 12.3.4.6.2, 12.7.4.2.2, 12.8.2.3, 12.8.3.1.1, 12.8.3.3, 12.8.7
	Address the lack of capacity for monitoring by communities and government.	12.7.2.4, 12.9

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
4.1.7 Long Term Social, Cultural and Economic Effects (continued)	Address the concern regarding single resource dependency – economic over-reliance on one resource.	12.8.6.1
	Increased demands on social, cultural and economic services (e.g., medical transportation, emergency services, hospital services, education, child care, social service, and public health services).	12.3.4.5.3, 12.3.4.6, 12.3.4.7, 12.7.2, Annex K
	Address the likely level of in- and out-migration as a result of the development, including out-migration of skills, and the likely economic impacts of in- and out-migration among potentially affected communities.	12.6.1.3, 12.6.1.8, 12.6.2.3, 12.6.2.5, 12.6.2.7, 12.7.2.2, 12.7.2.7, 12.8.2.1, 12.8.2.4, 12.8.3.2.1, 12.8.3.4, 12.8.4.1.2, 12.8.4.1.3
	Health effects from changed diet (e.g., less country food).	12.3.4.4.1
	Effects associated with increasing disposable income and a larger reliance on the wage economy.	12.3.4.4.7, 12.3.5, 12.5.7.1, 12.6.2.3.1

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
4.1.7 Long Term Social, Cultural and Economic Effects (continued)	Address sub-populations within potentially affected communities that are more vulnerable to potential economic impacts.	12.3.4.4.7, 12.3.5, 12.4.3, 12.6.1.3.1, 12.6.2.2.1, 12.6.3.1.2, 12.6.3.3.1, 12.6.3.3.2, 12.6.3.6.2, 12.7.1.3.1, 12.7.1.3.2, 12.7.2.2.2, 12.8.4.3, 12.8.4.4
	Provide an estimate of required contractor and subcontractor goods and services required through the different stages of the project life cycle, and associated direct and indirect economic effects (e.g., local and regional income multipliers).	12.6.1.2.2, 12.6.1.5, 12.6.1.6, 12.7.1.2, Appendix 12.II
	Provide a summary of the opportunities for - and capacities of - local, regional and Territorial businesses to compete for the right to supply required goods and services, both directly to the proposed development, as well as to meet new demand created by economic growth spurred by the development.	12.4.17, 12.4.18, 12.6.1.4.2, 12.6.1.5.2, 12.6.1.5.3, 12.6.3.4, 12.7.1.1.3, 12.7.1.2.1, 12.7.1.2.2, 12.7.1.6.2, 12.8.2.4, 12.8.3.1, 12.8.3.1.1, 12.8.3.2.2, Appendix 12.II
	Provide estimates of what percentage of goods and services might feasibly be provided by northern businesses, and discuss any plans, commitments or strategies the developer has for maximizing this percentage.	12.4.17, 12.6.1.5, 12.7.1.2.1, 12.7.1.2.2, Appendix 12.II
	Provide an assessment of how the development will contribute to opportunities to diversify the economic base at the local, regional, and Territorial level including the production and supply of new goods and services at the local and regional levels.	12.7.1.2.2, 12.8.3.1, 12.8.3.1.1, 12.8.3.1.3, 12.8.3.2, 12.8.7, Appendix 12.II
	Provide an assessment of other potential economic uses of the area that may be affected by the proposed development, including opportunity costs.	12.6.2.4, 12.7.3.2, 12.7.3.3.1, 12.7.3.6.2, 12.7.4.4, 12.7.4.6.2, 12.7.5.3, 12.8.1, 12.8.3.2.1, Appendix 12.II

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
4.1.7 Long Term Social, Cultural and Economic Effects (continued)	Address increased government revenues at the local, Territorial and national levels, including at minimum an estimate of total expected direct and indirect taxes to be paid to each level of government as a result of Gahcho Kué activities.	12.6.1.6, 12.6.1.8, Appendix 12.II
	Increased employment numbers, including a prediction of employment multipliers, and the development's estimated effects on employment levels in potentially affected communities.	12.4.2, 12.6.1.2, 12.6.1.3, 12.6.1.8, Appendix 12.II
	Increased local income and disposable income levels (identify income multipliers where possible).	12.5.5.3.1, 12.6.1.2, 12.6.1.8, Appendix 12.II
	Impacts on local and regional inflationary pressure and the cost of living.	12.6.1.4, 12.6.1.8, 12.6.1.9.2, 12.6.3.2, 12.6.3.5, 12.7.1.2.1, 12.8.2.1, 12.8.2.4, 12.8.4.3, Appendix 12.II
	Impacts on other types of economic activity, with emphasis on the traditional economy.	12.3.4.4.6, 12.6.2.2.1, 12.6.2.2.3, 12.6.3.3.1, 12.6.3.3.2, 12.8.4.1.1, 12.8.6.1, 12.8.6.3, 12.8.7, Appendix 12.II
	Describe how the economic effects identified will be distributed among potentially affected communities versus other areas.	12.6.1.2.2, 12.6.3.3.2, 12.8.4.1.2, 12.8.4.3, Appendix 12.II
	Provide an overview of proposed follow up programs to verify the impact predictions and to monitor the effectiveness of any mitigation measures which must include an evaluation of possible joint monitoring of cumulative effects.	12.5.2.1, 12.7.2.4, 12.9

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
5.3.1 Employment Training and Economic Development	Provide an analysis of training and education needs for mine employment and mine worker advancement including an analysis of how the proposed development might affect training and education in the potentially affected communities in general.	12.4.14, 12.5.6, 12.7.1.3.2, 12.7.1.4, 12.8.4.2
	Assess the current capacity of training programs and of Aboriginal and northern people to engage in these training programs.	12.5.6, 12.7.1.3.2, 12.7.1.4
	Describe all employment requirements by skills category over the life of the project.	12.4.3, 12.4.4, 12.4.5, 12.4.6, 12.5.6, 12.7.1.1.3, 12.7.1.2.1, 12.7.1.3, 12.7.1.4, 12.7.1.6
	Describe which employees will be direct versus contractor employees, and describe whether and how the developer will require its contractors to have similar commitments to maximizing regional and Aboriginal employment.	12.4.3, 12.4.6, 12.4.17, 12.5.6, 12.6.1.3.3, 12.6.1.7, 12.6.3.3.1, 12.6.3.4, 12.7.1.1.3, 12.7.1.2.2, 12.7.1.3.2, 12.7.1.5
	Describe where the likely labour pool “draw” is going to be from for this development, including an assessment of the available labour pool, at varying geographic scales, to meet the direct mine labour requirements, including: individual communities and the Akaitcho and Tlicho regions as a whole, Territorial, and beyond the NWT.	12.3.4.2, 12.3.5, 12.7.1.3.1, 12.8.2.3, 12.8.3.1, 12.8.3.2
	Describe any identified barriers to employment, advancement and retention for Northern workers (with particular emphasis on residents of smaller potentially affected communities and Aboriginal people), including minimum skill requirements, hiring policies related to criminal records or substance addictions, availability of willing employees, and lack of training opportunities for community members.	12.3.4.2, 12.6.1.3.1, 12.6.3.5, 12.7.1.3.1, 12.7.1.3.2
	Describe the requirements for any training, education, and other improvements necessary to maximize employment of residents of potentially affected communities in the workforce of the mine, and compare these requirements to existing training initiatives available in the NWT.	12.4.3, 12.4.4, 12.4.6, 12.4.8, 12.4.9, 12.4.17, 12.4.18, 12.6.3.4, 12.7.1.3.1, 12.7.1.3.2

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
5.3.1 Employment Training and Economic Development (continued)	Describe requirements for any training, education or other improvements necessary to maximize engagement of businesses of each potentially-affected community in the economic benefits accruable from the development.	12.4.14, 12.4.18, 12.5.6, 12.6.1.3.1, 12.6.1.5.1, 12.7.1.2.1, 12.7.1.4, 12.7.1.5, Section 1
	Describe the developer's strategies, plans or commitments with respect to maximizing the proportion of direct mine employees that are NWT residents, Aboriginal persons, and residents of potentially affected communities (e.g., through hiring policies, training initiatives).	12.4.2.4, 12.4.3, 12.4.6, 12.4.7, 12.4.8, 12.4.9, 12.4.14, 12.5.6, 12.6.1.9.2, 12.6.2.4, 12.6.2.5, 12.6.3.4, 12.7.1.1.3, 12.7.1.2.2, 12.7.1.3.2, 12.7.1.4, 12.7.1.5, 12.8.6.4, Section 1
5.3.2 Impacts on Tourism Potential and Wilderness Character	Loss of tourism potential.	12.7.3, 12.8.3.2.1, 7, 11.10, 11.11, 11.12
	Impacts from air traffic.	12.7.4.3.3, 12.8.3.3
	Loss of wilderness character.	12.7.3, 12.7.4.6.2, 12.8.2.1
	Decreased hunting success and / or wildlife sightings.	12.3.4.8.4, 12.3.4.8.6, 12.3.5, 12.6.2.2.1, 12.7.3.2, 12.7.3.3, 12.7.3.6.2, 12.7.5.3, 12.8.6.3

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
5.3.3 Demands on Infrastructure	Infrastructure pressures on regional centres from in-migration.	12.7.2.3, 12.7.2.7
	Shortage of locally available labour for community services.	12.7.2.2
	Assess the costs for government to provide service increases and maintain adequate physical infrastructure.	12.7.2.3
	Monitoring and regulatory capacity of government.	12.7.2.4
	Rotational schedule resulting in absence of critical volunteers (e.g., volunteer fire fighters).	12.7.2.5
	Provide an assessment of the socio-economic costs and who will bear them of any increases in physical and social service infrastructure predicted to be required which must include discussion of likely in- and out-migration scenarios to which the development will contribute.	12.7.2
	Describe lessons learned from economic, cultural and social impacts of previous mine developments in the NWT and the North, and how they have been incorporated into the impact identification, prediction and mitigation for the development which must describe any plans, strategies or commitments designed to mitigate the identified adverse impacts.	12.7.1.2, 12.7.2.3, 12.7.2.7
5.3.4 Culture, Heritage and Archaeology	Effects on the Lockhart River system, including the original Łutsek'e settlement at Artillery Lake and Our Lady of the Falls taking into consideration that they are closely related to several Key Lines of Inquiry (e.g., caribou and increasing social disparity).	12.7.5.3.2
	Reduced involvement in communal activities including communal hunts.	12.7.3.3.4
	Address the potential for growing sense of disempowerment.	12.3.4.4.6, 12.6.2.2.3, 12.6.2.4
	Increased out-migration and skills drain to regional centres.	12.8.4.1.2
	Reduced harvesting success and loss of traditional skills.	12.8.6.3
	Loss of language.	12.8.5.1
	Loss of spiritual connections and knowledge.	12.7.5.1.4
	Physical impact on heritage and archaeological sites.	12.7.5.1.4
	Loss of spiritual value of place.	12.7.5.1.4
	Lost of aesthetic value of place.	12.7.5.1.4
	Hunting restrictions around mine sites.	12.4.12
5.3.6 Proposed National Park	Provide maps showing the exact location of the proposed development in relation to the National Park preliminary area of interest.	Figure 12.7-3, Figure 12.7-4

Table 1.II-18 Terms of Reference Pertaining to Section 12 (continued)

Final Terms of Reference Requirements		Applicable EIS Sub-Section
Section	Description	
6.1.1 Integrated Project-Specific Analysis and Sustainability	Evaluate the extent to which the proposed development makes a positive overall contribution towards environmental, social, cultural, and economic sustainability.	12.8.6, 12.8.7
	The proposed development's contribution to sustainability and effects on future generations must be evaluated on the basis of:	12.8
	<ul style="list-style-type: none">the extent to which it makes a positive overall contribution towards environmental, social, cultural and economic sustainability;	12.8.6, 12.8.7
	<ul style="list-style-type: none">how the planning and design take into account its effects on achieving sustainable development;	12.8.6
	<ul style="list-style-type: none">to what degree it promotes the present generation's ability to meet its needs without compromising the ability of future generations to do so;	12.8.6.1
	<ul style="list-style-type: none">how monitoring, management and reporting systems have incorporated indicators of sustainability; and	12.7.2.4.1, 12.9
	<ul style="list-style-type: none">the views of stakeholders and participants in the environmental impact review process.	12.5.4, 12.8.6.1, 4

APPENDIX 1.III

SUSTAINABLE DEVELOPMENT POLICY



Policy Statement

Sustainable Development

De Beers Canada Inc.* is committed to operating in accordance with the principles of sustainable development. This means ensuring that activities undertaken today meet the needs of the present without compromising the ability of future generations to meet their own needs. This requires all employees and contractors to take account of the longer term economic, social and environmental implications of their decision making and actions – not just for business but for society at large.

De Beers Canada will apply the following principles in all of its activities and undertakings:

General

Governance - Ensure effective corporate social responsibility principles are embedded into De Beers Canada's governance processes, integrating safety, health, environmental, social, community and economic practices.

Shared Responsibility – Ensure De Beers Canada employees, contractors, and agents are aware of our sustainable development commitments and foster a culture of personal accountability based on mutual caring and respect for the environment, our employees and communities in which we operate.

Management Systems – Ensure effective implementation and alignment of management systems compliant with appropriate international standards in areas pertaining to this policy.

Continual Improvement – Set objectives and targets for continuous improvement in areas that include occupational health and safety, prevention of pollution, waste generation, mineral waste management, progressive rehabilitation, biodiversity conservation, energy use, greenhouse gas emissions, and water use.

Risk Management – Identify, assess and manage significant risks to the environment, workplace safety and health, community engagement, and operational integrity.

Compliance - Maintain compliance with all relevant legal requirements, formal commitments, and DeBeers policies, and standards, including the De Beers Family of Companies Purpose, Vision, Values and Principles, exceeding them where appropriate.

Assurance – Regularly measure and review our progress towards meeting this policy and reporting publicly regarding our performance, including periodic independent audits.

Transparency - Ensure activities are conducted in an open and transparent manner.



Policy Statement

Sustainable Development

Environmental

Ecosystem Stewardship – Be responsible and vigilant stewards of the lands and waters we occupy through the application of a precautionary approach and advanced principles in pollution prevention and adaptive management.

Impact Assessment – Ensure impact assessments are undertaken prior to beginning any mining activity, respecting multi-stakeholder viewpoints and traditional knowledge.

Environmental Knowledge – Implement a balanced approach in applying innovative technologies and scientific advances with traditional knowledge.

Mine Closure – Ensure each mine and facility has a decommissioning plan that addresses reducing long term local environmental and community impacts, and that these plans are periodically updated together with provisions for implementation of the final costs of closure.

Occupational Health and Safety

Zero Harm – Provide a safe and healthy workplace free from injury and illness by fostering and maintaining a culture of shared responsibility based on mutual caring and respect, and the belief that injury and illness can be prevented.

Leadership and Commitment - Enable a culture that values personal accountability and commitment to the prevention of injury and illness through continual learning, mentoring, and cultivating positive attitudes towards risk.

Social

Stakeholder Engagement - Communicate openly with governments, employees, local communities and the public, to sustain mutual understanding of environmental, social and economic issues, including the solicitation of the views from communities of interest and stakeholders.

Aboriginal Peoples – Ensure respectful, timely and inclusive engagement with Aboriginal peoples and respect for their knowledge, values, customs and culture wherever we work, in accordance with our “Working with Aboriginal Communities Policy” and “Community Policy and Procedure”.

Human Potential – Enable the development of human potential through ongoing learning that ensures equal opportunity and human rights, respecting gender, race, social, and religious or disability differences.

Social Investment – Make real and sustainable contributions to capacity building and the development of transferable skills in communities where we operate.



Policy Statement

Sustainable Development

Economic

Ethical Conduct – Demonstrate honesty and integrity by applying the highest standards of moral and ethical conduct, in accordance with De Beers' Code of Business Conduct and Ethics.

Ethical Financing – Promote ethical financing wherever we operate, with zero tolerance for bribery, corruption, financing of terrorist activities, money laundering, or activities related to conflict diamonds that promote human suffering.

Product Stewardship – Build consumer confidence by promoting sustainable development across the value chain.

Economic Development – Make real and sustainable contributions to local and national economic development that encourages local empowerment, including local recruitment, purchasing and investment.

Shareholder Value – Employ our shareholder's capital effectively and efficiently.

* The term De Beers Canada means De Beers Canada Inc., and includes the Corporate, Exploration and Mining Divisions.

APPENDIX 1.IV

NORTHWEST TERRITORIES BUSINESS POLICY



Northwest Territories **Business Policy**

October 2008







Introduction

The De Beers Northwest Territories (NWT) Business Policy is based upon the company's commitment to the three pillars of sustainable development; economic, social and environmental sustainability.

This policy sets out how De Beers will contribute to the development of a sustainable economy in the NWT through the provision of business opportunities.

Policy Statement

De Beers Canada's projects in the NWT will provide long-term opportunities for Northern businesses.

De Beers will do business in a way that will maximize its contribution to the local economy and to the social development of the communities in the region.

Our Commitment

Through the implementation of our Business Policy, we will:

- Establish and maintain a Business Development Superintendent who will work with Aboriginal and NWT businesses to initiate, develop, grow, and support their successful participation in our projects.
- Ensure that Aboriginal and NWT business participation in the operation of the Snap Lake Mine is maximized, giving special consideration to building business capacity in the primary communities.
- Inform Aboriginal and NWT businesses of our business opportunities first: positioning them to provide competitive bids to our projects.
- Develop a Business Registry for Northern and Aboriginal businesses to pre-qualify themselves for business opportunities.
- Match contract sizes with Aboriginal and NWT business capabilities and capacities, where possible.
- Adjust contract durations to support new or expanded business development in the NWT, where feasible.
- Identify possible joint venture opportunities for Aboriginal businesses.
- Work with stakeholders to minimize the financial, technical and capacity issues which have potential to limit the participation of Aboriginal and NWT businesses.
- Provide assistance to Northern businesses to assess the opportunities that the Snap Lake Mine will create and in the development of business plans that present price competitive options for De Beers' consideration.
- Facilitate access to established sources of publicly available economic development funds for new and existing NWT businesses.
- Coordinate post-award analyses for unsuccessful Northern and Aboriginal bidders to communicate areas of improvement in the commercial and/or technical aspects of the final evaluation.
- Establish hiring priorities for De Beers and its contractors that will support the development and growth of a skilled workforce among Aboriginal and NWT businesses.
- Report annually on the procurement of goods and services and the extent to which those have been purchased from Aboriginal and NWT businesses.



Principles

De Beers will work with Aboriginal and NWT businesses to develop sustainable and equitable relationships based on the following principles:

- Goods and services procured from businesses must meet mining industry service and quality standards.
- Development of long-term sustainability and business capacity will be a fundamental consideration when entering into business relationships with Aboriginal and/or NWT businesses.
- Our work with Aboriginal and/or NWT business will support the development of technical and business skills and capacities that are transferable to other industries.
- De Beers will treat all companies fairly regardless of size or capability.
- De Beers will carry out business in a professional manner and will abide by all northern business codes, practices and guidelines.
- Financing requirements for the provision of goods or services to the Snap Lake Mine will be the responsibility of the contracted business.
- All contractors will be required to understand and comply with De Beers' Safety, Health and Environmental Management Systems.
- All contractors will be required to understand, comply with, and report on their success regarding northern hiring priorities which have been established in the Socio-Economic Monitoring Agreement for the Snap Lake Mine between De Beers and the Government of the Northwest Territories.

Definitions

The following definitions reflect those agreed to between De Beers and the Government of the Northwest Territories in our Socio-Economic Monitoring Agreement for the Snap Lake Mine.

Aboriginal

Aboriginal means any Indian, Inuit or Métis individual who:

- a) originated in the NWT; or
- b) is a descendant of an Aboriginal individual originating in the NWT.

Aboriginal Business

A business that complies with the legal requirements to carry on business in the NWT, and meets one of the following criteria:

- a) is a limited liability company with at least 51 percent of the company's voting shares beneficially owned by one, or more, Aboriginal(s) resident in the NWT;
- b) is a co-operative with at least 51 percent of the co-operative's voting shares beneficially owned by the Aboriginals resident in the NWT;
- c) is a sole proprietorship, or the proprietor of which is an Aboriginal resident in the NWT; or
- d) is a partnership, the majority interest in which is owned by one, or more, Aboriginal(s) resident in the NWT and in which the majority of benefits, under the partnership agreement, accrue to such Aboriginal(s) and complies with the following criteria:
 - maintains a permanent place of business in the NWT;
 - maintains a manager, who is an NWT resident; and
 - undertakes the majority of its management and administrative functions (related to its operations in the NWT) in the NWT.



Contractor

Means each and every contractor and sub-contractor which supplies goods and services to De Beers for the Snap Lake Mine.

NWT Business

- An Aboriginal business; or
- A business that complies with the legal requirements to carry on a business in the NWT, and complies with all of the following criteria:
 - maintains a permanent place of business in the NWT;
 - maintains a manager who is an NWT resident;
 - undertakes the majority of its management and administrative functions (related to its operations in the NWT) in the NWT; and
 - is a business in which NWT residents have substantial management authority or in which NWT residents have significant ownership or working interest.

NWT Resident

An NWT resident is any individual who primarily resides in a self-contained domestic establishment (other than a residence at a remote work site) in the NWT, when not in full-time attendance at an educational institution outside the NWT.

Primary Communities

Means the communities described in the De Beers Snap Lake Diamond Project Environmental Assessment, submitted to the Mackenzie Valley Environmental Impact Review Board, dated February 2002. These include the communities of Lutsel K'e, N'dilo, Dettah, Gameti, Whati, Behchoko, Wekweeti, Yellowknife, and the North Slave Métis Alliance population.



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APPENDIX 1.V

HUMAN RESOURCE MANAGEMENT POLICY

HUMAN RESOURCE MANAGEMENT

De Beers Canada Inc. is committed to building a strong organizational culture that is shaped by empowered employees and inspirational leaders who demonstrate a deep belief in the company's purpose, vision and values.

This will be achieved through:

- developing human resource management practices that are effective and flexible, inspire continuous improvement and support the company's business strategy;
- recognizing and rewarding employees' contributions to the business and remaining alert and responsive to their expressions of concerns and needs;
- ensuring that sound corporate governance is in place and adhering to legislative employment compliances (inclusive of the exclusion of child or forced labour);
- valuing and embracing diversity and inclusion as an element that enhances organizational strength;
- encouraging and supporting team concepts and team building techniques;
- generating a climate of opportunity and challenge where individuals can fulfill personal goals and aspirations as well as meeting those of the company;
- fostering a clear understanding with each employee of his or her job, accountabilities and expected standards of performance through ongoing constructive feedback and regular and meaningful performance reviews;
- developing a remuneration and rewards philosophy which encourages the company's desired values and behaviours while supporting the business strategy;
- nurturing a climate of open and frank communication by and between all levels of the organization; and
- making all reasonable efforts to achieve a high quality of work-life balance.

We are constantly striving to realign and refocus Human Resource strategic business imperatives with a view to improving the Return on Investment (ROI).

To learn more about human resource management in De Beers Canada Inc. and to access the company's human resource policies, employees are invited to visit "Human Resources" on the De Beers Canada Inc. intranet.

To learn more about labour, employment and human rights law, employees are invited to look at:

- Employment standards provides minimum standards of employment for employers and employees in the workplace. The various provincial standards can be located on websites: <http://www.rhdcc.gc.ca/asp/gateway.asp?hr=/en/lp/lo/lswel/provincial.shtml&hs=lxn> and http://www.rhdcc.gc.ca/asp/gateway.asp?hr=/en/lp/spila/clli/eslc/01Employment_Standards_Legislation_in_Canada.shtml&hs=lxn
- The Canadian Human Rights Programme can be located on websites: http://www.patrimoinecanadien.gc.ca/progs/pdp-hrp/canada/freedom_e.cfm and http://www.pch.gc.ca/progs/pdp-hrp/links-liens/index_e.cfm.

APPENDIX 1.VI

WORKING WITH ABORIGINAL COMMUNITIES POLICY

WORKING WITH ABORIGINAL COMMUNITIES

De Beers Canada* acknowledges the status of aboriginal people of Canada and their constitutionally entrenched rights. In working with aboriginal people, De Beers Canada will ensure that this status and their rights are respected, and will work to strike a balance between these considerations and other economic, social and environmental responsibilities.

De Beers Canada will apply the following principles in all of its activities and undertakings with aboriginal people in Canada:

It is recognized that aboriginal people have a historical occupation, usage and reliance on the land as well as a respect for the land and environment, which is enshrined in their traditions and practices. Arising from this is a far-reaching wisdom and knowledge about the land and natural environment. This knowledge will be actively solicited and considered in the planning and management of De Beers Canada's activities.

De Beers Canada believes that meaningful consultation and communication regarding activities, programmes and developments are necessary. Consultation forms the basis for relationships and the De Beers Canada process will be:

- timely (adequate notice; time to evaluate and respond)
- informative (sufficient detail and explanation to allow understanding)
- comprehensible (presented in an understandable manner)
- ongoing (process acknowledges feedback; reports on how used)
- responsive (changes based on feedback where relevant/possible)

De Beers Canada believes that projects must benefit and add to the sustainability of local communities. Socio-economic development will be a primary focus through community participation in employment and business opportunities in all stages of the mineral development process from exploration, evaluation, mine development, production and closure.

De Beers Canada's key corporate values of integrity, reliability and honesty in association with genuine respect for individuals and communities, non-discrimination, best practice standards, health and safety, protection of the environment, teamwork and innovation will be promoted at all times.

* Unless otherwise stated, the term De Beers Canada means De Beers Canada Inc. and includes the Corporate, Exploration and Mining Divisions.

APPENDIX 1.VII

COMMITMENTS TABLE

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
1 - Introduction			
1.1.5 – Environmental Policies and Systems	De Beers is committed to operating and doing business in the NWT in a socially and environmentally responsible and sustainable manner. The company aims to operate in a way that minimizes the impact on the natural environment while achieving the greatest socio-economic benefits. In all its operations, De Beers treats full compliance with federal and local environmental legislation as the minimal acceptable standard.	Management	Construction Operation Closure
1.1.5.1 – Sustainable Development Policy	De Beers is committed to operating in accordance with the principles of sustainable development. This means ensuring that activities undertaken today meet the needs of the present without compromising the ability of future generations to meet their own needs. De Beers will apply its principles of sustainable development, as described in more detail in the formal policy statement signed by Jim Gowans, the De Beers' President in December 2009 (Appendix 1.III), in all of its activities and undertakings.	Management	Construction Operation Closure
1.1.5.2 – Northwest Territories Business Policy	De Beers carries out business in a way that maximizes its contribution to the local economy and to the social development of the communities in the region. Toward this end, the policy clearly defines Aboriginal and NWT Businesses and establishes a priority for business with communities close to its mining activity in the NWT to maximize positive benefits.	Management	Construction Operation Closure
1.1.5.3 – Human Resources Policy	The Human Resource Management Policy is part of De Beers' commitment to building a strong organizational culture and a climate of opportunity and challenge, by recognizing and rewarding employees contributions, valuing and embracing diversity, encouraging and supporting teams, and nurturing a climate of open and frank communication, including constructive feedback and meaningful performance reviews.	Management	Construction Operation Closure
1.1.5.4 – Working with Aboriginal Communities Policy	In working with Aboriginal people, De Beers will ensure that this status and their rights are respected, and will work to strike a balance between these considerations and other economic, social, and environmental responsibilities. De Beers is committed to building long-term relationships with its neighbours in the local communities near its operations. Traditional knowledge will continue to be actively solicited and considered in the planning and management of De Beers' activities. De Beers entered into four Impact Benefit Agreements (IBAs) with Aboriginal groups specific to the Snap Lake Mine. De Beers will build on its Snap Lake IBA experience, and anticipates putting in place additional agreements Project.	Management	Construction Operation Closure
1.1.5.5 – Environmental and Safety Management Systems	De Beers is working to ensure that both its environmental and safety management systems are in line with current industry "best practices", and that both management systems are committed to continual improvement in their respective disciplines.	Management	Construction Operation Closure
1.1.7 – Relationship with Contractors and Subconsultants	De Beers will honour its commitments and where they require specific action by contractors and sub-consultants, De Beers will ensure that processes are in place for contractors to understand their contractual obligations related to commitments; their bid will be the starting point for this understanding.	Management	Construction Operation Closure
2 - Project Alternatives			
2.4 – Environmental Considerations in the Project Design	To minimize the discharge of saline groundwater to the receiving environment, groundwater inflows collected in the pit dewatering systems will be maintained within the operational water management system and placed into the mined out pits.	Management Environmental Design Feature	Operation
2.4 – Environmental Considerations in the Project Design	The Project schedule requires dewatering of Kennady Lake at a pumping rate that will not result in bank erosion of downstream waterbodies (i.e., by remaining within the 1-in-2 wet year flood levels). To mitigate this concern, the initial phase of dewatering will split the discharge between the outlet of Kennady Lake and the N watershed, which is larger and can accommodate more flow without causing erosion problems. The rate and timing of discharge has also been designed to prevent impacts to fish and fish habitat in the N watershed and downstream of Kennady Lake.	Environmental Design Feature	Construction Operation Closure
2.4 – Environmental Considerations in the Project Design	Experience at other mines in the NWT and elsewhere has shown that careful management of wastes can prevent wildlife from being attracted to mine sites and reduce the number of wildlife incidents. Waste management practices for the Project will incorporate proven practices used at the Snap Lake Mine and other diamond mines in the NWT.	Management	Construction Operation Closure
2.4 – Environmental Considerations in the Project Design	Aggregate material is required for construction prior to development of the first open pit. All aggregate will be produced on site by crushing mine rock displaced by the construction of the mine pits or other facilities. The initial mine planning identified and intended to use esker resources to the southeast and southwest of Kennady Lake. More recently, a decision was made to not use the southeast esker, because it is located within the area of interest for the study area for a national park on the East Arm of Great Slave Lake.	Management	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
3 - Project Description			
3.6 - Processing 3.6.5 – Diamonds Removal	De Beers has agreed to make 10% of its rough diamonds, by value, from the Project available to manufacturers approved by the Government of the Northwest Territories and by De Beers.	Management	Construction Operation Closure
3.12 – Closure and Reclamation 3.12.1.1 - Objectives	In line with the long-term objectives, De Beers has made the following commitments for the Project: <ul style="list-style-type: none">• minimize, to the extent practical, the total amount of area disturbed by Project activities at any one time through the use of progressive reclamation;• recover as much soil as practical for use in reclamation activities;• develop a fish compensation plan that meets the “no-net-loss” guiding principle established by Fisheries and Oceans Canada (DFO);• conduct reclamation trials throughout the life of the Project to determine what prescriptions work most effectively at the Project site; and• actively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation.	Management	Closure
3.12 – Closure and Reclamation 3.12.1.1 - Objectives	Although closure and reclamation will be progressive and begin as soon as possible, it will extend years after mine closure. De Beers will use proven technology that is available at the time of reclamation, in accordance with the legal requirements at that time to facilitate reclamation as quickly as possible.	Management	Closure
3.12 – Closure and Reclamation 3.12.7.10.2 – Monitoring Effectiveness of Compensation	Habitat created or enhanced to compensate for the loss of fish habitat will be monitored to assess effectiveness of compensation by evaluating the physical and biological characteristics of the habitats, as well as fish use of the habitats. Habitat improvements will be implemented, as part of an adaptive management approach in consultation with regulators, if new or enhanced habitats are not providing the required habitat components for the target fish species. Monitoring results would be used, if necessary, to adjust mitigation and habitat compensation measures and make design improvements as required.	Management Monitoring	Closure
3.12 – Closure and Reclamation 3.12.8.2 – Re-vegetation	Experience gained from closures of the Ekati and Diavik mines will be used at the Project site to develop a re-vegetation management plan to support the successful restoration of the site. The evaluation will consider the physical aspects of re-vegetation, such as re-contouring, erosion control techniques, seedbed preparation, surface roughening, and the use of soil amendments, which collectively promote natural secondary succession. Test plots will be used to assess the effectiveness of various seed mixtures and their application on different growth media. In addition, the feasibility and practicality of collecting seeds from local species will be evaluated.	Management Monitoring	Closure
3.1 – Accidents and Malfunctions			
3.1.2 – Risk Management	Management of risks, including preparation for the unexpected (emergency response and contingency planning) is integral to De Beers’ Sustainable Development Policy. De Beers will ensure that management systems are in place to minimize the risk of accidents affecting people, the environment, and the facilities. Risks will be managed for the Project through the following means: <ul style="list-style-type: none">• prevention of accidents and malfunctions through engineering design, construction and operations training, awareness, education, and equipment maintenance;• assessment of risks of accidents and malfunctions throughout the Project phases;• employment of adaptive management to ensure continual appraisal of risks;• design and implementation of effective emergency response and contingency plans; and• implementation of a site environmental management plan.	Management	Construction Operation Closure
3.1.2 – Risk Management	Standard operating procedures are a key part of accident prevention and emergency response; Project-specific procedures will be developed before construction of the Project begins. The Snap Lake Mine currently has an International Organization for Standardization (ISO) -14001 certified environmental management system (EMS). This system will be extended to the Gahcho Kué Project before operations start.	Management	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
3.1.2 – Risk Management Table 3.1-1	The primary risk reduction strategies for petroleum spills will be development of a site-specific spill contingency plan and on-the-job training for fuel handlers. Major fuel handling will be under the direction of experienced site personnel. Large petroleum spills to the environment will be prevented to the extent possible through secondary containment of bulk storage tanks and large fuel caches. Small spills risks will be mitigated through use, where appropriate, of portable berms, bermed areas for large drum caches, spill kits, absorbent pads and containment booms, and routine inspections by site services and environmental personnel.	Management	Construction Operation Closure
3.1.2 – Risk Management Table 3.1-1	The primary risk reduction strategies for ammonium nitrate spills will include development of an explosives management plan and handling of ammonium nitrate restricted to licensed personnel. Ammonium nitrate will be stored in a secured area; any incidental spills will be cleaned up immediately.	Management	Construction Operation Closure
3.1.2 – Risk Management Table 3.1-1	The primary risk reduction strategy for fire will be engineering design to limit the chance for fire to start, a site-specific emergency response plan and training including fire drills held at least annually as required by the <i>Northwest Territories Mine Health and Safety Act</i> .	Management	Construction Operation Closure
3.1.2 – Risk Management Table 3.1-1	The primary risk reduction strategies for uncontrolled explosions will be engineering design to limit potential sources of uncontrolled explosion to the greatest extent possible, a site-specific emergency response plan, and training of appropriate staff.	Management	Construction Operation Closure
3.1.2 – Risk Management Table 3.1-1	Risk of aircraft accidents is reduced primarily through actions of the air charter company operating under regulations set by Transport Canada. Risk at the Project site will be reduced by effective communication between the Project personnel, the air charter company, and pilots through satellite phone and radio. No site vehicles will be allowed on the airstrip when aircraft are in-bound. Large ungulates, such as caribou, will be herded off the strip if required.	Management	Construction Operation Closure
3.1.2 – Risk Management Table 3.1-1	Risks from dyke, berm, waste rock pile, and pit wall failure will be reduced primarily through engineering design and annual geotechnical inspections coupled with frequent inspections by on-site personnel.	Environmental Design Feature Monitoring	Construction Operation Closure
Attachment 3.1.1 – Draft Emergency Response and Contingency Plan			
3.1.1.1 - Introduction	<p>The Emergency Response and Contingency Plan was developed to establish a guidance document for emergency responses at the Gahcho Kué Project (Project) site.</p> <p>The plan provides:</p> <ul style="list-style-type: none">• a clear chain of command for all emergency activities;• accountability for the performance of the spill response;• well-defined task and operational hazards/risk; and• reporting and record keeping requirements to track program progress. <p>The plan will be a “living” document and will be updated on a regular basis to address operational changes, as new information comes to light or procedures, permits, and authorizations change.</p>	Management	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
3II – Conceptual Compensation Plan			
3.II.7 – Compensation Habitats 3.II.7.3 – Proposed Habitat Compensation Plan	Quantification of habitat gains in terms of HUs, and determination of compensation ratios based on HUs, will be completed as part of the development of a detailed compensation plan to be completed in 2011.	Management	Construction Operation Closure
3.II.7 – Compensation Habitats 3.II.7.4 – Monitoring Effectiveness of Compensation	Habitat created or enhanced to compensate for the loss of fish habitat will be monitored to assess effectiveness of compensation by evaluating the physical and biological characteristics of the habitats, as well as fish use of the habitats. Habitat improvements will be implemented, as part of an adaptive management approach in consultation with regulators, if new or enhanced habitats are not providing the required habitat components for the target fish species.	Management	Construction Operation Closure
3.II.7 – Compensation Habitats 3.II.7.4 – Monitoring Effectiveness of Compensation	Monitoring results would be used, if necessary, to adjust mitigation and habitat compensation measures and make design improvements as required. Habitat monitoring will be key to confirming the no net loss objective has been achieved. Details of the compensation monitoring will be included in the detailed compensation plan. The detailed monitoring plan will be designed to meet all fish and fish habitat monitoring requirements included as conditions attached to any regulatory authorizations, approvals or permits that may be issued for development of the Project. Should, for some reason, the existing proposed habitat compensation not be sufficient to achieve no net loss of the productive capacity of fish habitat, additional habitat compensation would be developed in consultation with the appropriate regulators.	Management Monitoring	Construction Operation Closure
4 - Engagement			
4.3.8 – Public Information Campaign, 2010	A public information plan was developed to re-introduce the Project to the public just before the submission of the EIS to the Gahcho Kué Panel in December 2010. The public will have a wide range of opportunities to become informed about the Project, including: <ul style="list-style-type: none">• Direct mail-out out of DVD about the Project (in English, Tlicho, and Chipewyan) to about 150 key stakeholders;• Direct mail-out of Sharing Information newsletter to about 150 key stakeholders and First Nation government offices;• Insertion of Sharing Information newsletter in South Slave and North Slave editions of NWT News/North;• Poster on the Project posted at Chamber of Mines office, First Nations government offices, and Community government offices;• Newspaper advertisement (1/4 page, full colour) promoting availability of the DVD and Newsletter on NWT News/North;• De Beers external web site update with links to newsletter;• Radio advertisements promoting availability of DVD and Newsletter on CJCD (English) and CKLB (Tlicho, Chipewyan, and English); and• Television advertisement promoting availability of DVD and Newsletter in NorthwesTel Cable Channel 6 and CBC North.	Management	Pre-construction
4.3.9 – Planned Engagement Activities in 2011	In 2011 De Beers will continue with its engagement approach and work to advance discussions with communities about the Project, their concerns and the Project's potential effects, and then to involve the communities in addressing the mitigation of these effects. Activities will include: <ul style="list-style-type: none">- Community-based activities such as open houses and meetings;- Inviting community representatives to the Project site; and,- Extending the engagement activities to include specific topics. How these activities occur will depend on the communities and the direction provided by their leaders on how to proceed with meaningful engagement of the community and to determine how and when community engagement should proceed. De Beers is committed to continuing to engage with communities and providing opportunities for discussing the Project and the traditional used of the land and the environment in the vicinity of Kennady Lake.	Management	Pre-construction

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
4.6 – Community Concerns and Responses	<p>De Beers recognizes the importance of proactive and continued contact with First Nations and Métis communities, with the objective of both communicating the progress of Gahcho Kué project development as well as maintaining a dialogue around effects management and mitigation.</p> <p>De Beers has set a tradition of engagement since exploratory work began in the Kennady Lake area in the late 1990s, and the company has shown this with respect to its Snap Lake mine. This demonstrated commitment to information sharing and dialogue with First Nation and Métis communities will continue beyond the EIS community engagement program as the project moves through approvals, permitting, development and operation.</p>	Management	Pre-construction Construction Operation Closure
5 – Traditional Knowledge			
5.2.4.2 – Tlicho Government	De Beers remains committed to providing opportunities and continuing to work with the Tlicho to incorporate Traditional Knowledge into the Project that the Tlicho makes available to the company.	Management	Pre-construction Construction Operation Closure
5.4.1- Contribution to Project Design	<p>Road berms will be covered with small-size granular material to limit injury hazards to wildlife crossing the roads; low profile roads will be used so that they do not act as a barrier to movement for wildlife; and snow berms will be removed from the Winter Access Road so that they do not act as a barrier to wildlife movement.</p> <p>To reduce the potential for caribou to be injured as a result of coming into contact with mine rock, the following will be done: The number of roads constructed at the mine site will be kept to a minimum. Where possible, the roads will be constructed with smaller sized rocks. Embankments and berms will be kept to a minimum height that meets engineering as well as health and safety requirements.</p> <p>Consideration will be given to designing the mine rock piles and processed kimberlite containment facilities in such a way that caribou are diverted away from these structures. The design will discourage their movement up the slopes where they could become injured (e.g., the slopes and tops of piles will not be vegetated).</p>	Environmental Design	Construction Operation Closure
5.4.1- Contribution to Project Design	De Beers understands that TK about the land and the environment has a different perspective than western science. Where provided, traditional knowledge will be used to improve monitoring programs.	Monitoring	Construction Operation Closure
5.4.2.1 – Key Line of Inquiry: Caribou 5.4.2.1.3 – Integration into the Key Line of Inquiry	As a precautionary measure against wildlife attraction, the south and west mine rock piles, Fine PKC Facility, and Coarse PK Pile will not be vegetated.	Environmental Design Feature	Closure
5.4.2.2 – Water-related Key Lines of Inquiry 5.4.2.2.3 – Integration into the Key Line of Inquiry	<p>Regular watering of exposed lake bottoms, roads, the airstrip, and laydown areas will facilitate dust suppression around the site.</p> <p>Raising the water levels in Lake A3 and in lakes to the east of Kennady Lake to replace habitat lost during Project activities</p> <p>Division channels will be designed and constructed to provide fish passage from N watershed to the B, D, and E watersheds to prevent interruption of fish migrations.</p>	Environmental Design Feature	Construction Operation Closure
5.4.2.3 – Subject of Note: Air Quality 5.4.2.3.3 – Integration into the Subject of Note	<p>TK concerns were considered by De Beers in developing environmental design features and incorporating mitigation into the Project, such as the following examples:</p> <ul style="list-style-type: none">• use of low sulphur fuel for fleet vehicles;• possible use of diesel engine exhaust catalytic converters to reduce NO_x emissions from its mobile fleet; and• water spray application to control dust emissions on haul roads during the summer. <p>A detailed listing of these environmental design features and mitigation measures are found in Section 11.4.3 of the Subject of Note: Air Quality.</p>	Management Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
5.4.2.4 – Subject of Note: Vegetation 5.4.2.4.3 – Integration into the Subject of Note	<p>Aboriginal concerns and TK informed several of the environmental design features and mitigation features for the Project. Examples of these are:</p> <ul style="list-style-type: none"> regular watering of roads, airstrip and laydown areas to facilitate dust suppression; surface water runoff will be collected in ditches and water management ponds prior to release; and use of low sulphur diesel fuel. <p>A full listing of the environmental design features and mitigation features that have been implemented to address Aboriginal concerns about plant contamination and wildlife habitat are found in Section 11.7.3, Table 11.7-13.</p>	Management Environmental Design Features	Construction Operation Closure
5.4.3 – Monitoring and Mitigation 5.4.3.1 – Vegetation Monitoring	<p>Vegetation programs implemented during the life of the Project will be a combination of environmental monitoring (including a vegetation management plan) to track conditions and implement further mitigation as required, and follow-up monitoring to verify the accuracy of impact predictions and implement further mitigations as required. Environmental design features and mitigation that will be used to limit effects on vegetation include:</p> <ul style="list-style-type: none"> compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiency; mine rock will be used as the source of aggregate production, thereby, reducing the need for separate quarries; to the extent practical, the total amount of area disturbed by Project activities at any one time will be reduced through the use of progressive reclamation; at closure, transportation corridors and the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where required; reclamation trials will be completed throughout the Project life to determine which prescriptions may be most effective for reclamation prohibit recreational off-road use of all terrain vehicles ; compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site; watering of roads, airstrip, and laydown areas will facilitate dust suppression; and, mine rock piles will not be covered or vegetated to limit attraction of wildlife to them after Project closure 	Monitoring	Construction Operation Closure
5.4.3 – Monitoring and Mitigation 5.4.3.2 – Reducing Impacts on Eskers	No eskers will be disturbed by the Project.	Environmental Design Feature	Construction Operation Closure
5.4.3 – Monitoring and Mitigation 5.4.3.3 – Design of Fish Habitat Enhancement	The observation that lake trout fry remain in the shallows to avoid predators until large enough to seek protection in deeper areas of the lake was used to design and position habitat enhancement structures as partial compensation for habitat losses in Kennady Lake due to mining.	Environmental Design Feature	Closure
5.4.3 – Monitoring and Mitigation 5.4.3.4 – Reducing Impacts on Water Quality	<p>Mitigation measures were put in place to limit project-related high flows and low flows, and to limit effects on downstream waterbodies. Environmental design features and mitigation that will be used to limit effects on water quality include:</p> <ul style="list-style-type: none"> mine rock used to construct the dykes will be non-acid generating (NAG); any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pH; the potential acid generating (PAG) rock will be enclosed within enough NAG rock that the active frost zone (typically two meters) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areas; the performance of the dykes will be monitored throughout their construction and operating life; instrumentation monitoring together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidents. Additional mitigation will be applied, if required; a system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pits; and thermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozen. 	Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
5.4.3 – Monitoring and Mitigation 5.4.3.5 – Air Quality Monitoring	De Beers will include the potential for dust from the drained lakebed in its air quality monitoring program, and develop contingency plans should monitoring data indicate excessive dust concentrations.	Monitoring	Operation Closure
5.4.4 – Closure and Reclamation Planning	During closure and reclamation, all site roads not required for post-closure maintenance and monitoring will be decommissioned and reclaimed at the end of the closure phase. The rest will be reclaimed by the end of the post-closure monitoring. Post-closure access to the site will be primarily by aircraft, with minimal vehicle traffic.	Environmental Design Feature	Closure
5.4.5 – Plans for Future Cooperation	De Beers is committed to considering and incorporating TK into all stages to the Project life: the assessment, permitting, construction, operations and closure of the Project. This will be achieved by: <ul style="list-style-type: none">Continuing to advance engagement activities with communities that will provide opportunities to discuss the Project and any traditional knowledge that the community is willing to provide;Incorporating any TK that is provided into the Project;Continuing to work with the LKDFN to finalize and release the TK study;Hosting site visits on a regular basis to enable the exchange of information between elders/TK holders and De Beers staff. Visiting communities regularly to provide updated information regarding the project and incorporating an opportunity in this visit for TK holders to meet with the company to provide expertise and advice;From time to time, the company will provide community based workshops as part of the company’s planning processes or to address specific topics ;Involving elders and students from their home communities together in on site and field monitoring programs from time to time; and,Featuring the events and activities that the company undertakes with the involvement of elders in the company’s internal newsletters to employees and in the on-site the cultural centre as a means to sharing the knowledge and advice of elders with all staff.	Management	Construction Operation Closure
6 – Assessment Approach			
	No Commitments Presented		
7 – Key Line of Inquiry: Caribou			
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1	Direct loss and fragmentation of wildlife habitat from the physical footprint of the Project may alter caribou movement and behaviour: <ul style="list-style-type: none">backfilling the mined-out pits with PK and mine rock will decrease the on-land Project footprintcompact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiencymine rock will be used as the source of aggregate production, thereby, reducing the need for separate quarriesblasting in pits will be carefully planned and controlled to maintain a safe workplace and reduce the throw of ore bearing materialswhere practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsto the extent practical, the total amount of area disturbed by Project activities at any one time will be reduced through the use of progressive reclamationramps to facilitate the access and egress of caribou from the mine rock piles will be constructed during closureculverts or stream-crossing structures will be removed and natural drainage re-establishedat closure, transportation corridors and the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where requiredat closure, the entire site area will be stabilized and contoured to blend with the surrounding landscapeconditions will be monitored over time to evaluate the success of the Closure and Reclamation Plan and, using adaptive management and newer proven methods as available, adjust the Plan, if necessaryDe Beers will actively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1	Physical hazards from the Project may increase the risk of injury/mortality to individual animals, which can affect caribou population size <ul style="list-style-type: none">backfilling the mined-out pits with PK and mine rock will decrease the on-land Project footprintcompact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiencymine rock will be used as the source of aggregate production, thereby, reducing the need for separate quarriesblasting in pits will be carefully planned and controlled to maintain a safe workplace and reduce the throw of ore bearing materialswhere practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsto the extent practical, the total amount of area disturbed by Project activities at any one time will be reduced through the use of progressive reclamationramps to facilitate the access and egress of caribou from the mine rock piles will be constructed during closureculverts or stream-crossing structures will be removed and natural drainage re-establishedat closure, transportation corridors and the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where requiredat closure, the entire site area will be stabilized and contoured to blend with the surrounding landscapeconditions will be monitored over time to evaluate the success of the Closure and Reclamation Plan and, using adaptive management and newer proven methods as available, adjust the Plan, if necessaryDe Beers will actively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation	Management Environmental Design Feature Monitoring	Construction Operation Closure
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1	Dust deposition may cover vegetation and decrease abundance of forage for caribou (i.e., habitat quantity): <ul style="list-style-type: none">a program of carbon and energy management will be implemented once the generators are commissioned.generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiencyload management will allow for the optimization of the load factors on the generatorspumping circuits will be operated so that no unnecessary pumping takes place and pump efficiencies are optimizedprograms will be instituted to review power and heat use to reduce energy use and, therefore air emissionspiping will be insulated for heat conservationpersonnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complexcompact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the sitewatering of roads, airstrip, and laydown areas will facilitate dust suppressionenforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature Monitoring	Construction Operation Closure
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1	Dust deposition may cover vegetation and change the amount of different quality habitats, and alter caribou movement and behaviour: <ul style="list-style-type: none">a program of carbon and energy management will be implemented once the generators are commissioned.generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiencyload management will allow for the optimization of the load factors on the generatorspumping circuits will be operated so that no unnecessary pumping takes place and pump efficiencies are optimizedprograms will be instituted to review power and heat use to reduce energy use and, therefore air emissionspiping will be insulated for heat conservationpersonnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complexcompact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the sitewatering of roads, airstrip, and laydown areas will facilitate dust suppressionenforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1	Dust deposition and air emissions may change the amount of different quality habitats (through chemical changes in soil and vegetation), and alter caribou movement and behaviour: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned.• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be operated so that no unnecessary pumping takes place and pump efficiencies are optimized• programs will be instituted to review power and heat use to reduce energy use and, therefore air emissions• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature Monitoring	Construction Operation Closure
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And 7.4.2.1.1 – Pathways with No Linkage And 7.4.2.1.2 – Secondary Pathways	Ingestion of soil, vegetation, and water, or inhalation of air that has been chemically altered by air emissions (including NOx and PAI deposition) or dust deposition, may affect caribou survival and reproduction: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned.• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be operated so that no unnecessary pumping takes place and pump efficiencies are optimized• programs will be instituted to review power and heat use to reduce energy use and, therefore air emissions• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature Monitoring	Construction Operation Closure
	Sensory disturbance (e.g., presence of buildings, people, lights, smells, and noise) changes the amount of different quality habitats, and alters caribou movement and behaviour, which can influence survival and reproduction: <ul style="list-style-type: none">• compact layout of the surface facilities will limit the area disturbed at construction and reduce traffic around the site• a minimum flying altitude of 300 m above ground level (except during takeoff and landing) will be maintained for cargo, passenger aircraft, and helicopter outside of the Project site• limit the amount of noise from the Project site to the extent practical• equipment noise sources will be limited by locating them inside buildings, to the extent possible• downward directional and low impact lighting will be used to reduce light pollution• a minimum 200 m distance from wildlife will be maintained, when possible• environmental sensitivity training for personnel• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape	Management Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And 7.4.2.1.1 – Pathways with No Linkage And 7.4.2.1.2 – Secondary Pathways (continued)	<p>Aircraft/vehicle collisions may cause injury/mortality to individual animals:</p> <ul style="list-style-type: none">• personnel arriving at or leaving the site will be transported by bus, which will decrease the amount of traffic between the airstrip and the accommodations complex• speed limits will be established and enforced• wildlife will be provided with the “right-of-way”• levels of private traffic using the Winter Access Road will be monitored• the site will be designed to limit blind spots, where possible, to reduce the risk of accidental wildlife-human encounters• drivers will be warned when wildlife are moving through an area using signage and radio• safe, effective methods will be used to remove caribou from the airstrip before aircraft land or takeoff	Management Environmental Design Feature Monitoring	Construction Operation Closure
	<p>Chemical spills (including de-icing fluid run off) may cause negative changes to health or mortality of individual animals:</p> <ul style="list-style-type: none">• processing of the kimberlite ore will be mechanical, with limited use of chemicals• hazardous, non-combustible waste and contaminated materials will be temporarily stored in the waste storage transfer area in sealed steel or plastic, wildlife-resistant drums, and shipped off-site for disposal or recycling• chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums, and stored in suitable sealed containers in the waste transfer area• the waste transfer storage area will include a lined and enclosed pad for the collection and subsequent return of hazardous waste to suppliers or to a hazardous waste disposal facility• emulsion materials will be stored at the emulsion plant where spills would be 100% contained within the building• all fuel storage tanks will be designed and constructed according to the American Petroleum Institute 650 standard and placed in a lined and dyked containment area to contain any potential fuel spills• aviation fuel will be stored in self-contained, Underwriters Laboratories Canada-rated enviro tanks mounted on an elevated pad at the air terminal shelter• aviation fuel for helicopters will be stored in sealed drums inside a lined berm area near the airstrip• to prevent accumulation and/or runoff of de-icing fluid at the airstrip from aircraft de-icing operations, aircraft will be sprayed in a specific area that will be equipped with swales to collect excess de-icing fluid• puddles of de-icing fluid in the swales will be removed by vacuum truck and deposited into waste de-icing fluid drums for shipment to recycling facilities• an Emergency Response and Contingency Plan has been developed• spill containment supplies will be in designated areas• any spills will be isolated and immediately cleaned up by a trained spill response team consisting of on-site personnel who will be available at all times	Management Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And 7.4.2.1.1 – Pathways with No Linkage And 7.4.2.1.2 – Secondary Pathways (continued)	Attractants to site (e.g., food waste, oil products) may increase predator numbers and increase predation risk: <ul style="list-style-type: none">• separate bins will be located throughout the accommodations complex, processing plant, shops, and other facilities on-site for immediate sorting of domestic wastes• food wastes will be collected from the food waste bins in the accommodations complex, service complex, and other facilities and immediately placed and sealed in plastic bags; the plastic bags will be stored in sealed containers at each facility before transport directly to the incinerator storage area for incineration• chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums and stored in suitable sealed containers in the waste transfer area; chemicals that cannot be incinerated will be shipped off-site for disposal or recycling• incinerator ash from combustion of kitchen and office waste will go to the landfill• inert solid waste will be deposited into a small area of the PK and mine rock storage piles or the Fine PKC Facility• care will be taken to prevent the inclusion of wastes that could attract wildlife• two dual-chambered, diesel-fired incinerators will be provided for the incineration of combustible waste, including kitchen waste. The incinerators will also be used to burn waste oil. Incinerator ash will be collected in sealed, wildlife-resistant containers and transported to the landfill• a fenced area will be established for the handling and temporary storage of wastes. Fencing will be 2 m high, slatted-type, and partially buried to prevent animals from burrowing underneath• education and reinforcement of proper waste management practices will be required for all workers and visitors to the site• the efficiency of the waste management program and improvement through adaptive management will be reviewed as needed	Management Environmental Design Feature	Construction Operation Closure
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And 7.4.2.1.1 – Pathways with No Linkage And 7.4.2.1.2 – Secondary Pathways (continued)	Leaching of PAG mine rock may change the amount of different quality habitats, and alter caribou movement and behaviour: <ul style="list-style-type: none">• mine rock used to construct the dykes will be NAG.• any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pH• any potentially acid-generating (PAG) mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be underwater when Kennady Lake is refilled.• till from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into the portion of the repository.• the PAG rock will be enclosed within enough non-acid generating (NAG) rock that the active frost zone (typically 2 m) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areas• to confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructed• minimal water is expected to penetrate to the PAG rock areas.• only non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock• thermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozen• mine rock piles will not be covered or vegetated to limit attraction of wildlife to them after Project closure	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And 7.4.2.1.1 – Pathways with No Linkage And 7.4.2.1.2 – Secondary Pathways (continued)	<p>Ingestion of soil, vegetation, or water that has been chemically altered by leaching of PAG mine rock may affect caribou survival and reproduction.</p> <ul style="list-style-type: none">• mine rock used to construct the dykes will be NAG.• any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pH• any potentially acid-generating (PAG) mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be underwater when Kennady Lake is refilled.• till from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into the portion of the repository.• the PAG rock will be enclosed within enough non-acid generating (NAG) rock that the active frost zone (typically 2 m) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areas• to confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructed• minimal water is expected to penetrate to the PAG rock areas.• only non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock• thermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozen• mine rock piles will not be covered or vegetated to limit attraction of wildlife to them after Project closure	Management Environmental Design Feature Monitoring	Construction Operation Closure
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And 7.4.2.1.1 – Pathways with No Linkage And 7.4.2.1.2 – Secondary Pathways (continued)	<p>Release of seepage and surface water runoff (including erosion) from the Coarse PK Pile, Fine PKC Facility and mine rock piles may change the amount of different quality habitats, and alter caribou movement and behaviour:</p> <ul style="list-style-type: none">• the performance of the dykes will be monitored throughout their construction and operating life. Instrumentation monitoring together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidents. Additional mitigation will be applied, if required.• a system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pits• site runoff will flow naturally to the dewatered areas of Kennady Lake that will act as a control basin for storage of water. Within this basin, water flows can be managed. Where practical, natural drainage patterns will be used to reduce the use of ditches or diversion berms.• no substantial runoff and seepage from the mine rock piles is expected.• a soil-bentonite slurry cutoff wall through a till fill zone placed over the overburden and the overburden to the bedrock surface has been adopted as the main seepage control for the diversion dyke separating Areas 7 and 8• the cut-off wall for the dyke separating Areas 7 and 8 will be protected by a downstream filter zone and mine rock shell zone• for the retention dyke that separates Areas 3 and 4, Areas 5 and 6, and Areas 4 and 6, a wide till core has been selected as the main seepage control• the water retention dyke separating Area 2 and Lake N7, as well as diversion dykes dealing with Lakes A3, A4, B1, N13, D2, E1, and E3 will have a liner keyed into the competent frozen ground or bedrock to control seepage• the curved filter dyke to retain the particles in the fine PK placed in Areas 1 and 2 will be construction material and will be free of roots, organics, and other materials not suitable for construction.• the PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.• thermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozen	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And 7.4.2.1.1 – Pathways with No Linkage And 7.4.2.1.2 – Secondary Pathways (continued)	<p>Ingestion of seepage and surface water runoff from the Coarse PK Pile, Fine PKC Facility and mine rock piles, or ingestion of soil, vegetation, or water that has been chemically altered by seepage and runoff, may affect caribou survival and reproduction:</p> <ul style="list-style-type: none">the performance of the dykes will be monitored throughout their construction and operating life. Instrumentation monitoring together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidents. Additional mitigation will be applied, if required.a system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pitssite runoff will flow naturally to the dewatered areas of Kennady Lake that will act as a control basin for storage of water. Within this basin, water flows can be managed. Where practical, natural drainage patterns will be used to reduce the use of ditches or diversion berms.no substantial runoff and seepage from the mine rock piles is expected.a soil-bentonite slurry cutoff wall through a till fill zone placed over the overburden and the overburden to the bedrock surface has been adopted as the main seepage control for the diversion dyke separating Areas 7 and 8the cut-off wall for the dyke separating Areas 7 and 8 will be protected by a downstream filter zone and mine rock shell zonefor the retention dyke that separates Areas 3 and 4, Areas 5 and 6, and Areas 4 and 6, a wide till core has been selected as the main seepage controlthe water retention dyke separating Area 2 and Lake N7, as well as diversion dykes dealing with Lakes A3, A4, B1, N13, D2, E1, and E3 will have a liner keyed into the competent frozen ground or bedrock to control seepagethe curved filter dyke to retain the particles in the fine PK placed in Areas 1 and 2 will be construction material and will be free of roots, organics, and other materials not suitable for construction.the PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.thermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozen	Environmental Design Feature Monitoring	Construction Operation Closure
	<p>Road footprint decreases habitat quantity and may cause fragmentation, which can alter caribou movement and behaviour:</p> <ul style="list-style-type: none">low profile roads will be used so that they do not act as a barrier to movement for wildlifewinter road snow berms will be removed so that they do not act as a barrier to movement for wildlife	Management Environmental Design Feature	Construction Operation Closure
	<p>Road footprint may cause changes to the amount of different quality habitats (e.g., degradation to vegetation), and alter caribou movement and behaviour:</p> <ul style="list-style-type: none">use of proven best practices for winter road construction	Management	Construction Operation Closure
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And	<p>Increased access for traditional and non-traditional harvesting may alter caribou movement and behaviour, which can affect survival and reproduction:</p> <ul style="list-style-type: none">seasonal use of Winter Access Roadprohibit firearms of any type, bows, and crossbows at the Projectprohibit hunting, trapping, harvesting, and fishing by employees and contractors and enforce this prohibition	Management Environmental Design Feature	Construction Operation Closure
7.4.2.1.1 – Pathways with No Linkage And 7.4.2.1.2 – Secondary Pathways (continued)	<p>Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from dewatering of Kennady Lake may affect the quantity of riparian habitat, which could alter caribou movement and behaviour:</p> <ul style="list-style-type: none">lake N11 is capable of accepting water at the proposed discharge rate without erosion damage to downstream watercourses	Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And	Dewatering may result in newly established vegetation on the exposed lakebed sediments and increase habitat quantity, which may alter caribou movement and behaviour: <ul style="list-style-type: none"> dykes will be constructed to divert fresh water from entering areas of Kennady Lake the height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watershed dewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels 	Management Environmental Design Feature	Construction Operation
7.4.2.1.1 – Pathways with No Linkage And	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from dewatering Kennady Lake may cause injury/mortality to individual animals <ul style="list-style-type: none"> dykes will be constructed to divert fresh water from entering areas of Kennady Lake the height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watershed dewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels 	Management Environmental Design Feature	Construction Operation
7.4.2.1.2 – Secondary Pathways (continued)	Changes in the timing of freeze and break-up downstream may alter caribou movement and behaviour, and could cause injury/mortality to individual animals <ul style="list-style-type: none"> dykes will be constructed to divert fresh water from entering areas of Kennady Lake the height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watershed dewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels 	Management Environmental Design Feature	Construction Operation
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from the refilling of Kennady Lake may affect the quantity of riparian habitat, which could alter caribou movement and behaviour: <ul style="list-style-type: none"> mined-out pits will be backfilled with PK and mine rock to reduce the time required for filling these portions of Kennady Lake because less water is required to refill the partially backfilled pits Kennady Lake will be refilled using natural runoff and supplemental water drawn from Lake N11 while fine PK is being discharged in the mined-out pits (primarily Hearne, but potentially 5034) process water will not be reclaimed from the pits. Instead the slurry discharge water will be used to accelerate the infill of the mined-out pits. The process will facilitate a more rapid re-filling and progressive reclamation of Area 6 within Kennady Lake the 5034 Pit will be backfilled to the extent possible with mine rock and the remaining space will be eventually filled with water once mining in the Tuzo Pit is complete the Tuzo Pit will be allowed to flood following the completion of the operations phase. Natural watershed inflows will be supplemented by pumping water from Lake N11 the pumping rates are anticipated to be managed such that the total outflow from Lake N11 does not drop below the 1 in 5-year dry conditions 	Environmental Design Feature	Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
7.4 – Pathway Analysis 7.4.2 - Results Table 7.4-1 And 7.4.2.1.1 – Pathways with No Linkage And 7.4.2.1.2 – Secondary Pathways (continued)	Long-term seepage from the Coarse PK Pile and mine rock piles may cause local changes to habitat quality, and alter caribou movement and behaviour: <ul style="list-style-type: none">the PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.thermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozenthe Coarse PK Pile will be shaped and covered with a layer of mine rock of a minimum 1 m to limit surface erosiononly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles. The thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rockno substantial runoff and seepage from the mine rock piles is expected.	Environmental Design Feature	Closure
7.10 – Monitoring and Follow-up	Upon approval of the Project, a wildlife effects monitoring program (WEMP) will be implemented to test impact predictions and reduce the level of uncertainty related to each prediction. The principal goal of the WEMP is to provide information required for the Project's Environmental Management System to adaptively manage the Project to protect wildlife and wildlife habitat.	Monitoring	Construction Operation Closure
7.10 – Monitoring and Follow-up	Species selected for effects monitoring would be based on recent and current environmental assessments and monitoring programs in the NWT and Nunavut, and would likely include caribou. Following the principals of adaptive management, species selected for monitoring may be periodically reviewed by government, community, and regulatory agencies, and changed as necessary.	Monitoring	Construction Operation Closure
7.10 – Monitoring and Follow-up	De Beers is committed to considering and incorporating TK into the WEMP. The incorporation of TK would occur throughout all stages of the WEMP, including identification of mitigation practices and policies, data collection, and follow-up programs to obtain feedback. Results of any relevant community-based monitoring studies would be incorporated into the annual WEMP report (with permission from the communities). As with all aspects of the WEMP, the incorporation of TK would be a continuously evolving process.	Monitoring	Construction Operation Closure
7.10 – Monitoring and Follow-up	Community members will be invited to participate in data collection programs. This includes specific species monitoring programs (e.g., surveys for caribou, grizzly bears, and wolverine). The involvement of community members in field data collection is expected to contribute to overall efficiency as well as provide feedback and ideas.	Monitoring	Construction Operation Closure
7.I – Wildlife Effects Mitigation and Management Plan			
7.1.1 – Introduction 7.1.1.1 – Content and Objectives	The draft Wildlife Effects Mitigation and Management Plan outlines the policies, practices, designs, and procedures that De Beers Canada Inc. plans to implement to reduce Project-related effects to wildlife abundance and distribution at the Gahcho Kué Project. The intent is to reduce effects to wildlife populations, and maintain safety for wildlife and humans.	Management Environmental Design Feature Monitoring	Construction Operation Closure
7.II – Noise Assessment			
7.II.3 Pathways Analysis 7.II.5 – Project Operations 7.II.5.3 – Noise Predications And 7.II.10 – Monitoring and Follow-up	Environmental Design Features that Reduce Effects Due to Noise: <ul style="list-style-type: none">terrain changes (mine rock piles and pit depth) .buildings or other structures.stationary equipment housed inside buildings. The relevant benchmark for sleep disturbance from the project is exceeded for the workers camps. As a result, an examination of possible mitigation measures will occur in the advance design stages of the mine. Follow-up noise monitoring will be done once the Project is in operation to verify the modelling and resulting disturbance area.	Environmental Design Feature Monitoring	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8 – Key Line of Inquiry: Water Quality and Fish in Kennady Lake			
8.4 – Water Management Plan 8.4.2- Construction Phase 8.4.2.2- Use of Area 8 as the Potable Water Supply	The intake design will consist of a prefabricated pumping station located on a rockfill embankment, with a submerged intake pipe located in the lake. The intake will be screened per DFO guidelines (DFO 1995) to limit fish entrainment in the pumps, and any piping exposed to freezing temperatures will be heat traced.	Environmental Design Features	Construction
8.4 – Water Management Plan 8.4.2- Construction Phase 8.4.2.3 – Dewatering of Kennady Lake	Fish salvage will be conducted to remove fish before and during dewatering.	Management	Construction
8.4- Water Management Plan 8.4.3 – Operations Phase 8.4.3.8 – Sewage Treatment Plan	The sewage sludge will be dewatered and disposed in the landfill on site. If possible, the sludge may be composted or used as a soil treatment.	Management	Construction Operation
8.4- Water Management Plan 8.4.3 – Operations Phase 8.4.3.8 – Sewage Treatment Plan	The use of phosphate-based cleaning products will be restricted on-site.	Management	Construction Operation
8.4- Water Management Plan 8.4.3 – Operations Phase 8.4.3.8 – Sewage Treatment Plan	Effluent from the STP will be monitored to determine that discharge quality is consistent or better than specification standards. Should the system become incapable of producing effluent of desired quality, untreated sewage will be stored in tanks, until the issue(s) preventing treatment have been resolved.	Management	Construction Operation
8.4- Water Management Plan 8.4.6 – Potential Sources of Change to Site Water Quality 8.4.6.2 - Explosives	Explosive use will be managed with the primary environmental goal of limiting loss of ammonia to mine rock and kimberlite.	Management	Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.4- Water Management Plan 8.4.6 – Potential Sources of Change to Site Water Quality 8.4.6.2 – Explosives 8.4.6.2.1 – Ammonium Nitrate	Storage of ammonium nitrate in a contained facility away from waterbodies reduces the risk of ammonia loss to waterbodies. Ammonium nitrate will be stored in supersacs that will be stacked outdoors in rows on two storage pads in a bermed area and covered with tarps for weather protection. A geofabric will be installed under the storage pad to prevent seepage into underlying soils in case of a spill. Any broken bags will be treated as spills and dealt with accordingly.	Management	Operation
8.4- Water Management Plan 8.4.6 – Potential Sources of Change to Site Water Quality 8.4.6.2 – Explosives 8.4.6.2.2 – Emulsion Plant	All emulsion materials will be stored at the emulsion plant, which is located to the southeast of the Fine PKC Facility. Any spills of emulsion materials will be contained within the building. The emulsion plant will use ammonium nitrate to manufacture a water resistant emulsion-type explosive. Bulk ANFO explosives that are not water resistant will be used only under appropriate dry hole conditions. The emulsion plant will operate intermittently and produce only the quantities of finished product required for immediate use so that storage of bulk explosives materials in the plant is not required.	Management	Operation
8.4- Water Management Plan 8.4.6 – Potential Sources of Change to Site Water Quality 8.4.6.3 – Petroleum Products 8.4.6.3.2 - Landfarm	If remediation of hydrocarbon-contaminated soils in the landfarm proves to be ineffective and no other remediation system has proved effective in northern climates, the contaminated soils will be collected and shipped to suitable disposal facilities in Alberta.	Management	Operation
8.4- Water Management Plan 8.4.6 – Potential Sources of Change to Site Water Quality 8.4.6.5 – Mine Rock and Processed Kimberlite	Any potentially acid-generating (PAG) mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles. Till from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into that portion of the repository. Further, the PAG rock will be enclosed within enough non-acid generating (NAG) rock to prevent the active zone (typically 2 m) from extending into the enclosed material.	Environmental Design Features	Operation
8.4- Water Management Plan 8.4.6 – Potential Sources of Change to Site Water Quality 8.4.6.5 – Mine Rock and Processed Kimberlite	Barren kimberlite, or mine rock mixed with barren kimberlite, will not be placed directly on the tundra soils.	Management	Operation
8.4- Water Management Plan 8.4.7 – Potential Accidents and Malfunctions Relevant to Water Management 8.4.7.1 – Petroleum Spills	Vehicle fuelling stations will be located on a concrete pad sloping toward a drain connected to a sump. Any spills of fuel would flow to the sump, which would be pumped out to a container for shipment off-site during winter resupply.	Environmental Design Features	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.4- Water Management Plan 8.4.7 – Potential Accidents and Malfunctions Relevant to Water Management	All tanks, piping, and valves will meet all applicable standards or requirements, and be installed by experienced contractors. The design of the containment area will be based on requirements of the <i>Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products</i> (CCME 2003), the National Fire Code of Canada, and any other standards that are required. The fuel farm, fuel supply tanks, valves, and piping will be routinely inspected to ensure no leakage has occurred. All fuel storage areas will have secondary containment. All fuel tanks will have a spill containment provision.	Management Environmental Design Features Monitoring	Construction Operation Closure
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And 8.6.2.2 – Pathways with No Linkage And 8.6.2.3 – Secondary Pathways(continued)	<p>Reduction in watershed areas may change flows, water levels, and channel/bank stability in streams and small lakes in the Kennady Lake watershed, and affect water quality, fish habitat and fish:</p> <ul style="list-style-type: none">backfilling the mined-out 5034 and Hearne pits with processed kimberlite (PK) and mine rock to decrease the on-land Project footprint and reduce the volume of deep pit lakes within a reclaimed Kennady Lake.compact layout of the surface facilities to limit the area that is disturbed by construction and operation. <p>Impediments to fish passage at stream crossings (e.g., airstrip and roads) may affect fish:</p> <ul style="list-style-type: none">installation of properly sized culverts with natural substrates, including Stream Ha1 underneath airstrip	Environmental Design Features Environmental Design Features	Construction Operation Construction Operation
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And 8.6.2.2 – Pathways with No Linkage And 8.6.2.3 – Secondary Pathways(continued)	<p>Seepage and runoff from the mine rock piles, Coarse PK Pile and the Fine PKC Facility, may change water quality in the Kennady Lake watershed, and affect aquatic health and fish:</p> <ul style="list-style-type: none">runoff and seepage from these Project facilities will flow naturally to collection ponds in the dewatered areas of Kennady Lakethe Coarse PK Pile will not be designed to have a single point of release for seepage and runoff; any runoff will flow through natural channels within the Project footprint and be retained in the collection pond associated with Area 4seepage and runoff directed to the dewatered area of Kennady Lake will not be directly released to the environment; water will be sequestered into Areas 3 and 5 (Water Management Pond [WMP]), and later into the process plant or the Fine PKC Facility and then to the backfilled mine pitsrelease of blasting residues from mined rock material will be reduced by containing and permanently storing all water inflow to the mine and kimberlite process water; emulsions will be used for wet blasting, and ammonium nitrate fuel oil (ANFO) will be used for dry blasting to limit ammonia leachingexplosives will be managed to limit the loss of ammonia to mine rock and kimberlite, which could subsequently leach into runoff at the Project site or be processed at the processing plantseepage from the mine rock and Coarse PK piles, and the Fine PKC Facility will not be directly released to Area 8; water will be sequestered into the WMP, and later into the process plant or the Fine PKC Facility and then to the backfilled mine pitsduring reclamation, only non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock pile. The thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-acid generating (NAG) mine rock with the development of permafrostthermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of clean mine rock over the repository will be subject to annual freeze and thaw cycles, but any PK and potentially acid-generating (PAG) rock sequestered are predicted to remain frozenduring reclamation, the Coarse PK Pile and Fine PKC Facility will be shaped and covered with a layer of mine rock of a minimum 1 m to limit surface erosion and to direct surface drainage and seepage to Kennady Lake	Environmental Design Features Monitoring	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1	Construction of site infrastructure may result in sediment releases through the drainage network that will change water and sediment quality, and affect fish habitat and fish: <ul style="list-style-type: none">• standard erosion and sediment control measures (e.g., silt curtains, runoff management) will also be used during construction around areas to be disturbed• construction will take place during the winter when streams within or adjacent to the Project site are not flowing, or after the spring freshet when flows are generally low	Environmental Design Features	Construction Operation
And	Project development in the Kennady Lake watershed will result in the loss of fish habitat: <ul style="list-style-type: none">• preparation of a compensation plan to develop fish habitat of equivalent or higher productive capacity where prevention of harmful habitat alteration or loss is not feasible	Management Environmental Design Features	Construction Operation
8.6.2.2 – Pathways with No Linkage	Dewatering of Kennady Lake and other small lakes may cause mortality and spoiling of fish: <ul style="list-style-type: none">• fish salvage in Kennady Lake and other lakes will be conducted to remove fish before and during dewatering; the fish salvage will be designed and implemented in consultation with DFO and local Aboriginal communities	Management Environmental Design Features	Construction Operation
And	Impingement and entrainment of fish in intake pumps during dewatering may cause injury and mortality to fish: <ul style="list-style-type: none">• appropriately sized fish screens, which meet DFO guidelines, fitted to pumps to limit fish access and to limit fish entrained to the smallest species and life stages	Environmental Design Features	Construction Operation
8.6.2.3 – Secondary Pathways(continued)			
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1	Release of sediment to Area 8 during the construction of Dyke A may change water and sediment quality, and affect fish habitat and fish: <ul style="list-style-type: none">• silt curtains will be placed upstream and downstream of the construction area to control the release of sediment to Area 8	Environmental Design Features	Construction Operations
And	Erosion of lake-bottom sediments in Area 8 near the outfall may cause changes to water and sediment quality and affect fish habitat and fish: <ul style="list-style-type: none">• pumped discharge to Area 8 will be directed through properly designed outfalls/diffusers to prevent erosion	Environmental Design Features	Construction Operations
8.6.2.2 – Pathways with No Linkage	Dewatering of Area 7 to Area 8 may change flows, water levels, and channel/bank stability in Area 8: <ul style="list-style-type: none">• direct discharge of clean water to Area 8 while water quality discharge criteria are met; discharge from Area 7 is proposed to cease after Year -2• discharge during the first phase of dewatering of Kennady Lake will be monitored so that the lake surface in the dewatering area remains at a level that limits suspended sediment concentrations reaching levels that exceed specific water quality discharge criteria• during dewatering, sediments may become suspended in the water, therefore, in-line flocculant treatment and temporary storage of the runoff collected in storage areas and pit water may be used to reduce total suspended solids transferred to the Water Management Pond (Areas 3 and 5), prior to release to the environment• lake dewatering discharge will be sampled regularly to monitor for compliance with discharge criteria, and any water not meeting the criteria will be stored within the controlled Water Management Pond• as a contingency scenario, the Project is capable of operating without discharge beyond the controlled areas of the Kennady Lake watershed after initial lake dewatering is complete• direct discharge flow rates to Area 8 will be restricted to 1-in-2 year flood levels to eliminate erosion concerns	Environmental Design Features Monitoring	Construction Operations
And			
8.6.2.3 – Secondary Pathways(continued)			

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And 8.6.2.2 – Pathways with No Linkage And	Dewatering of Area 7 and pumping to Area 8 may change water quality, and affect aquatic health and fish: <ul style="list-style-type: none">• direct discharge of clean water to Area 8 while water quality discharge criteria are met; discharge from Area 7 is proposed to cease after Year -2• discharge during the first phase of dewatering of Kennady Lake will be monitored so that the lake surface in the dewatering area remains at a level that limits suspended sediment concentrations reaching levels that exceed specific water quality discharge criteria• during dewatering, sediments may become suspended in the water, therefore, in-line flocculant treatment and temporary storage of the runoff collected in storage areas and pit water may be used to reduce total suspended solids transferred to the Water Management Pond (Areas 3 and 5), prior to release to the environment• lake dewatering discharge will be sampled regularly to monitor for compliance with discharge criteria, and any water not meeting the criteria will be stored within the controlled Water Management Pond• as a contingency scenario, the Project is capable of operating without discharge beyond the controlled areas of the Kennady Lake watershed after initial lake dewatering is complete• direct discharge flow rates to Area 8 will be restricted to 1-in-2 year flood levels to eliminate erosion concerns	Management Environmental Design Features Monitoring	Construction Operations
8.6.2.3 – Secondary Pathways(continued)	Reduction in upper watershed flow to Area 8 may change surface water levels, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">• direct discharge of clean water to Area 8 while water quality discharge criteria are met; discharge from Area 7 is proposed to cease after Year -2• discharge during the first phase of dewatering of Kennady Lake will be monitored so that the lake surface in the dewatering area remains at a level that limits suspended sediment concentrations reaching levels that exceed specific water quality discharge criteria• during dewatering, sediments may become suspended in the water, therefore, in-line flocculant treatment and temporary storage of the runoff collected in storage areas and pit water may be used to reduce total suspended solids transferred to the Water Management Pond (Areas 3 and 5), prior to release to the environment• lake dewatering discharge will be sampled regularly to monitor for compliance with discharge criteria, and any water not meeting the criteria will be stored within the controlled Water Management Pond• as a contingency scenario, the Project is capable of operating without discharge beyond the controlled areas of the Kennady Lake watershed after initial lake dewatering is complete• direct discharge flow rates to Area 8 will be restricted to 1-in-2 year flood levels to eliminate erosion concerns	Management Environmental Design Features Monitoring	Construction Operations
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And 8.6.2.2 – Pathways with No Linkage And 8.6.2.3 – Secondary Pathways(continued)	Release of sediment during construction of dykes in the A, B, D and E watersheds may change water and sediment quality, and affect fish habitat and fish: <ul style="list-style-type: none">• all mine rock used to construct the dykes will be NAG• construction of dykes will raise the water level in various areas and subsequently create new fish habitat• preparation of shoreline areas to be flooded by selectively removing vegetation to limit organic loading from decaying vegetation to the water column• cobble and boulder placement to reduce erosion potential• silt curtains will be placed upstream and downstream of the construction area to control the release of suspended sediments• implementation of a quality assurance program during construction of each of the dykes so that construction-sensitive features of the design are achieved; the specific requirements and testing frequencies for the quality assurance process will be set out in the Construction Specifications prepared during final designs• monitoring of the performance of the dykes throughout their construction and operating life; instrumentation including piezometers, thermistors, and survey monitoring markers together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidents• active monitoring and maintenance plan for the new shorelines associated with the raised lakes	Management Environmental Design Features Monitoring	Construction Operations

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And 8.6.2.2 – Pathways with No Linkage And 8.6.2.3 – Secondary Pathways(continued)	Changes to permafrost conditions in the flooded shoreline zone of the raised lakes due to increased water levels may lead to erosion and affect fish habitat <ul style="list-style-type: none">• all mine rock used to construct the dykes will be NAG• construction of dykes will raise the water level in various areas and subsequently create new fish habitat• preparation of shoreline areas to be flooded by selectively removing vegetation to limit organic loading from decaying vegetation to the water column• cobble and boulder placement to reduce erosion potential• silt curtains will be placed upstream and downstream of the construction area to control the release of suspended sediments• implementation of a quality assurance program during construction of each of the dykes so that construction-sensitive features of the design are achieved; the specific requirements and testing frequencies for the quality assurance process will be set out in the Construction Specifications prepared during final designs• monitoring of the performance of the dykes throughout their construction and operating life; instrumentation including piezometers, thermistors, and survey monitoring markers together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidents• active monitoring and maintenance plan for the new shorelines associated with the raised lakes	Management Environmental Design Features Monitoring	Construction Operations
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And 8.6.2.2 – Pathways with No Linkage And 8.6.2.3 – Secondary Pathways(continued)	Alteration of water levels in Lakes A3, D2, D3, and E1 may result in shoreline erosion, re-suspension of sediment and sedimentation, and affect water and sediment quality, fish habitat and fish: <ul style="list-style-type: none">• all mine rock used to construct the dykes will be NAG• construction of dykes will raise the water level in various areas and subsequently create new fish habitat• preparation of shoreline areas to be flooded by selectively removing vegetation to limit organic loading from decaying vegetation to the water column• cobble and boulder placement to reduce erosion potential• silt curtains will be placed upstream and downstream of the construction area to control the release of suspended sediments• implementation of a quality assurance program during construction of each of the dykes so that construction-sensitive features of the design are achieved; the specific requirements and testing frequencies for the quality assurance process will be set out in the Construction Specifications prepared during final designs• monitoring of the performance of the dykes throughout their construction and operating life; instrumentation including piezometers, thermistors, and survey monitoring markers together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidents• active monitoring and maintenance plan for the new shorelines associated with the raised lakes	Management Environmental Design Features Monitoring	Construction Operations

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And 8.6.2.2 – Pathways with No Linkage And	Alteration of the A, B, D and E watershed areas and flow paths may change flows, water levels, and channel/bank stability in the Kennady Lake watershed, and affect water and sediment quality, fish habitat and fish: <ul style="list-style-type: none">all mine rock used to construct the dykes will be NAGconstruction of dykes will raise the water level in various areas and subsequently create new fish habitatpreparation of shoreline areas to be flooded by selectively removing vegetation to limit organic loading from decaying vegetation to the water columncobble and boulder placement to reduce erosion potentialsilt curtains will be placed upstream and downstream of the construction area to control the release of suspended sedimentsimplementation of a quality assurance program during construction of each of the dykes so that construction-sensitive features of the design are achieved; the specific requirements and testing frequencies for the quality assurance process will be set out in the Construction Specifications prepared during final designsmonitoring of the performance of the dykes throughout their construction and operating life; instrumentation including piezometers, thermistors, and survey monitoring markers together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidentsactive monitoring and maintenance plan for the new shorelines associated with the raised lakes	Management Environmental Design Features Monitoring	Construction Operations
8.6.2.3 – Secondary Pathways(continued)	Release or generation of nutrients, mercury, or other substances into Lakes A3, D2, D3, and E1 from flooded sediments and vegetation may change water quality, and affect aquatic health and fish: <ul style="list-style-type: none">areas to be flooded by raising water levels of Lakes A3, D1, D2, and E1 will be surveyed and where necessary, will be prepared by removing vegetation cover to reduce the release of organic material upon flooding.shoreline areas susceptible to extensive erosion will be armoured by cobbles and boulders to reduce erosion and associated resuspension of fine sediments	Management Environmental Design Features	Construction Operations
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And	Change of flow paths and construction of retention and diversion dykes in the A, B, D, and E watersheds may change fish migration: <ul style="list-style-type: none">diversion channels will be designed to provide spawning and rearing habitat, and permit fish passage	Environmental Design Features	Construction Operations
8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1	Removal of bedrock and kimberlite material from the active mining of pits may change groundwater quantity in the Kennady Lake watershed, and the water level in small lakes in the watershed: <ul style="list-style-type: none">mined-out pits will be augmented by fresh water during refilling	Environmental Design Features	Construction Operations
And	Removal of saline groundwater inflows during pit development to the WMP may affect water quality in Areas 3 to 7, and affect aquatic health and fish: <ul style="list-style-type: none">water inflow to the dewatered area of Kennady Lake will not be directly released to Area 8; water will be sequestered into Areas 3 and 5, and later into the process plant or the Fine PKC Facility and then to the backfilled mine pitsbackfilling the mined-out pits with PK and mine rock will allow for containment of deep groundwater in the open pitsstorage ponds located in the open pits will be capable of holding the maximum predicted daily base case groundwater inflow, in addition to the 1-in-100 wet year freshet event	Environmental Design Features	Construction Operations
8.6.2.2 – Pathways with No Linkage And	Blasting and excavation near fish-bearing lakes may result in pressure changes and vibrations, and affect fish : <ul style="list-style-type: none">all blasting and excavation will occur in the dewatered areas of Kennady Lake where no water or fish will be present	Environmental Design Features	Construction Operations
8.6.2.3 – Secondary Pathways(continued)	Impingement and entrainment of fish in potable water intake pumps in Area 8 may cause injury and mortality to fish and affect fish populations: <ul style="list-style-type: none">appropriate sized fish screens following DFO guidelines will be used on the pump intakes to limit fish entrained	Environmental Design Features	Construction Operations
	Extraction of potable water requirements for the Project may change surface water levels in Area 8, and affect fish habitat: <ul style="list-style-type: none">the process plant design is based on the recycling and reusing of waste streams (i.e., WMP) and rain water, where practical, to limit fresh water usage	Environmental Design Features	Construction Operations

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1	Treated effluent discharge from the sewage treatment plant (STP) to the WMP may change water quality in the Areas 3 to 7, and affect aquatic health and fish: <ul style="list-style-type: none">treated liquid effluent from the sewage treatment system will be directed to Area 3 in Year -1, and then to the process plant for disposal with the fine PK stream from Year 1 onwater in the WMP will not be directly released to Area 8; water will be sequestered into the WMP, and later into the process plant or the Fine PKC Facility and then to the backfilled mine pitssewage sludge will be dewatered and land filled on-site	Environmental Design Features	Construction Operations
And 8.6.2.2 – Pathways with No Linkage And 8.6.2.3 – Secondary Pathways(continued)	Changes to the drainage network within the Kennady Lake watershed due to the Project may change surface water runoff and cause soil erosion, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">where practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsrunoff from stockpiles, the mine rock piles and the Coarse PK Pile and the Fine PKC Facility, the ammonium nitrate storage areas, and mine pits piles will be contained within the managed areas of Kennady Lakeall site runoff will be conveyed directly to the WMP or via collection ponds within areas of Kennady Lake, which will act as a control basin for storage of waterdeeper basins in the dewatered areas of Kennady Lake will act as collection ponds for natural and site runoffrunoff stored in collection ponds may be pumped to the WMP each year, prior to the onset of winter, to optimize storage for the following year's freshetrunoff from the mine rock piles is designed to remain within the controlled watershed and to take advantage of natural drainages present; till from ongoing pit stripping will be used to cover PAG rock placed within the interior of the mine rock and PK repositories to prevent water from penetrating into that portion storing the reactive rock materialoverburden will provide a low permeability barrier that will limit infiltration and encourage water to flow over the surface of the mine rock and coarse PK piles, rather than through themerosion and sediment control practices (e.g., silt fences, runoff management) will be used as required to limit erosion of topsoil and overburden stockpiles, and corresponding changes in water quality from sediment loadingfilter cloth silt fences will be used in natural and enhanced surface drainage courses at the airstrip to remove sediments, and these sediment traps will be maintained as requirederosion protection materials will be used to line downstream natural channels (or engineered channel when required) to limit erosion along the flow paths to the mined-out Tuzo Pit	Management Environmental Design Features Monitoring	Construction Operations
	Seepage of pore water through, or underneath, incompletely frozen dykes to adjacent watersheds may change water quality in the Kennady Lake watershed, and affect aquatic health and fish: <ul style="list-style-type: none">temporary and permanent dykes will be constructed with a liner keyed into competent frozen ground (saturated inorganic permafrost) or bedrockinternal retention dykes will be constructed with a wide till core to control seepage; any seepage will be collected and pumped back to the source reservoir as requiredpermafrost will be preserved in foundation soils beneath dykes by constructing structures during the winter when the active layer is frozenperformance of the dykes will be monitored throughout their construction and operating life; to confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructed	Environmental Design Features Monitoring	Construction Operations
	Close-circuiting of Areas 2 to 7 may change water quality in Area 8, and affect aquatic health and fish in Area 8 <ul style="list-style-type: none">construction of Dyke A to isolate Areas 2 to 7 from Area 8	Environmental Design Features	Construction Operations

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And 8.6.2.2 – Pathways with No Linkage And 8.6.2.3 – Secondary Pathways(continued)	<p>Deposition of dust from fugitive dust sources may change water quality and sediment quality, and affect aquatic health and fish:</p> <ul style="list-style-type: none">• regular watering of exposed lake bottoms, roads, the airstrip, and laydown areas will facilitate dust suppression around the site• speed limits will be enforced to assist in reducing dust generation• the compact layout of the surface facilities will limit the area disturbed at construction and reduce traffic around the site• segregation of traffic to reduce interaction of heavy equipment and traffic load (i.e., heavy equipment will be isolated to the mining area, and haulage traffic will be limited to the mine site and mine access road)• personnel arriving at or leaving the site will be transported by bus therefore reducing the amount of traffic between the airstrip and the accommodation complex.• heavy equipment and mine vehicles will undergo regular maintenance of engines, maintain emission guidelines for internal combustion engines, and use low-sulphur diesel fuel• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies and equipment will be tuned for optimum fuel-energy efficiency	Management Environmental Design Features	Construction Operations
	<p>Air emission and deposition of sulphur dioxide [SO₂], nitrogen oxides [NO_x], particulate matter [PM], and total suspended particulates [TSP] may change water and sediment quality, and affect aquatic health and fish:</p> <ul style="list-style-type: none">• regular watering of exposed lake bottoms, roads, the airstrip, and laydown areas will facilitate dust suppression around the site• speed limits will be enforced to assist in reducing dust generation• the compact layout of the surface facilities will limit the area disturbed at construction and reduce traffic around the site• segregation of traffic to reduce interaction of heavy equipment and traffic load (i.e., heavy equipment will be isolated to the mining area, and haulage traffic will be limited to the mine site and mine access road)• personnel arriving at or leaving the site will be transported by bus therefore reducing the amount of traffic between the airstrip and the accommodation complex.• heavy equipment and mine vehicles will undergo regular maintenance of engines, maintain emission guidelines for internal combustion engines, and use low-sulphur diesel fuel• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies and equipment will be tuned for optimum fuel-energy efficiency	Management Environmental Design Features	Construction Operations

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.1 – Potential Pathways during Construction and Operations Table 8.6-1 And 8.6.2.2 – Pathways with No Linkage And 8.6.2.3 – Secondary Pathways(continued)	<p>Spills within the Project footprint (e.g., petroleum products, reagents, wash-down) may change water and sediment quality in the Kennady Lake watershed, and affect aquatic health, fish habitat and fish:</p> <ul style="list-style-type: none">• petroleum products will only be handled by mine personnel who have received appropriate training• an emergency and spill contingency plan will be developed• spill containment supplies will be in designated areas• any spills will be isolated and immediately cleaned up by a trained spill response team consisting of on-site personnel, which will be available for rapid response• mine vehicles and heavy equipment will be maintained to operational standards• all fuel storage tanks will be designed and constructed according to the American Petroleum Institute (API) 650 standard; a lined and dyked containment area around these tanks will be provided to contain any potential fuel spills. The design of the containment area will be based on the requirements of the Canadian Council of the Ministers of Environment (CCME) Environmental Code of Practice for Above-Ground Storage Tanks Systems Containing Petroleum Products (CCME 2003), the National Fire Code of Canada, and any other standards that are required. The containment area will be sized to hold 110% of the volume of the largest storage tank and will include a gravel base with a continuous high-density polyethylene liner sheet installed under the tanks and the internal sides of the berm• a fuel unloading pumping module will be installed within a spill containment area adjacent to the fuel storage tank farm• aviation fuel will be stored in self-contained, Underwriters Laboratories Canada (ULC)-rated envirotanks mounted on an elevated pad at the air terminal shelter; aviation fuel for helicopters will be stored in sealed drums inside a lined berm area near the airstrip• to prevent accumulation and/or runoff of de-icing fluids at the airstrip from aircraft de-icing operations, aircraft will be sprayed in a specified area on the strip that will be equipped with swales to collect excess fluid; any affected soil and gravel resulting from spills will be collected and transferred to the landfarm and puddles of de-icing fluid in the swales will be removed by vacuum truck and deposited into waste drums for shipment off-site• waste oil will be collected and stored in the waste oil storage tank and incinerated for heat generation or used with explosives, if it is not shipped off-site for recycling• the grease used in the diamond recovery process on-site will be recycled as much as possible• chemicals such as glycol, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums and stored in suitable sealed containers in the waste transfer area• chemicals that cannot be incinerated will be shipped off-site for disposal or recycling• hazardous, non-combustible waste and contaminated materials will be temporarily stored in the waste storage transfer area in sealed steel or plastic, wildlife-resistant drums, and shipped off-site for disposal or recycling• the waste transfer storage area will include a lined and enclosed pad for the collection and subsequent return of hazardous waste to suppliers or to a hazardous waste disposal facility• emulsion materials will be stored at the emulsion plant where spills will be 100% contained within the building• processing of the kimberlite ore will be mechanical, with minimal use of chemicals	Management Environmental Design Features	Construction Operations

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.5 – Potential Pathways during Closure Table 8.6-4	Development of fish habitat compensation works to account for HADD associated with the Project: <ul style="list-style-type: none">fish habitat compensation developed in consultation with DFO and other regulatory agencies	Management	Closure
And 8.6.2.6 – Pathways with No Linkage	Removal of project infrastructure (e.g., roads, airstrip, dykes, buildings) may change flows, water levels, and channel/bank stability in streams and small lakes in the Kennady Lake watershed, and affect, water quality, fish habitat and fish: <ul style="list-style-type: none">to the extent possible, all disturbed areas will be reclaimed and the surface stabilizedsurfaces will be re-graded and till or mine rock will be placed, as appropriate, to prevent dusting and water erosion, and stabilizing, as required, against thermokarst from freeze-thaw processes within the active layerdrainage patterns will be re-established as close to pre-operational conditions as possible, with drainage ditches contoured or backfilled as appropriate to remove any hazards to wildlife	Environmental Design Features	Closure
And 8.6.2.7 – Secondary Pathways(continued)	The Project may change the long-term hydrology in the Kennady Lake watershed: <ul style="list-style-type: none">to the extent possible, all disturbed areas will be reclaimed and the surface stabilizedsurfaces will be re-graded and till or mine rock will be placed, as appropriate, to prevent dusting and water erosion, and stabilizing, as required, against thermokarst from freeze-thaw processes within the active layerdrainage patterns will be re-established as close to pre-operational conditions as possible, with drainage ditches contoured or backfilled as appropriate to remove any hazards to wildlife	Environmental Design Features	Closure
	Removal of dykes may change flows, water levels, and channel/bank stability in streams and small lakes in the B, D, and E watershed, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">watershed will be reconnected to Kennady Lake along previous connecting streams where possibleany diversion channels will be designed to provide spawning and rearing habitat, and permit fish passagemonitoring of new shorelines associated with the reduced lake levels	Environmental Design Features Monitoring	Closure
	Removal of the temporary dykes for the realignment of diverted B, D, and E watersheds to Kennady Lake may release sediment and change water and sediment quality, and affect fish habitat and fish: <ul style="list-style-type: none">watershed will be reconnected to Kennady Lake along previous connecting streams, but where necessary cobble and boulder placement will be used to reduce erosion potentialplace erosion protection materials and processes over the natural downstream channels to limit erosion along the flow path to Kennady Lakesilt curtains will be placed upstream and downstream of the dykes to control the release of suspended sediments during their deconstruction/breachingwater levels in lakes will be drawn down by pumping or siphoning water to Kennady Lake prior to removal of dykesdykes will be removed during low- or no-flow periods to allow work to be completed “in the dry”	Management Environmental Design Features	Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.5 – Potential Pathways during Closure Table 8.6-4	Removal of diversions and temporary dykes in B, D, and E watersheds may result in changes to fish migration <ul style="list-style-type: none">watershed will be reconnected to Kennady Lake along previous connecting streams where possibleany diversion channels will be designed to provide spawning and rearing habitat, and permit fish passagefish salvage will occur where appropriate prior to breaching and removing the dykes and constructed diversion channels	Management Environmental Design Features	Closure
And 8.6.2.6 – Pathways with No Linkage	Refilling dewatered areas of Kennady Lake may alter permafrost conditions, and affect fish habitat: <ul style="list-style-type: none">areas in Kennady Lake will not be completely dewatered for the duration of operations. Refilling of Areas 6 and 7 will be commenced in Year 6 when mining of 5034 is complete. Dewatering of Area 4 will start in Year 4	Environmental Design Features	Closure
And 8.6.2.7 – Secondary Pathways(continued)	Release of groundwater into the refilled Tuzo Pit may change groundwater quality in the pit, and affect water quality and fish in Kennady Lake: <ul style="list-style-type: none">Tuzo Pit will be refilled with surface water from Area 3 and 5 to minimize groundwater inflow.	Environmental Design Features	Closure
	Pumping water from Lake N11 to Kennady Lake to supplement refilling may change water and sediment quality in Kennady Lake, and affect aquatic health and fish: <ul style="list-style-type: none">use of supplemental inflow from Lake N11 using a pipeline and pumping system to divert water directly to Area 3water quality of supplemental inflow will be similar to water quality of Kennady Lake prior to dewatering	Environmental Design Features Monitoring	Closure
	Realignment of B, D, and E watersheds for the refilling Kennady Lake may result in effects to fish: <ul style="list-style-type: none">exclusion measures will be used to limit the initial migration of large-bodied fish from the B, D, and E watersheds into Kennady Lake during refilling once the dykes have been removed	Environmental Design Features	Closure
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.5 – Potential Pathways during Closure Table 8.6-4	Erosion of lake-bottom sediments in Area 3 from the pump discharge during the refilling of Kennady Lake may change water quality, and affect fish habitat and fish: <ul style="list-style-type: none">designing outfalls/diffusers so that they sit high in the water column and actively disperse piped discharge to prevent erosion of the lake-bed sedimentAreas 3 and 5 will remain part of the closed-circuited system until the lake is filled and water quality meets criteria for reconnection with Area 8	Environmental Design Features Monitoring	Closure
And 8.6.2.6 – Pathways with No Linkage	Continued isolation of Area 8 during refilling and recovery period may change surface water flows, water levels in Area 8, and affect and water quality, fish habitat and fish: <ul style="list-style-type: none">refilling of Kennady Lake will be supplemented by pumping from Lake N11 to reduce the re-fill period to approximately 8 years	Environmental Design Features	Closure
And 8.6.2.7 – Secondary Pathways(continued)	Release of sediment into Areas 7 and 8 during the removal of Dyke A may change water and sediment quality, and affect fish habitat and fish: <ul style="list-style-type: none">silt curtains will be placed upstream and downstream of the construction area to control the release of suspended sediments	Environmental Design Features	Closure
	Underwater noise and vibrations during the breaching and removal of Dyke A may affect fish: <ul style="list-style-type: none">use of machinery instead of explosives to reduce underwater noise and vibrationif explosives are required, DFO will be consulted, and their use will be in accordance with applicable standards and guidelines	Management Environmental Design Features	Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.5 – Potential Pathways during Closure Table 8.6-4	Changes in B, D, and E watershed areas and flow paths may result in alteration of flows, water levels, and channel/bank stability in the Kennady Lake watershed, which can affect water and sediment quality, fish habitat and fish: <ul style="list-style-type: none"> monitoring of new shorelines associated with the reduced lake levels 	Monitoring	Closure
And 8.6.2.6 – Pathways with No Linkage	Changes to water levels in Lakes D2, D3, and E1 may lead to shoreline erosion, re-suspension of sediments and sedimentation, and affect water quality, fish habitat and fish: <ul style="list-style-type: none"> monitoring of new shorelines associated with the reduced lake levels 	Monitoring	Closure
And 8.6.2.7 – Secondary Pathways(continued)	Reconnection of Areas 3 to 7 to Area 8 may change water flows and water levels in Area 8, and affect fish habitat and fish: <ul style="list-style-type: none"> breaching and removal activities will be limited to daylight hours and expected to be completed in one month breaching and removal activities will be completed using heavy machinery, such as long-armed backhoes, with explosives used only if necessary 	Management Environmental Design Features	Closure
	Reconnection of Areas 3 to 7 with Area 8 may change water quality in Area 8, and affect aquatic health and fish: <ul style="list-style-type: none"> Dyke A will be breached and removed when water quality in Kennady Lake meets specific criteria 	Environmental Design Features Monitoring	Closure
	Seepage from the mine rock and coarse PK piles may change water quality, and affect aquatic health and fish: <ul style="list-style-type: none"> at closure, the mine rock piles will be re-shaped and a 1 m layer of NAG mine rock will placed on the outer surface of the pile to prevent erosion. PAG rock will comprise only a small proportion of the overall mine rock tonnage and will be sequestered within the mine rock storage facilities. the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock. the Coarse PK Pile, adjacent to Area 4, will be shaped and covered with a layer of mine rock of a minimum of 1 m to limit surface erosion. Permafrost conditions are anticipated to be established in the pile by the end of mine life. runoff from the Coarse PK Pile and mine rock piles will be managed to mitigate downstream effects on flows, water levels and channel bank stability. Perimeter ditches will collect facility runoff, intercept upstream runoff and convey it to a discharge point. Natural receiving channels that convey water to Kennady Lake will be armoured to prevent erosion if necessary, or engineered channels will be constructed. 	Management Environmental Design Features	Closure
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.5 – Potential Pathways during Closure Table 8.6-4 And 8.6.2.6 – Pathways with No Linkage And 8.6.2.7 – Secondary Pathways(continued)	Alteration of drainage patterns to Kennady Lake due to the mine rock and coarse PK piles may change water flows, water levels, and channel/bank stability in streams and small lakes, and can affect water and sediment quality, fish habitat and fish: <ul style="list-style-type: none"> at closure, the mine rock piles will be re-shaped and a 1 m layer of NAG mine rock will placed on the outer surface of the pile to prevent erosion. PAG rock will comprise only a small proportion of the overall mine rock tonnage and will be sequestered within the mine rock storage facilities. the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock. the Coarse PK Pile, adjacent to Area 4, will be shaped and covered with a layer of mine rock of a minimum of 1 m to limit surface erosion. Permafrost conditions are anticipated to be established in the pile by the end of mine life. runoff from the Coarse PK Pile and mine rock piles will be managed to mitigate downstream effects on flows, water levels and channel bank stability. Perimeter ditches will collect facility runoff, intercept upstream runoff and convey it to a discharge point. Natural receiving channels that convey water to Kennady Lake will be armoured to prevent erosion if necessary, or engineered channels will be constructed. 	Management Environmental Design Features	Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.6 – Pathway Analysis 8.6.2 - Results 8.6.2.5 – Potential Pathways during Closure Table 8.6-4 And 8.6.2.6 – Pathways with No Linkage And 8.6.2.7 – Secondary Pathways(continued)	<p>Seepage through filter dyke L may change water quality in Kennady Lake, and affect aquatic health and fish:</p> <ul style="list-style-type: none">At closure, the Fine PKC Facility (Areas 1 and 2) will be graded and 1 to 2 m of NAG mine rock will be placed on the outer surface of the pile to prevent erosion.The final shaping of the facility will be designed to limit ponding of water over the mine rockThermistors will be installed within the mine rock piles to monitor the progression of permafrost development.Permafrost development in the Fine PKC Facility and underlying talik is expected to occur over time.Thermistors will be installed in the Fine PKC Facility to monitor the formation of permafrost in the solids.Runoff from the Fine PKC Facility will be managed to mitigate downstream effects on flows, water levels and channel bank stability. Perimeter ditches will collect facility runoff , intercept upstream runoff and convey it to a discharge point. Natural receiving channels that convey water to Kennady Lake will be armoured to prevent erosion if necessary, or engineered channels will be constructed.	Management Environmental Design Features Monitoring	Closure
	<p>Alteration of drainage patterns to Kennady Lake from the Fine PKC Facility may change water flows, water levels, and channel/bank stability in streams and small lakes, and affect water and sediment quality and fish:</p> <ul style="list-style-type: none">At closure, the Fine PKC Facility (Areas 1 and 2) will be graded and 1 to 2 m of NAG mine rock will be placed on the outer surface of the pile to prevent erosion.The final shaping of the facility will be designed to limit ponding of water over the mine rockThermistors will be installed within the mine rock piles to monitor the progression of permafrost development.Permafrost development in the Fine PKC Facility and underlying talik is expected to occur over time.Thermistors will be installed in the Fine PKC Facility to monitor the formation of permafrost in the solids.Runoff from the Fine PKC Facility will be managed to mitigate downstream effects on flows, water levels and channel bank stability. Perimeter ditches will collect facility runoff , intercept upstream runoff and convey it to a discharge point. Natural receiving channels that convey water to Kennady Lake will be armoured to prevent erosion if necessary, or engineered channels will be constructed.	Management Environmental Design Features Monitoring	Closure
	<p>Seepage from backfilled PK material in pits may change water quality in Kennady Lake, and affect aquatic health and fish:</p> <ul style="list-style-type: none">Hearne pit will be partially backfilled with fine PK after Year 7the backfilled pit will be 150 m deepthe volume of high TDS water overlying the fine PK will allow for an accelerated refilling at closure and promote the development of a chemocline above the settled fine PK	Environmental Design Features	Closure
	<p>Restocking Kennady Lake with fish may change brood-stock fish population and affect genetics or parasites of fish in Kennady Lake:</p> <ul style="list-style-type: none">maintain an annual sustainable harvest rate from each potential brood stock lake to reduce potential for fish mortality and maintain trophic stabilitystocking of Kennady Lake with fish from lakes within the same watershed as Kennady Lake (i.e., the Kirk Lake watershed) will maintain similar genetic make-up and minimize susceptibility to disease and maximize adaptability to new environmentconduct pathology examinations of fish in potential source lakes to reduce the potential of transferring diseased or parasite-infested fish to Kennady Lake	Management Environmental Design Features Monitoring	Closure
8.8.4.1.1 – Effects to Water Quality in Areas 3 to 7 After Refilling Activities 8.8.4.1.2 – Effects to Water Quality in Area 8 After Refilling Activities	<p>De Beers is currently evaluating a variety of environmental design features and mitigation measures to limit contact between site runoff waters and the fine PK located within the Fine PKC Facility and other potential sources. These environmental design features and mitigation measures include, for example:</p> <ul style="list-style-type: none">Promotion of permafrost development in the Fine PKC FacilityUse of low permeability cover material to limit infiltration into key areas, such s the Fine PKC Facility. <p>The effectiveness of these environmental design features and mitigation measures is uncertain and requires further analysis. Accordingly, the amount of phosphorus that may be released into the environment is uncertain at this time. As a result, potential effects related to phosphorus have not been presented and will not be available until such time as additional analysis is completed. This analysis will be provided to the Panel in 2011 following additional work that will be undertaken over the next few months.</p>	Management	Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)	
8.12.2.1.1 - Effects of Changes in Water Quality and Fish Tissue Quality to Wildlife Health	De Beers is committed to further study of this potential issue in 2011, and will incorporate mitigative strategies into the Project design to the extent required to maintain boron levels in Kennady Lake below those that may be of environmental concern.	Management	Construction Operations Closure	
8.12.2.2.1 - Effects of Changes in Water Quality and Fish Tissue Quality to Human Health	De Beers is committed to: <ul style="list-style-type: none">• further evaluating the assumptions used to develop the water quality predictions outlined herein;• updating the human health assessment based on any changes to these assumptions; and• implementation of the environmental design features and mitigation measures necessary to maintain metal levels in Kennady Lake below those that would be of concern.	Management	Construction Operations Closure	
8.15 - Uncertainty 8.15.2 – Water Quality Modelling	De Beers is committed to complete monitoring and testing using standard field and laboratory procedures during the Project operation to evaluate groundwater quantity and quality. Where necessary, the water quality and quantity input profiles assigned to the loadings for groundwater will be revised and Project effects will be re-assessed, as appropriate. Where required, adaptive management strategies will be adopted	Management Monitoring	Construction Operations Closure	
8.13 – Residual Effects Summary 8.13.1 – Hydrology 8.13.1.1 – Construction and Operations	The Fine PKC Facility, Coarse and mine rock piles will be located entirely within the controlled area boundary and all drainage will be managed as part of the closed-circuit site water management system.	Environmental Design Features	Construction Operations	
8.13 – Residual Effects Summary 8.13.3 – Aquatic Health	During construction and operation, predicted maximum concentrations of suspended solids and some metals may increase above water quality guidelines because of dust and metal deposition in some lakes, some of which are fish-bearing lakes. Given the conservatism in the predicted concentrations, and the length of the exposure to elevated concentrations, the potential for adverse effects from dust and metals deposition is considered to be low. Follow-up monitoring will be undertaken to confirm this evaluation.	Monitoring	Closure	
8.13 – Residual Effects Summary 8.13.3 – Aquatic Health	Despite the predicted exceedances of the CEB, the potential for copper to cause adverse effects to aquatic life in Kennady Lake and Area 8 is considered to be low. The CEB for copper is based on the CCME guideline, which is intended to be conservative and protective of the most sensitive species. Follow-up monitoring will be undertaken to confirm this evaluation.	Monitoring	Closure	
8.13 – Residual Effects Summary 8.13.3 – Aquatic Health	The potential for iron to cause adverse effects to aquatic life in Kennady Lake is considered to be low. Maximum total and dissolved iron concentrations in Kennady Lake after refilling and Dyke A is breached are predicted to be slightly above the corresponding CEB. The CEB for iron is based on the CCME guideline, which is intended to be conservative and protective of the most sensitive species. Follow-up monitoring will be undertaken to confirm this evaluation.	Monitoring	Closure	
8.13 – Residual Effects Summary 8.13.3 – Aquatic Health	Strontium is conservatively projected to be higher than the CEB in Kennady Lake and Area 8 during closure and post-closure conditions. However, the CEB is highly conservative, and the actual likelihood of adverse effects to aquatic life is therefore highly uncertain. The CEB was based on a single study of rainbow trout embryos (Birge et al. 1979) that reported effects at strontium concentrations several orders of magnitude lower than any other study, including studies with rainbow trout and other fish species. Follow-up monitoring will be undertaken to confirm this evaluation.	Monitoring	Closure	
8.16 – Monitoring and Follow-up	Compliance inspection will consist of programs designed to confirm the implementation of approved design standards and the environmental design features described in the EIS.	Monitoring	Construction Operations Closure	
8.16 – Monitoring and Follow-up	Follow-up monitoring will consist of programs designed to verify key inputs to the effects analysis, such as the quality of the influent waters to the Water Management Pond (WMP; Areas 3 and 5), as well as monitoring compensation habitat to confirm the no net loss objective has been achieved. Results of follow-up monitoring will be used to reduce the level of uncertainty related to impact predictions.	Monitoring	Construction Operations Closure	
8.16 – Monitoring and Follow-up	Effects monitoring will involve programs focused on the receiving environment, with the objectives of verifying the conclusions of the EIS, evaluating the short-term and long-term effects on the physical, chemical and biological components of the aquatic ecosystem of Kennady Lake, estimating the spatial extent of effects, and providing the necessary input to adaptive management.	Monitoring	Construction Operations Closure	

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
8.16 – Monitoring and Follow-up	Follow-up monitoring and compliance inspection programs will be focused on the Gahcho Kué Project (Project) site, with little to no work occurring beyond the immediate Project area. Effects monitoring programs will encompass a larger area; however, they are unlikely to extend beyond Kirk Lake. Anticipated monitoring activities in the Kennady Lake watershed are described in this section.	Monitoring	Construction Operations Closure
8.16.2 – Potential Monitoring Activities 8.16.2.1 – Compliance Inspection	Compliance inspection will verify that Project components are built to approved design standards and that environmental design features described in the EIS are incorporated. As each component of the Project is built, constructed features will be inspected to show that they comply with standard protocols, and that any variance from standard protocols has been completed with regulatory permission (as appropriate). A check list will also be developed to show that agreed-upon environmental design features are constructed as required. Compliance monitoring will extend throughout the life of the Project.	Monitoring	Construction Operations Closure
8.16.2 – Potential Monitoring Activities 8.16.2.2 – Follow-up Monitoring	Follow-up monitoring activities are expected to include water sampling in and around the South and West Mine Rock Piles, the Coarse PK Pile, the Fine Processed Kimberlite Containment (PKC) Facility, and other areas of the Project site to confirm the accuracy of the influent water quality profiles used to complete the effects assessment. Monitoring the progression of freezing within the external facilities will also be completed as part of this monitoring component.	Monitoring	Construction Operations Closure
8.16.2 – Potential Monitoring Activities 8.16.2.3 – Effects Monitoring	Effects monitoring programs will include a Surveillance Network Program (SNP) that focuses primarily on Project site operations as well as a more broadly focused Aquatic Effects Monitoring Program (AEMP). De Beers will develop the scope of the SNP and AEMP in consultation with regulators and interested parties. <i>Details for the Aquatics Monitoring Programs are provided in 8.16.2.4 – Scope of the Aquatics Monitoring Programs</i>	Monitoring	Construction Operations Closure
8.16.2 – Potential Monitoring Activities 8.16.2.3 – Effects Monitoring	Monitoring will also be conducted to evaluate the effectiveness of habitat compensation, and will include evaluation of both physical and biological characteristics.	Monitoring	Construction Operations Closure
9 – Key Line of Inquiry: Downstream Water Effects			
9.4 – Water Management Plan 9.4.4 – Operations	During operations, Project activities associated with the Water Management Plan will be designed to discharge site water to downstream waterbodies only when specific water quality criteria are met. During operations, water for use in the processing plant will be sourced from the WMP and recycled to the greatest extent possible.	Management Environmental Design Feature	Operation
9.6 – Pathway Analysis 9.6.2 - Results 9.6.2.1 – Potential Pathways during Construction and Operations Table 9.6-1	Reduction in watershed areas may change flows, water levels, and channel/bank stability in downstream waterbodies, and affect water quality and fish habitat and fish: <ul style="list-style-type: none">compact layout of the surface facilities within the Kennady Lake watershed will limit the area that is disturbed by construction and operation	Management Environmental Design Feature	Construction Operation
	Alteration of watershed flow paths may change flows, water levels, and channel/bank stability in downstream waterbodies, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">areas to be flooded by raising water levels of Lakes A3, D1, D2, and E1 will be surveyed and where necessary, will be prepared to reduce the release of organic material upon floodingshoreline areas susceptible to extensive erosion will be armoured by cobbles and boulders to reduce erosion and associated resuspension of fine sediments	Management Environmental Design Features	Construction Operation
	Changes in flow paths from diversions may increase shoreline erosion, re-suspension of sediments and sedimentation in downstream waterbodies, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">areas to be flooded by raising water levels of Lakes A3, D1, D2, and E1 will be surveyed and where necessary, will be prepared to reduce the release of organic material upon floodingshoreline areas susceptible to extensive erosion will be armoured by cobbles and boulders to reduce erosion and associated resuspension of fine sediments	Management Environmental Design Features	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
9.6 – Pathway Analysis 9.6.2 - Results 9.6.2.1 – Potential Pathways during Construction and Operations Table 9.6-1	Changes in flow paths may change water quality in the receiving N lakes (i.e., suspended sediments, major ions, metals, and nutrients concentrations), and affect aquatic health and fish: <ul style="list-style-type: none">• areas to be flooded by raising water levels of Lakes A3, D1, D2, and E1 will be surveyed and where necessary, will be prepared to reduce the release of organic material upon flooding• shoreline areas susceptible to extensive erosion will be armoured by cobbles and boulders to reduce erosion and associated resuspension of fine sediments	Management Environmental Design Features	Construction Operation
	Erosion of lake-bottom sediments in Lake N11 and Area 8 from pumped discharge may change water quality and fish habitat in downstream waterbodies, and affect fish habitat and fish: <ul style="list-style-type: none">• pumped discharge to Lake N11 and Area 8 will be directed through properly designed outfalls/diffusers to prevent erosion	Environmental Design Features	Construction Operation
	Dewatering of Kennady Lake to Lake N11 and Area 8 may change flows, water levels, and channel/bank stability in downstream waterbodies, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">• pumped discharge to Lake N11 and Area 8 will only occur while water quality discharge criteria are met• discharge from Area 7 to Area 8 is proposed to cease after Year 2, when water levels in Area 7 drop to a level that turbidity levels exceed discharge criteria• pumped discharge will be directed to the lake environment in Lake N11 and Area 8, and not directly to outlets, to attenuate flow changes	Environmental Design Features Monitoring	Construction Operation
	Dewatering of Kennady Lake to Lake N11 may change water quality (i.e., suspended sediments, major ions, metals, and nutrients concentrations) in downstream waterbodies, and affect aquatic health, and fish habitat and fish: <ul style="list-style-type: none">• dewatering activities will be monitored so that the lake surface remains at a level that limits sediments becoming suspended due to wave action.• lake dewatering discharge will be sampled regularly to monitor for compliance with discharge criteria, and any water not meeting the criteria will be stored within the controlled Water Management Pond• pumped discharge flow rates to Lake N11 and Area 8 will be limited to 1-in-2 year flood levels except at outlets where there is sufficient protection, to eliminate erosion concerns.• pumped discharge from Kennady Lake and Area 8 will be sourced from the surface of the lakes	Management Environmental Design Feature Monitoring	Construction Operation
	Impingement and entrainment of fish in intake pumps during dewatering may cause injury and mortality to fish, and affect downstream fish populations: <ul style="list-style-type: none">• appropriate sized fish screens following DFO guidelines will be used on the pump intakes to limit fish becoming entrained• covering the intake under rock fill will provide a secondary screen• pumping rates will conform with DFO guideline for intake velocities	Management Environmental Design Feature	Construction Operation
	Deposition of dust and metals from fugitive dust sources (i.e., particulate matter [PM], and total suspended particulates [TSP]) may change water quality and sediment quality in downstream waterbodies, and affect aquatic health, fish habitat, and fish: <ul style="list-style-type: none">• regular watering of the exposed lake bottoms, roads, airstrip, and laydown areas will facilitate dust suppression• the compact layout of the surface facilities will limit the area disturbed at construction and reduce traffic around the site• covering of loads will assist in reducing dust deposition• rock crusher will be located inside the processing plant• heavy equipment and mine vehicles will undergo regular maintenance of engines, maintain emission guidelines for internal combustion engines and use low-sulphur diesel fuel	Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
9.6 – Pathway Analysis 9.6.2 - Results 9.6.2.1 – Potential Pathways during Construction and Operations Table 9.6-1	Air emission and deposition of sulphur dioxide [SO ₂], nitrogen oxides [NO _x], may change water quality in downstream waterbodies, and affect aquatic health and fish: <ul style="list-style-type: none">regular watering of the exposed lake bottoms, roads, airstrip, and laydown areas will facilitate dust suppressionthe compact layout of the surface facilities will limit the area disturbed at construction and reduce traffic around the sitecovering of loads will assist in reducing dust depositionrock crusher will be located inside the processing plantheavy equipment and mine vehicles will undergo regular maintenance of engines, maintain emission guidelines for internal combustion engines and use low-sulphur diesel fuel	Environmental Design Feature	Construction Operation
	Spills along the ice-road (e.g., petroleum products, reagents, wash-down) may change surface water quality and sediment quality in downstream waterbodies, and affect aquatic health, fish habitat, and fish: <ul style="list-style-type: none">petroleum products will only be handled by Mine personnel who have received appropriate trainingan emergency and spill contingency plan will be developedhaulage trucks will be maintained to operational standards and will carry standard emergency clean-up kits	Management	Construction Operation
9.6 – Pathway Analysis 9.6.2 - Results 9.6.2.3 – Potential Pathways during Closure Table 9.6-4	Removal of project infrastructure (e.g., roads, airstrip, dykes, buildings) may change flows, water levels, and channel/bank stability in downstream waterbodies, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">to the extent possible, all disturbed areas will be reclaimed and the surface stabilizedsurfaces will be re-graded and, as appropriate, till or mine rock will be used as a cover layer to prevent dusting and water erosion, and stabilizing, as required, against thermokarst from freeze-thaw processes within the active layerdrainage patterns will be re-established as close to pre-operational conditions as possible, with drainage ditches contoured or backfilled as appropriate to remove any hazards to wildlife	Management Environmental Design Feature	Closure
	Seepage from mine rock and PK storage repositories, and the open Tuzo Pit may change water quality in Kennady Lake, and affect water quality in downstream waterbodies, aquatic health, and fish habitat and fish: <ul style="list-style-type: none">to the extent possible, all disturbed areas will be reclaimed and the surface stabilizedsurfaces will be re-graded and, as appropriate, till or mine rock will be used as a cover layer to prevent dusting and water erosion, and stabilizing, as required, against thermokarst from freeze-thaw processes within the active layerdrainage patterns will be re-established as close to pre-operational conditions as possible, with drainage ditches contoured or backfilled as appropriate to remove any hazards to wildlife	Management Environmental Design Feature	Closure
	Reclaimed project area may result in long-term changes to hydrology, water quality, aquatic health and fish in downstream waters: <ul style="list-style-type: none">closure and reclamation plan for the site, including removal of all buildings and infrastructure, realigning diverted upper watersheds B, D, and E, grading storage mine rock and PK storage repositories to manage drainage, using mine rock and till (overburden) to cover disturbed lands and storage repositories	Management Environmental Design Feature	Closure
	Realignment of flow paths in the B, D, and E watersheds may change flows, water levels, and channel/bank stability in streams and lakes in the N lakes watershed, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">the realignment of the B, D and E watersheds will return the watershed flows to their pre-development conditionthe diverted lakes, once the dykes are removed, will flow through existing channels to Kennady Lake	Environmental Design Feature	Closure
	Changes to fish behaviour and migration in N watershed: <ul style="list-style-type: none">streams from the diverted lakes, once the dykes are removed, will flow through existing channels to Kennady Lake	Environmental Design Feature	Closure
	Continuing and permanent diversion of Lake A3 to the N watershed may change flows, water levels, and channel/bank stability in streams and lakes in the N lakes watershed, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">The permanent diversion channel will be sized and designed with rock armour to limit erosion to natural rates	Environmental Design Feature	Closure
	Pumping from Lake N11 for refilling Areas 3 to 7 may change flows, water levels, and channel/bank stability in streams and lakes in the N watershed, and affect water quality, fish habitat and fish: <ul style="list-style-type: none">the volume of water that will be withdrawn from Lake N11 will be limited based on annual flows to avoid creating effects to fish and fish habitat downstream due to changes in lake levels or stream flows	Management	Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
9.6 – Pathway Analysis 9.6.2 - Results 9.6.2.3 – Potential Pathways during Closure Table 9.6-4	Impingement and entrainment of fish in intake pumps in Lake N11 may cause injury and mortality to fish, and affect fish populations: <ul style="list-style-type: none">the water intake in Lake N11 will be designed and located within a rock structure to avoid the need for screenspumping rates will conform with DFO guideline for intake velocities	Management Environmental Design Feature	Closure
	Reconnection of Kennady Lake with Area 8 may increase shoreline erosion, re-suspension of sediments and sedimentation in downstream waterbodies: <ul style="list-style-type: none">silt curtains will be placed upstream and downstream of the construction area to control the release of suspended sediments	Environmental Design Feature	Closure
	Reconnection of Kennady Lake with Area 8 may change the water quality of downstream waterbodies, and affect aquatic health and fish: <ul style="list-style-type: none">Dyke A will not be removed from between Area 7 and 8 unless the water quality of Areas 3 through 7 of Kennady Lake meets specific criteria	Monitoring	Closure
9.11.2.1.1 - Effects of Changes in Water Quality and Fish Tissue Quality to Wildlife Health	De Beers is committed to further study of this potential issue in 2011, and will incorporate mitigative strategies into the Project design to the extent required to maintain boron levels in Kennady Lake below those that may be of environmental concern.	Management	Construction Operations Closure
9.11.2.2.1 - Effects of Changes in Water Quality and Fish Tissue Quality to Human Health	De Beers will update the human health assessment to reflect the effects of these measures. De Beers is also committed to implementing additional environmental design features and mitigation measures to the extent required to protect human health.	Management	Construction Operations Closure
9.12.2 –Water Quality 9.12.2.1.1 - Lake N11 Nutrients Phosphorus	De Beers is currently evaluating a variety of environmental design features and mitigation measures to limit contact between site runoff waters and the fine PK located within the Fine PKC Facility and other potential sources. These environmental design features and mitigation measures include, for example: <ul style="list-style-type: none">Promotion of permafrost development in the Fine PKC Facility.Use of low permeability cover material to limit infiltration into key areas, such as the Fine PKC Facility. The effectiveness of these environmental design features and mitigation measures is uncertain and requires further analysis. Accordingly, the amount of phosphorus that may be released into the environment is uncertain at this time. As a result, potential effects related to phosphorus have not been presented and will not be available until such time as additional analysis is completed. This analysis will be provided to the Panel in 2011.	Management	Construction Operations Closure
9.14 - Uncertainty 9.14.2 – Water Quality Modelling	De Beers is committed to undertake regular monitoring and testing using standard field and laboratory procedures during the Project operation to evaluate water quality of the Lake N11, Area 8 and Lake 410. Where necessary, the water quality input profiles assigned to the loadings will be revised and Project effects will be re-assessed, as appropriate. Where required, adaptive management strategies will be adopted.	Management Monitoring	Construction Operations Closure
9.15 – Monitoring and Follow-up 9.15.1 – Scope of Potential Monitoring Programs	Compliance inspection by De Beers will consist of programs designed to confirm the implementation of approved design standards and the environmental design features described in the EIS.	Monitoring	Construction Operations Closure
	Follow-up monitoring will consist of programs designed to verify key inputs to the effects analysis, such as the quality of the pumped from the Water Management Pond (WMP; Areas 3 and 5) to Lake N11. Results of follow-up monitoring will be used to reduce the level of uncertainty related to impact predictions.	Monitoring	Construction Operations Closure
	Effects monitoring will involve programs focused on the receiving environment, with the objectives of verifying the conclusions of the EIS, evaluating the short-term and long-term effects on the physical, chemical and biological components of the aquatic ecosystem of Kennady Lake and Area 8, estimating the spatial extent of effects, and providing the necessary input to adaptive management.	Monitoring	Construction Operations Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
9.15 – Monitoring and Follow-up 9.15.1 – Scope of Potential Monitoring Programs	Follow-up monitoring and compliance inspection programs will be focused on the Gahcho Kué Project (Project) site, with little to no work occurring beyond the immediate Project area. Effects monitoring programs will encompass a larger area; however, they are unlikely to extend beyond Kirk Lake. Anticipated monitoring activities in the N lakes watershed and downstream of the Kennady Lake watershed are described in this section.	Monitoring	Construction Operations Closure
9.15 – Monitoring and Follow-up 9.15.2 – Potential Monitoring Activities 9.15.2.1 – Compliance Inspection	Compliance inspection will verify that Project components are built to approved design standards and that environmental design features described in the EIS are incorporated. As each component of the Project is built, constructed features will be inspected to show that they comply with standard protocols, and that any variance from standard protocols has been completed with regulatory permission (as appropriate).	Monitoring	Construction Operations Closure
9.15 – Monitoring and Follow-up 9.15.2 – Potential Monitoring Activities 9.15.2.2 – Follow-up Monitoring	One aspect of follow-up monitoring required in the downstream waterbodies is to define an appropriate mitigation flow regime to augment flows downstream of Kennady Lake during operations and refilling. The key aspects of this monitoring will be to better define an appropriate spring spawning flow for Arctic grayling, including determining the flow at which barriers to fish migration no longer exist, and defining a suitable flow for Arctic grayling rearing.	Monitoring	Construction Operations Closure
9.15 – Monitoring and Follow-up 9.15.2 – Potential Monitoring Activities 9.15.2.3 – Effects Monitoring	Effects monitoring programs will include a Surveillance Network Program (SNP) that focuses primarily on Project site operations as well as a more broadly focused Aquatic Effects Monitoring Program (AEMP). De Beers will develop the scope of the SNP and AEMP in consultation with regulators and interested parties. <i>Details for the Aquatics Monitoring Programs are provided in 9.15.2.3.1 – Construction and Operation and 9.15.2.3.2 – Closure and Post-closure</i>	Monitoring	Construction Operations Closure
10 – Key Line of Inquiry: Long-term Biophysical Effects, Closure and Reclamation			
10.4 Closure and Reclamation 10.4.1.1.1 - Objectives	De Beers has made the following commitments for the Project: <ul style="list-style-type: none">• minimize, to the extent practical, the total amount of area disturbed by Project activities at any one time through the use of progressive reclamation;• recover as much soil as practical for use in reclamation activities;• develop a fish compensation plan that meets the “no-net-loss” guiding principle established by Fisheries and Oceans Canada (DFO);• conduct reclamation trials throughout the life of the Project to determine what prescriptions work most effectively at the Project site; and• liaise actively with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation. Although closure and reclamation will be progressive and begin as soon as possible, it will extend years after mine closure. De Beers will use proven technology that is available at the time of reclamation, in accordance with the legal requirements at that time to facilitate reclamation as quickly as possible.	Management Environmental Design Features Monitoring	Construction Operation Closure
10.4.2 - Long-term Viability 10.4.2.5 - Conclusion	Because these facilities extend across land and lake conditions, predictions of permafrost development cannot rely on experience with land-based containment facilities at other mines. It is expected that predictions of permafrost conditions at the Kennady lake site are more complex and will require additional study. De Beers will commit to an additional detailed study of permafrost development in the mine rock and PK storage facilities and its effect on long-term waste storage.	Management Monitoring	Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
10.5.3 - Long-Term Effects to Water Quality Nutrients	De Beers is currently evaluating a variety of environmental design features and mitigation to limit contact between site runoff waters and the fine PK located within the Fine PKC Facility and other potential sources. These environmental design features and mitigation include, for example: <ul style="list-style-type: none">Promotion of permafrost development in the Fine PKC FacilityUse of low permeability cover material to limit infiltration into key areas, such s the Fine PKC Facility. The effectiveness of these environmental design features and mitigation is uncertain and requires further analysis. Accordingly, the amount of phosphorus that may be released into the environment is uncertain at this time. As a result, potential effects related to phosphorus have not been presented and will not be available until such time as additional analysis is completed. This analysis will be provided to the Panel in 2011 following additional work that will be undertaken over the next few months.	Management	Construction Operation Closure
10.7 - Long-Term Effects to Wildlife and Human Use 10.7.2.1 - Wildlife	De Beers is committed to further study of this potential issue in 2011, and will incorporate mitigative strategies into the Project design to the extent required to maintain boron levels in Kennady Lake below those that may be of environmental concern.	Management	Construction Operation Closure
10.7 - Long-Term Effects to Wildlife and Human Use 10.7.2.2 - Human	De Beers is currently evaluating a variety of environmental design features and mitigation measures to limit contact between site runoff waters and the fine PK located within the Fine PKC Facility and other potential sources. The effectiveness of these environmental design features and mitigation measures is uncertain and requires further analysis. This analysis is expected to be completed in 2011. Once complete, De Beers will update the human health assessment to reflect the effects of these measures. De Beers is also committed to implementing additional environmental design features and mitigation measures to the extent required to protect human health.	Management	Construction Operation Closure
10.10 – Monitoring and Follow-up 10.10.1 – Scope of Potential Monitoring Programs	Compliance inspection by De Beers will consist of programs designed to confirm the implementation of approved design standards and the environmental design features described in the EIS.	Monitoring	Construction Operation Closure
	Follow-up monitoring will consist of programs designed to verify key inputs to the effects analysis, as well as monitoring compensation habitat to confirm the no net loss objective has been achieved. Results of follow-up monitoring will be used to reduce the level of uncertainty related to impact predictions.	Monitoring	Construction Operation Closure
	Effects monitoring will involve programs focused on the receiving environment, with the objectives of verifying the conclusions of the EIS, evaluating the short-term and long-term effects on the physical, chemical and biological components of the aquatic ecosystem of Kennady Lake, estimating the spatial extent of effects, and providing the necessary input to adaptive management.	Monitoring	Construction Operation Closure
	Follow-up monitoring and compliance inspection programs will be focused on the Gahcho Kué Project (Project) site, with little to no work occurring beyond the immediate Project area. Effects monitoring programs will encompass a larger area; however, they are unlikely to extend beyond Kirk Lake. Anticipated monitoring activities in the N lakes watershed and downstream of the Kennady Lake watershed are described in this section.	Monitoring	Construction Operation Closure
10.10 – Monitoring and Follow-up 10.10.2 – Potential Monitoring Activities 10.10.2.1 – Compliance Inspection	Compliance inspection will verify that Project components are built to approved design standards and that environmental design features described in the EIS are incorporated. As each component of the Project is built, constructed features will be inspected to show that they comply with standard protocols, and that any variance from standard protocols has been completed with regulatory permission (as appropriate).	Monitoring	Construction Operation
10.10 – Monitoring and Follow-up 10.10.2 – Potential Monitoring Activities 10.10.2.2 – Follow-up Monitoring	Follow-up monitoring activities are expected to include water sampling in and around the partially backfilled Hearne Pit and open Tuzo Pit basins, Areas 3 through 7, Area 8, and a reference lake to confirm the accuracy of the influent water quality profiles used to complete the effects assessment. Monitoring the progression of freezing within the external facilities will also be completed as part of this monitoring component. Only limited follow-up monitoring activities are anticipated in downstream waterbodies.	Monitoring	Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
10.10 – Monitoring and Follow-up 10.10.2 – Potential Monitoring Activities 10.10.2.3 – Effects Monitoring	Effects monitoring programs will include a Surveillance Network Program (SNP) that focuses primarily on Project site operations as well as a more broadly focused Aquatic Effects Monitoring Program (AEMP). De Beers will develop the scope of the SNP and AEMP in consultation with regulators and interested parties. <i>Details for the Aquatics Monitoring Programs are provided in 10.10.2.3.1 – Kennady Lake Watershed and 10.10.2.3.2 – Downstream Systems</i>	Monitoring	Construction Operation Closure
11 – Biophysical Subjects of Note (SON)			
11.1 - Overview			
11.1.4.10 – Monitoring and Follow-up	If monitoring or follow-up detects effects that are different from predicted effects, or the need for improved or modified design features, then adaptive management will be implemented. This may include increased monitoring, changes in monitoring plans, or additional mitigation.	Management Monitoring	Construction Operation Closure
11.2 – SON: Impacts to Great Slave Lake			
11.2.3 – Pathway Analysis 11.2.3.2 – Results Table 11.2-3	Deposition of Project air emissions could alter water and sediment quality in the Hoarfrost River: <ul style="list-style-type: none">development and implementation of emission reduction action plans to limit aerial emissions from the Project siteroutine and regular maintenance of all on-site engines and generators to maintain optimal fuel efficiencycompact layout of the surface facilities will limit travel distances and associated areal emissionsuse of low-sulphur diesel fuelregular watering of mine roads, the airstrip and equipment laydown areas to help control dust levels around the siteestablishment and enforcement of speed limits at the Project site, which will help limit dust production	Environmental Design Features	Operation
11.2.3 – Pathway Analysis 11.2.3.2 – Results Table 11.2-3	Changes to surface water flows downstream of Kennady Lake could alter flows in the Lockhart River and water levels in Great Slave Lake: <ul style="list-style-type: none">diversion of clear waters around the mine site to minimize effects to downstream flowsuse of existing on-site water to fill the Water Management Pond, thereby eliminating the need to pump water into the site at the beginning of operationsrefilling of Kennady Lake at the end of operations and a general return to pre-development drainage conditions	Environmental Design Features	Operation Closure
11.2.3 – Pathway Analysis 11.2.3.2 – Results Table 11.2-3	Changes to water quality downstream of Kennady Lake could affect water quality in the Lockhart River and Great Slave Lake: <ul style="list-style-type: none">use of backfilled pits as a disposal mechanism for saline groundwater, thereby limiting the release of this water to downstream systemsplacement of mine rock and processed kimberlite into the completed Hearne and 5034 mine pits, thereby reducing the amounts of these materials that can directly interact with surface waters	Environmental Design Features	Operation Closure
11.2.3 – Pathway Analysis 11.2.3.2 – Results Table 11.2-3	Deposition of Project air emissions could alter water and sediment quality in the Lockhart River and Great Slave Lake: <ul style="list-style-type: none">development and implementation of emission reduction action plans to limit aerial emissions from the Project siteroutine and regular maintenance of all on-site engines and generators to maintain optimal fuel efficiencycompact layout of the surface facilities will limit travel distances and associated areal emissionsuse of low-sulphur diesel fuelregular watering of mine roads, the airstrip and equipment laydown areas to help control dust levels around the siteestablishment and enforcement of speed limits at the Project site, which will help limit dust production	Environmental Design Features	Operation
11.2.3 – Pathway Analysis 11.2.3.2 - Results	Surface water is being managed to minimize effects to flows immediately downstream of Kennady Lake, maintaining those flows within a range that would result in a negligible to low magnitude of impact on fish and fish habitat during construction, operations and closure.	Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.2.3 – Pathway Analysis 11.2.3.2 - Results	The dewatering of Kennady Lake will be executed in a manner to prevent erosion and effects to fish and fish habitat immediately downstream of Kennady Lake.	Environmental Design Feature	Construction Operation
11.3 – SON: Alternative Energy Sources			
11.3.3 - Energy Alternatives for the Gahcho Kué Project 11.3.3.1.5 - Conclusions	De Beers Canada Inc. (De Beers) will continue to evaluate alternative energy sources that will reduce the Project’s dependency on fossil fuel as part of adaptive management and De Beers’ sustainable development policy.	Management	Construction Operation Closure
11.3.4 – Energy Conservation Methods	De Beers is committed to continuously evaluate ways to improve energy efficiency that are both technically and economically feasible.	Management	Construction Operation Closure
11.3.4 – Energy Conservation Methods	To minimize electrical requirements, use of the highest efficiency available equipment will be made. Major items include transformers, motors, and lighting systems. As part of the selection of equipment, efficiency will be one of the criteria.	Management	Construction Operation
11.3.4 – Energy Conservation Methods	The power plant will also be optimized by way of generator sizing to most efficiently match the anticipated loads. The power plant management system selection will be made for minimal fuel usage.	Management	Construction
11.3.5 – Monitoring and Follow-up	De Beers will continue to evaluate opportunities to reduce fossil fuel use and greenhouse gas emissions at the Gahcho Kué Project. The possible use of solar, wind, and hydroelectric power will continue to be explored and may be incorporated into Project design at some later date if it proves to be both technically and economically feasible. Evaluation criteria would include energy efficiency, proven performance in a northern setting, environmental cost or benefit, and cost effectiveness.	Management	Construction Operation Closure
11.4 – SON: Air Quality			
11.4.3 – Pathway Analysis 11.4.3.2 – Results Table 11.4-3	Air emissions (sulphur dioxide [SO ₂], nitrogen oxides [NO _x], carbon monoxide [CO], particulate matter [PM], and total suspended particulates [TSP]) can affect air quality. Dust emissions can affect air quality; dust emissions from dewatered lake-bed of Kennady Lake. <ul style="list-style-type: none">• compliance with regulatory emission requirements• good design and operational practices to mitigate and reduce emissions and to improve energy efficiencies	Management Environmental Design Feature	Construction Operation Closure
11.4.3 – Pathway Analysis 11.4.3.2.1 – Good Practices to Mitigate and Reduce Emissions	Continuous improvement and emission reduction are key management approaches that support the principle of keeping clean areas clean and encompass the De Beers goal of using best available technology economically achievable (BATEA).	Management Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.4.3 – Pathway Analysis 11.4.3.2.1 – Good Practices to Mitigate and Reduce Emissions 11.4.9 – Monitoring, Adaptive Management, and Mitigation 11.4.9.3 – Management and Mitigation	De Beers is committed to the following general management approaches for air emissions from the Project: <ul style="list-style-type: none">• Project mine equipment and haul vehicles will be regularly maintained to reduce emissions and maximize fuel efficiency;• Low sulphur (15 parts per million by weight [ppmw]) diesel will be used in fleet vehicles;• Site road topping surfaces will be regularly maintained for operational efficiencies and to minimize fuel consumption, and will be adjusted as needed during the life of the Project; and• Project waste will be screened. Material containing metal and chlorinated organic waste will be segregated and set aside. The remainder will be combusted in an approved incinerator. The waste incinerator will be engineered and operated to meet the CCME emission standards for dioxins and furans (CCME 2001).	Management Environmental Design Feature	Construction Operation Closure
	De Beers will minimize NO _x emissions through the following specific measures: <ul style="list-style-type: none">• Committing to use corporate project fleet vehicles that meet applicable emission standards at the time of purchase and to encouraging contractors to do the same with their vehicles;• Considering NO_x emissions as a criterion in future engine and boiler upgrades;• Energy conservation initiatives such as maintaining site road topping surfaces for energy efficiency; and• Considering the use of diesel engine exhaust catalytic converters to reduce NO_x emissions from the mobile fleet.	Management Environmental Design Feature	Construction Operation Closure
	Specifically with respect to dust control, the largest emissions are transport related. De Beers will manage dust and particulate emissions by adopting the following management practices: <ul style="list-style-type: none">• water spray application to control dust emissions on haul roads during summer;• considering the use of covered conveyors and limiting the height from which material is dropped; and• managing vehicle speed to limit wind-blown dust from vehicle wheel entrainment.	Management Environmental Design Feature	Construction Operation Closure
11.4.3 – Pathway Analysis 11.4.3.2.1 – Good Practices to Mitigate and Reduce Emissions	De Beers plans to include consideration of the potential for dust from the drained lake-bed in its air quality monitoring program, and to develop contingency plans should monitoring data indicate that excessive dust concentrations are occurring.	Monitoring	Construction Operation
11.4.3 – Pathway Analysis 11.4.3.2.1 – Good Practices to Mitigate and Reduce Emissions 11.4.9 – Monitoring, Adaptive Management, and Mitigation 11.4.9.3 – Management and Mitigation	De Beers plans to incorporate the results of its ambient air quality monitoring program into its emission management plans as part of its response to the principle of continuous improvement.	Monitoring	Construction Operation Closure
11.4.3 – Pathway Analysis 11.4.3.2.2 – Regulatory Emission Requirements	De Beers will design the Project facilities to meet Canadian Council of Ministers of the Environment (CCME) emission requirements for boilers, fuel storage tanks, and waste incinerators.	Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.4.3 – Pathway Analysis 11.4.3.2.2 – Regulatory Emission Requirements	Emission limits are expressed as a concentration in the exhaust gas exiting the stack of the facility. The limits will be met using generally available incineration and emission control technology and waste diversion. Application of best available pollution prevention and control techniques, such as a waste diversion program, is encouraged to minimize dioxin and furan emissions.	Environmental Design Feature	Construction Operation
11.4.5.8 – Summary of Human Health Assessment	De Beers commitment to maintaining a healthy and safe work environment that meets or exceeds all applicable operational health and safety standards. De Beers is committed to: <ul style="list-style-type: none">• further evaluating the assumptions used to develop the predicted particulate and associated metal levels outlined herein;• updating the human health assessment based on any changes to these assumptions; and• developing an ambient air quality monitoring program that will be used to guide adaptive management strategies and the implementation of mitigation, if and as required, to maintain exposure to particulate materials below those that would be of concern.	Monitoring	Construction Operation
11.4.9 – Monitoring, Adaptive Management, and Mitigation 11.4.9.1 – Emissions Monitoring	De Beers will conduct an emissions test for one of the power generators after Project start-up to confirm the estimated emission rates. After start-up, annual emission testing of one stack will be conducted, decreasing in frequency after two years of consistently compliant results. The tests will include SO ₂ , NO ₂ , CO, and PM _{2.5} .	Monitoring	Construction Operation
11.4.9 – Monitoring, Adaptive Management, and Mitigation	A small network of monitoring stations e.g., SO ₂ and NO ₂ , particulates, and dustfall will be established around the Project site, targeting locations where vegetation and soils are considered most sensitive and where predicted concentrations and dust deposition rates are elevated.	Monitoring	Construction Operation Closure
11.4.9.2 – Ambient Air Quality Monitoring	An air quality and emissions management plan (also including dust deposition) will be developed which will include a detailed assessment of the timing, specific technology and monitoring locations for each of the air quality parameters being considered for monitoring. The plan will be developed so that monitoring can adapt to changing conditions and influence the pertinent management decisions relating to ongoing Project operations. The plan will also include a mechanism that will identify conditions that should lead to a reduced monitoring program, e.g., measured ambient concentrations that are actually substantially lower than the modelled results presented in this EIS.	Management Monitoring	Construction Operation Closure
11.5 – SON: Mine Rock and Processed Kimberlite			
11.5.4.3 Effects of the Physical Presence of the Mine Rock Piles, Coarse PK Pile and the Processed Kimberlite Containment Facility on Caribou Behaviour	During operations, ramps will provide access points for haul vehicles, in a similar manner to the processes used at the Ekati and Diavik diamond mines. The substrate of the ramps will consist primarily of small-diameter crush and fill, creating a smooth gravel road that is easy to traverse. Progressive closure of the storage facilities will include re-grading the surface of the facilities and removing the mine access ramps; however, the ramps may be altered and used to provide access and egress corridors for caribou.	Management Monitoring	
11.5.4.3 Effects of the Physical Presence of the Mine Rock Piles, Coarse PK Pile and the Processed Kimberlite Containment Facility on Caribou Behaviour	In cases where caribou have entered the mine rock piles at other mines in the NWT, the caribou have been monitored, and in some cases herded off the mine rock pile by environmental technicians. A similar approach will be used to manage and reduce the risk to caribou at the Project. Monitoring programs at the existing diamond mines have included behavioural studies of caribou groups when they are within and immediately adjacent to these mine sites, and caribou in high-risk areas are often monitored by on-site environmental technicians. Additionally, as a result of locally expressed concerns, the mine rock piles and PK storage facilities for the Project will not be vegetated at closure to prevent the facilities from becoming attractive to wildlife.	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.5.4.3 Effects of the Physical Presence of the Mine Rock Piles, Coarse PK Pile and the Processed Kimberlite Containment Facility on Caribou Behaviour	At closure, the entire site area will be re-contoured to reduce hazards to wildlife, and access corridors will be graded to facilitate the movement of caribou from these structures.	Environmental Design Feature	Closure
11.5.5 Uncertainty, Monitoring, and Follow-up	<p>A detailed monitoring plan for mine rock and processed kimberlite storage will be developed during the detailed design phase that will follow the EIS phase. Key elements of the monitoring plan will include:</p> <ul style="list-style-type: none">• Thermistors will be placed in the mine rock piles, Coarse PK Pile and Fine PKC Facility to monitor the development of permafrost conditions.• Water quality will be monitored in the Tuzo Pit during and following refilling to confirm water quality predictions in the EIS and the stability of density stratification in the flooded pit.• Water quality above the 5034 and Hearne pits will be monitored during and following refilling to confirm that saline water in the backfill does not interact with and change the quality of the overlying lake water to a greater extent than predicted.	Monitoring	Construction Operation Closure
11.6 – SON: Permafrost, Groundwater and Hydrogeology			
11.6.3 – Permafrost 11.6.3.1 – Pathway Analysis 11.6.3.1.2 – Results Table 11.6-3	Removal of lake water will allow for greater frost penetration, freezing of surface soils and establishment of permafrost within the exposed lake bed: <ul style="list-style-type: none">• establishment of water management pond within Kennady Lake will limit the areal extent of exposed lake bed• refilling of Kennady Lake at the end of operations will allow for a return to pre-development permafrost conditions	Environmental Design Feature	Construction Operation Closure
	Placement of warm material on ground surface will result in the formation of closed taliks, which will freeze back over time as heat dissipates; permanent placement of earthen materials in portions of Kennady Lake will allow for a lateral expansion of permafrost into these areas: <ul style="list-style-type: none">• aerial footprints of the mine rock piles, Coarse PK Pile, Fine PKC Facility and other earthen structures will be optimized to limit surface disturbance to the extend practical and possible	Environmental Design Feature	Construction Operation Closure
	Slower melting of compacted snow in spring/summer and associated ponding of the melt water could result in a change in soil temperature and change in the thickness of the active layer: <ul style="list-style-type: none">• the roads and airstrip constructed as part of the Project will include drainage systems to prevent the accumulation of ponded water on or adjacent to these structures	Environmental Design Feature	Construction Operation
	Heat from buildings will result in the formation of closed taliks: <ul style="list-style-type: none">• buildings will be insulated to minimize heat loss• buildings will be dismantled as part of reclamation, which will allow for a return to pre-development conditions	Environmental Design Feature	Construction Operation Closure
	Removal of insulating layer could lead to cooler soil temperatures: <ul style="list-style-type: none">• ground clearing will be kept to a minimum; it will occur primarily in areas where project facilities are to be built	Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.6.3 – Permafrost 11.6.3.1 – Pathway Analysis	The roads and the airstrip constructed as part of the Project will be designed to include appropriate drainage system to prevent the buildup of ponded water around these structures.	Environmental Design Feature	Construction Operation
11.6.3.1.2 - Results	Following the completion of active mining and site reclamation, the roads located outside of the Kennady Lake basin and the airstrip will be contoured to a more natural configuration, and snow will be allowed to naturally accumulate on the re-contoured surfaces.	Environmental Design Feature	Closure
	Heated buildings will be insulated to minimize heat loss, and the zone of influence associated with the heat generated from buildings and other mine structures is expected to be minimal, mainly limited to within a few meters of the footprint areas of the structures.	Environmental Design Feature	Construction Operation Closure
11.6.3 – Permafrost 11.6.3.3 – Uncertainty	Moisture content within the mine rock and PK deposits will largely be a function of the deposition rate, drainage control and earthwork management, all of which will be optimized to the extent possible and practical to encourage the development of permafrost and limit talik formation.	Environmental Design Feature	Operation
11.6.3 – Permafrost 11.6.3.4 – Monitoring and Follow-up	De Beers is committed to monitoring permafrost conditions at the Project site. Monitoring activities will include the following: <ul style="list-style-type: none">the installation and maintenance of thermistor strings and data loggers within the mine rock piles, the Coarse PK Pile and the Fine PKC Facility to assess temperature conditions and to track the progress of permafrost development within each deposit;routine inspection of the exposed lake bed to assess freezing rates and the development of frost cracking and other earth processes;routine inspection of permafrost conditions in areas adjacent to the open mine pits during operations; androutine inspection of the gravel/sand borrow source areas to identify any large ice deposits and to initiate appropriate handling of this material. Results of these monitoring programs will be used to evaluate how permafrost conditions may be changing during Project construction, operation and reclamation. Results will also be compared to those obtained from other diamond mines in the NWT. Adaptive management plans will be developed and implemented as required, should effects to permafrost differ from those expected and outlined herein.	Monitoring	Construction Operation Closure
11.6.4 – Groundwater and Hydrogeology 11.6.4.1 – Pathway Analysis 11.6.4.1.2 – Results Table 11.6-4	Flow of groundwater to dewatered areas of Kennady Lake, which could affect surface water quality in the receiving environment: <ul style="list-style-type: none">groundwater reporting to the dewatered areas of Kennady Lake will not be directly released to the environment; it will be placed into the Water Management Pond and only released during operations if it can be done without notable effects to the receiving environmentas part of reclamation, saline waters will be placed in the backfilled pits to limit release to the environmentat closure, water levels in Kennady Lake will be restored to pre-mining water levels, limiting groundwater inflow rates	Environmental Design Feature	Operation Closure
	Permafrost development on the newly exposed lake bed could potentially mobilize poor quality water from depth, which could negatively affect surface water quality: <ul style="list-style-type: none">area of exposed lake bed will be minimized by the placement of the Water Management Pond in Areas 3 and 5exposure time will be in the order of 19 years, based on a 11 year mine life and an eight year refilling period	Environmental Design Feature	Operation Closure
	Alteration of groundwater flows from dewatering Kennady Lake may result in changes to groundwater discharge rates to other lakes; alteration of the groundwater regime that results from pit development may result in decreased groundwater discharge rates to other lakes: <ul style="list-style-type: none">at closure, water levels in Kennady Lake will be restored to pre-mining water levels, eliminating the groundwater flow gradient towards Kennady Lake	Environmental Design Feature	Closure
	Removal of saline groundwater inflow from the mine pits may cause changes to groundwater quantity and quality: <ul style="list-style-type: none">during operations, perimeter dykes will be constructed around the circumference of the open pits to reduce the inflow of surface runoff into the open mine pits, thereby limiting the potential exchange of saline groundwater and fresh lake waterat closure, water levels in Kennady Lake will be restored to pre-mining water levels, eliminating the need for groundwater removal	Environmental Design Feature	Operation Closure
	Removal of bedrock and kimberlite material may affect groundwater quantity in Kennady Lake area: <ul style="list-style-type: none">groundwater removed during mining will be replaced when pits are backfilled and Kennady Lake is refilled	Environmental Design Feature	Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.6.4 – Groundwater and Hydrogeology 11.6.4.1 – Pathway Analysis 11.6.4.1.2 – Results Table 11.6-4	Effect of refilling Kennady Lake on the deep groundwater regime and deep groundwater flows to the refilled Tuzo Pit: <ul style="list-style-type: none">during reclamation, water flow into the mined-out pits will include surface water and groundwater; refilling will not rely solely on refilling by groundwaterat closure, water levels in Kennady Lake will be restored to pre-mining water levels, eliminating the groundwater flow gradient towards Kennady Lake	Environmental Design Feature	Closure
	Seepage from mine rock and could result in changes to groundwater quality: <ul style="list-style-type: none">at closure, the mine rock piles will be re-shaped and completed with a one m thick layer of non-acid generating mine rock to prevent erosion and water ponding on the surface of the rock pilespotentially acid generating (PAG) rock will comprise only a small proportion of the overall mine rock tonnage and will be sequestered within the mine rock pilesthermistors will be installed within the mine rock piles to monitor the progression of permafrost developmentrunoff from the mine rock piles will be managed to prevent ponding	Environmental Design Feature Monitoring	Operation Closure
	Seepage from the Fine PKC Facility and the Coarse PK Pile foundation may cause changes to groundwater flows and quality: <ul style="list-style-type: none">permafrost development in the Fine PKC Facility is expected to occur over time; thermistors will be installed in the Fine PKC Facility to monitor the formation of permafrost in the solidsthe Coarse PK Pile, adjacent to Area 4, will be shaped and completed with a one m thick layer of non-acid generating mine rock to prevent erosion and water ponding on the surface of the rock piles.placement of these facilities adjacent to and encroaching within Kennady Lake will create a seepage gradient from the facilities to Kennady Lake, thereby limiting / preventing seepage into the underlying groundwater systems	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.6.4 – Groundwater and Hydrogeology 11.6.4.1 – Pathway Analysis 11.6.4.1.2 – Results Table 11.6-4 (continued)	<p>Spills can cause changes to groundwater quality:</p> <ul style="list-style-type: none">petroleum products will only be handled by site personnel who have received appropriate trainingan emergency and spill contingency plan will be developed for the Projectspill containment supplies will be stored in well-labelled, designated areasany spills will be isolated and immediately cleaned up by a trained spill response team consisting of on-site personnelmine vehicles and heavy equipment will be maintained to operational standardsall fuel storage tanks will be designed and constructed according to the American Petroleum Institute 650 (API) standardfuel tanks will be placed within a lined and dyked containment area; the design of the containment area will be based on the requirements of the CCME Environmental Code of Practice for Above-Ground Storage Tanks Systems Containing Petroleum Products (2003), the National Fire Code of Canada, and any other standards that are required.the containment area will be sized to hold 110% of the volume of the largest storage tank and will include a gravel base with a continuous high-density polyethylene liner sheet installed under the tanks and the internal sides of the berma fuel unloading pumping module will be installed within a spill containment area adjacent to the fuel storage tank farmaviation fuel will be stored in self-contained, Underwriters Laboratories Canada (ULC)-rated enviro tanks mounted on an elevated pad at the air terminal shelter; aviation fuel for helicopters will be stored in sealed drums inside a lined berm area near the airstripto prevent accumulation and/or runoff of de-icing fluids at the airstrip from aircraft de-icing operations, aircraft will be sprayed in a specific area that will be equipped with swales to collect excess fluids if necessaryany affected soil and gravel resulting from spills will be collected and transferred to the landfarm, puddles of de-icing fluids in the swales will be removed by vacuum truck and deposited into waste de-icing fluid drums for shipment to recycling facilities if necessarywaste oil will be collected and stored in the waste oil storage tank and incinerated for heat generation or used with explosives, if not shipped off-site for recyclingthe grease used in the diamond recovery process will be recycled to the extend possible and disposed of as appropriatespent chemicals, such as de-icing, acids, solvents, battery acids and laboratory agents, will be collected in lined trays and drums and stored in suitable sealed containers in the waste transfer area.chemicals that cannot be incinerated will be shipped off-site for disposal or recyclinghazardous, non-combustible waste and contaminated materials will be temporarily stored in the waste storage transfer area in sealed steel or plastic, wildlife-resistant drums, and shipped off-site for disposal or recyclingthe waste transfer storage area will include a lined and enclosed pad for the collection and subsequent return of hazardous waste to suppliers or to a hazardous waste disposal facilityemulsion materials will be stored at the emulsion plant where spills will be 100% contained within the buildingprocessing of the kimberlite ore will be mechanical, with minimal use of chemicals	Management Environmental Design Feature	Construction Operation Closure
11.6.4 – Groundwater and Hydrogeology 11.6.4.1 – Pathway Analysis 11.6.4.1.2 – Results	<p>Less than 6% of the mine rock that will be excavated through open-pit mining will have to be managed as being potentially acid generating (PAG). This rock will be managed appropriately to avoid the generation of acidic leachate and limit the release of the metals and other elements. The management strategy will involve sequestering any PAG mine rock, as well as any barren kimberlite, within the interior of the mine rock piles. Till from on-going pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into that portion of the repository. Further, the PAG rock will be enclosed within enough non-acid generating (non-AG) rock, such that the active zone will not extend into the enclosed material, and water runoff will occur on the non-AG rock cover areas.</p>	Environmental Design Feature	Operation Closure
	<p>The isolation of potentially reactive rock within the centre of the mine rock piles is expected to effectively mitigate the long-term potential for acid rock drainage to develop in these areas. Temperature monitoring systems will be placed in the mine rock piles as they are being constructed to assess the degree of freezing that develops within the piles.</p>	Environmental Design Feature Monitoring	Operation Closure
	<p>The final surface of the mine rock piles will be graded to promote runoff of precipitation, limiting the potential for seepage generation over the long-term.</p>	Environmental Design Feature	Closure
	<p>As with the mine rock piles, permafrost is expected to develop within the Fine PKC Facility and the Coarse PK Pile. Both facilities will also be shaped and contoured to encourage surface runoff, thereby limiting infiltration and potential foundation seepage. In addition, these facilities will be placed adjacent to and encroaching within Kennady Lake, which will create a seepage gradient from the facilities to Kennady Lake.</p>	Environmental Design Feature	Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.6.4 – Groundwater and Hydrogeology 11.6.4.1 – Pathway Analysis 11.6.4.1.2 – Results	Spills are usually localized, and will be quickly reported and managed. Mitigation identified in the Emergency Response and Spill Contingency Plan, and other environmental design features (e.g., containment dykes, liners, proper storage conditions) will be in place to minimize the frequency and extent of spills that result from Project activities.	Management Environmental Design Feature	Construction Operation Closure
	Employees will be trained in the transportation of dangerous goods, and domestic and recyclable wastes will be stored in appropriate containers until they can be disposed off at approved facilities or through approved means. Storage facilities for hazardous substances and waste dangerous goods will meet regulatory requirements and will be designed to protect the environment and workers from exposure.	Management Environmental Design Feature	Construction Operation Closure
	Water entering the open pits during mining will be routed by ditches to a series of sumps. Temporary sumps will be developed in working areas that will allow initial settlement of coarse suspended solids from the water. From the temporary sumps, water will be directed through a combination of ditches and pipelines to main sumps equipped with multiple storage areas and pumps. A limited amount of storage capacity will be provided in the open pits to prevent flooding of sumps and working areas.	Environmental Design Feature	Construction Operation Closure
	As required, perimeter dykes will be constructed around the circumference of the open pits to reduce the inflow of surface runoff from the exposed lakebeds. A small amount of seepage may reach the open pits during runoff events, because the perimeter dykes will not be constructed with water-retaining cut-off walls.	Environmental Design Feature	Operation
11.6.4 – Groundwater and Hydrogeology 11.6.4.4 – Monitoring and Follow-up	Monitoring will occur at the onset of development to determine the response of the environment to the disturbance by mining. The hydrogeological conditions will be monitored for changes throughout each phase of the Project. Groundwater quality monitoring will mostly occur quarterly during the development of the first open pit, and is expected to be scaled down to an annual to semi-annual basis during development of the Hearne and Tuzo pits. Water level monitoring will mostly occur on a daily basis (transducers and dataloggers will be installed for this purpose) during the development of the first open pit, and it is expected that the frequency of these measurements will be scaled down during development of the Hearne and Tuzo pits. Modifications to the monitoring interval will be based on a comparison of the monitored information to the predicted values. If the observed values or changes are less than predicted, then the intervals between monitoring events would likely be increased (i.e., less frequently sampled). If the observed values or changes are greater than predicted, then the interval between sampling events would likely be decreased (i.e., more frequently sampled).	Monitoring	Construction Operation Closure
	Groundwater will be monitored using the two Westbay wells, which will remain following pit development. The other two Westbay wells (MPV-05-240C and MPV-05-239C) located within open pit development areas will also be monitored until their destruction during development of respective pits.	Monitoring	Construction Operation Closure
	The monitoring program will focus on providing data required to update groundwater modelling results, specifically: <ul style="list-style-type: none">to assess ongoing effects of pit development on groundwater movement and water quality;to predict long-term groundwater movement and water quality; andto provide details to the design team for adaptive management of groundwater flows and pit water quality.	Monitoring	Construction Operation
11.6.4 – Groundwater and Hydrogeology 11.6.4.4 – Monitoring and Follow-up (continued)	During each phase of the Project, groundwater monitoring will include the following on a quarterly to annual basis: <ul style="list-style-type: none">implementation of established quality assurance/quality control measures for data acquisition, groundwater sampling, and analysis;pressure measurements from ports at designated depths and respective water levels in the Westbay wells;collection of groundwater samples from ports in the Westbay wells;water sample analysis for main ions and other parameters of interest;review and compilation of relevant permafrost, soils quality, surface water quality and hydrology reports and information; anddata and information assessment and completion of a groundwater monitoring report including recommendations for mine management team.	Monitoring	Construction Operation Closure
	Potential for effects on groundwater quality from the mine rock piles, Coarse PK Pile, and the Fine PKC Facility will be evaluated using water quality monitoring results for perimeter collection systems. If unexpected results are observed, revisions to the groundwater monitoring program will be made.	Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
Section 11.7 – SON: Vegetation			
11.7.3 – Pathway Analysis 11.7.3.2 – Results Table 11.7-13	Direct loss and fragmentation of vegetation ecosystems and plant: <ul style="list-style-type: none">backfilling the mined-out pits with PK and mine rock will decrease the on-land Project footprintcompact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiencymine rock will be used as the source of aggregate production, therefore, reducing the need for separate quarriessoil, overburden, and lakebed sediments from areas of disturbance will be salvaged and stockpiled during the pit and mine rock pile development for use at closurewhere practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsreduce, to the extent practical, the total amount of area disturbed by Project activities at any one time through the use of progressive reclamationat closure, transportation corridors the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where requiredculverts or stream-crossing structures will be removed and natural drainage re-establishedmonitor conditions over time to evaluate the success of the Closure and Reclamation Plan and, using adaptive management and newer proven methods as available, adjust the Plan, if necessaryactively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamationreclamation trials will be completed throughout the Project life to determine which prescriptions may be most effective for reclamation	Environmental Design Feature	Construction Operation Closure
	Effects to soil and permafrost can lead to changes in vegetation ecosystem structure and composition: <ul style="list-style-type: none">during winter months, clear areas for construction using a snow packed surfacerevegetate disturbed areas as soon as possiblemanage drainage around infrastructure to reduce pooling of water at the surfacecompact layout of the surface facilities will limit the area disturbed at constructionlimit the road footprint disturbance area, while maintaining safe construction and operation practicesuse coarser materials for road construction to minimize frost effectsbuilding foundations will be built on bedrock not susceptible to frost heave to minimize thawing of permafrost in sensitive areasorganic and/or topsoil horizons will not be stripped in areas containing ice-rich permafrost to reduce potential for an increase in thaw depth and related thaw subsidence	Environmental Design Feature	Construction Operation
	Road footprint may cause changes to vegetation quality (i.e., vegetation degradation), quantity and fragmentation of vegetation ecosystems: <ul style="list-style-type: none">use of snow or ice pads of sufficient thickness to limit damage to overland portages between lakesdiscontinued use of road when surface becomes too softuse of proven best practices for Winter Road construction	Environmental Design Feature	Construction Operation
	Human recreational activity can disturb vegetation: <ul style="list-style-type: none">establish site rules for recreational walking on and offsiteprohibit recreational off-road use of all terrain vehiclesenvironmental sensitivity training for on-site personnel	Management Environmental Design Feature	Construction Operation Closure
	Introduction of invasive plant species can change vegetation ecosystem composition: <ul style="list-style-type: none">use of clean equipment	Management	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.7.3 – Pathway Analysis 11.7.3.2 – Results Table 11.7-13 (continued)	<p>Dust deposition may cover vegetation and lead to physical and/or physiological damage of vegetation ecosystems and plants; dust deposition and air emissions may change vegetation quality through changes in the chemical content of soil, water, and air; project activities may alter local climate and cause changes to plant phenology:</p> <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored so that no unnecessary pumping takes place and pump efficiencies are optimized• programs will be instituted to review power and heat use to reduce energy use• recovered heat from the main electrical generators will be used to heat the accommodations complex and the central process and maintenance facilities• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
11.7.3 – Pathway Analysis 11.7.3.2 – Results Table 11.7-13 (continued)	<p>Chemical spills (including de-icing fluid runoff) may degrade vegetation ecosystems:</p> <ul style="list-style-type: none">• processing of the kimberlite ore will be mechanical, with limited use of chemicals.• hazardous, non-combustible waste and contaminated materials will be temporarily stored in the waste storage transfer area in sealed steel or plastic, wildlife-resistant drums, and shipped off-site for disposal or recycling.• chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums, and stored in suitable sealed containers in the waste transfer area.• the waste transfer storage area will include a lined and enclosed pad for the collection and subsequent return of hazardous waste to suppliers or to a hazardous waste disposal facility.• emulsion materials will be stored at the emulsion plant where spills would be 100% contained within the building• all fuel storage tanks will be designed and constructed according to the American Petroleum Institute 650 standard and placed in a lined and dyked containment area to contain any potential fuel spills.• aviation fuel will be stored in self-contained, Underwriters Laboratories Canada-rated enviro tanks mounted on an elevated pad at the air terminal shelter.• aviation fuel for helicopters will be stored in sealed drums inside a lined berm area near the airstrip.• to prevent accumulation and/or runoff of de-icing fluids at the airstrip from aircraft de-icing operations, aircraft will be sprayed in a specific area that will be equipped with swales to collect excess fluids if necessary• puddles of de-icing fluids in the swales will be removed by vacuum truck and deposited into waste de-icing fluid drums for shipment to recycling facilities if necessary• during closure, hazardous materials will be stored in sealed containers and drums in a lined transfer area until they are retrieved directly by licensed companies specializing in the handling of these materials.• an Emergency Response and Contingency Plan has been developed.• spill containment supplies will be in designated areas.• any spills will be isolated and immediately cleaned up by a trained spill response team consisting of on-site personnel who will be available at all times	Management Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.7.3 – Pathway Analysis 11.7.3.2 – Results Table 11.7-13 (continued)	<p>Leaching of PAG mine rock may degrade vegetation communities:</p> <ul style="list-style-type: none">• mine rock used to construct the dykes will be NAG• any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pH• any potentially acid-generating (PAG) mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be under water when Kennady Lake is refilled• till from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into that portion of the repository• the PAG rock will be enclosed within enough NAG rock that the active zone (typically two meters) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areas• to confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructed• minimal water is expected to penetrate to the PAG rock areas• only non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock pile The thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock• thermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are prediction to remain permanently frozen	Management Environmental Design Feature Monitoring	Construction Operation Closure
11.7.3 – Pathway Analysis 11.7.3.2 – Results Table 11.7-13 (continued)	<p>Release of seepage and surface water runoff (including erosion) from the Coarse PK and mine rock piles may degrade vegetation communities:</p> <ul style="list-style-type: none">• the performance of the dykes will need to be monitored throughout their construction and operating life; instrumentation monitoring together with systematic visual inspection can provide early warning of many conditions that can contribute to dyke failures and incidents.• a system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pits.• no substantial runoff and seepage from the mine rock piles is expected.• dykes will be constructed to divert water from Kennady Lake. These diversions are required to reduce the volume of runoff entering the controlled areas of Kennady Lake.• a soil-bentonite slurry cut-off wall through a till fill zone placed over the overburden and the overburden to the bedrock surface has been adopted as the main seepage control for the diversion dyke separating Areas 7 and K8.• the cut-off wall for the dyke separating Areas 7 and K8 will be protected by a downstream filter zone and a mine rock shell zone.• for the retention dyke that separates Areas 3 and 4, Areas 5 and 6, and Areas 4 and 6, a wide till core has been selected as the main seepage control.• the water retention dyke separating Area 2 and Lake N7, as well as diversion dykes dealing with Lakes A3, A4, B1, N13, D2, E1, and E3 will have a liner keyed into the competent frozen ground or bedrock to control seepage.• the PAG rock will be enclosed within enough NAG rock that the active zone (typically two meters) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areas.• thermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozen.• only non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock pile; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock.	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.7.3 – Pathway Analysis 11.7.3.2 – Results Table 11.7-13 (continued)	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from dewatering of Kennady Lake may affect the quantity of downstream vegetation; dewatering may result in newly established vegetation on the exposed lakebed sediments: <ul style="list-style-type: none">• Lake N11 is capable of accepting water at the proposed discharge rate without erosion damage to downstream watercourses• Areas 2, 3, 4, and 5 will be used to settle and/or store water unsuitable to be released directly to the natural watershed; flocculent may be added as required to reduce total suspended solids• dykes will be constructed to divert fresh water from entering areas of Kennady Lake• the height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watershed• dewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation Closure
11.7.3 – Pathway Analysis 11.7.3.2 – Results Table 11.7-13 (continued)	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from refilling of Kennady Lake may affect the quantity of downstream vegetation: <ul style="list-style-type: none">• mined-out pits will be backfilled with PK and mine rock to reduce the time required for filling these portions of Kennady Lake because less water is required to refill the partially backfilled pits• Kennady Lake will be refilled using natural runoff and supplemental waters drawn from Lake N11• while fine PK is being discharged in the mined-out pits (primarily Hearne, but potentially 5034) process water will not be reclaimed from the pits. Instead the slurry discharge water will be used to accelerate the infill of the mined-out pits; the process will facilitate a more rapid re-filling and progressive reclamation of Area 6 within Kennady Lake• the 5034 Pit will be backfilled to the extent possible with mine rock and the remaining space will be eventually filled with water once mining in the Tuzo Pit is complete• the Tuzo Pit will be allowed to flood following the completion of the operations phase. Natural watershed inflows will be supplemented by pumping water from Lake N11• the pumping rates are anticipated to be managed such that the total outflow from Lake N11 does not drop below the 1 in 5-year dry conditions	Environmental Design Feature	Construction Operation Closure
	Long-term seepage from the Coarse PK and mine rock piles may cause local changes to vegetation quality: <ul style="list-style-type: none">• the PAG rock will be enclosed within enough non-AG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas• thermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozen• the Coarse PK Pile will be shaped and covered with a layer of mine rock of a minimum 1 m to limit surface erosion• only non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock• no substantial runoff and seepage from the mine rock piles is expected	Environmental Design Feature	Operation Closure
11.7.4 – Effects to Vegetation Ecosystems and Plants	Wherever possible, progressive reclamation will be carried out during the life of the Project in an effort to assist in the recovery of disturbed areas.	Environmental Design Feature	Operation Closure
11.7.4.1 – Effects from the Project Footprint 11.7.4.1.2 - Results	The identification of possible rare plant occurrences within the Project site will be further addressed through the general vegetation management plan and follow-up monitoring programs proposed for the Project. Appropriate mitigation practices and protocols will also be implemented should any rare plants be identified.	Management Monitoring	Construction Operation Closure
11.7.4 – Effects to Vegetation Ecosystems and Plants	Discharges will be limited so that pumping will not increase discharges above the baseline 2-year flood levels in downstream lakes and channels.	Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.7.4.1 – Effects from the Project Footprint 11.7.4.1.2 – Results (continued)	The progressive reclamation strategy will be extended to the water management of Kennady Lake, where portions of the lake will be isolated and brought back to compliant water levels and quality as quickly as possible.	Management	Operation Closure
11.7.7 – Residual Impact Classification 11.7.7.2 – Results	The mine rock cap on the Fine PKC Facility will not be vegetated to prevent it from becoming attractive to wildlife.	Environmental Design Feature	Closure
11.7.10 – Monitoring and Follow-up 11.7.10.1 – Environmental Monitoring	Environmental monitoring will include the implementation of a vegetation management plan (VMP).	Monitoring	Construction Operation Closure
11.7.10 – Monitoring and Follow-up	Re-vegetation will likely be a combination of natural colonization and the application of suitable seed and fertilizer. Reclaimed surfaces will be prepared in a manner that encourages re-vegetation via colonization by native species wherever possible.	Environmental Design Feature	Closure
11.7.10.1 – Environmental Monitoring 11.7.10.1.1 – Vegetation Management Plan	<p>The monitoring activities associated with Project construction, operations, and closure, are described below, and are designed to work in conjunction with other programs.</p> <ul style="list-style-type: none">• Identification of areas where vegetation is intact. A general site survey to identify areas where healthy vegetation is maintained and where vegetation is showing signs of degradation will be carried out on a regular basis. Estimates of the extent of intact (undisturbed) and degraded vegetation will be recorded.• Identification of areas where re-vegetation is required. Disturbed areas will be identified from the general site survey identified above, as well as from surveys conducted as part of the monitoring program associated with the closure and reclamation plan (Section 10). Disturbance estimates will include descriptions of areas that have been re-vegetated and an indication of treatment effectiveness. Test plots will be established at longer-term monitoring stations to evaluate treatment effectiveness as well.• Implementation of re-vegetation efforts. Areas identified as requiring re-vegetation (e.g., from the general site survey and/or closure and reclamation monitoring) will be assigned an appropriate treatment. Vegetative material (seed or otherwise) will be composed of non-invasive species. The long-term re-vegetation goal is to facilitate and encourage the re-establishment of native vegetation. Treatments will be designed such that they optimize success (e.g., timing will coincide with favourable weather events).• Survey timing. The timing of the surveys will be planned according to when the areas were re-vegetated and the potential for soil erosion. For example, areas with a high potential for soil erosion will likely be surveyed more frequently following treatment. Test plots will be established at longer-term monitoring stations.	Monitoring	Construction Operation Closure
11.7.10 – Monitoring and Follow-up 11.7.10.1 – Follow-up Monitoring	While it is understood that vegetation ecosystems and plants are likely to be affected by the dewatering of Kennady Lake and ensuing downstream flooding, the magnitude and extent of the indirect effects will be dependent upon the type of vegetation present (e.g., wetlands, riparian or upland tundra) and the zone of influence of the fluctuating water Table. The follow-up monitoring program will be designed and implemented to test predictions, particularly the magnitude and extent of changes to vegetation ecosystems and plants that are associated with the dewatering and flooding.	Monitoring	Construction Operation Closure
	While effects from dust deposition on vegetation ecosystems and plants were predicted to be negligible, a follow-up monitoring program will be established to verify the predicted effects in the area, and adaptively manage mitigation as needed.	Monitoring	Construction Operation Closure
11.7.10 – Monitoring and Follow-up 11.7.10.1 – Follow-up Monitoring (continued)	Additional surveys for plant species considered to be “at risk” within the Project footprint will be carried out in conjunction with other vegetation monitoring programs (e.g., those specified in the vegetation management plan, Kennady Lake dewatering, and dust monitoring program), as the compilation of a plant species list is included as a component.	Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
Section 11.8 – SON: Traffic and Roads			
11.8.1 – Introduction 11.8.1.3 – Study Areas 11.8.1.3.1 – General Location And 11.8.3 – Access and Transportation for the Project 11.8.3.1 – Access and Transportation Plan 11.8.3.1.3 – Environmental Design Features	The Winter Access Road will be constructed and operated in accordance with license and regulatory conditions and with appropriate updates and improvements as required.	Management Environmental Design Feature	Construction Operation Closure
11.8.3 – Access and Transportation for the Project 11.8.3.1 – Access and Transportation Plan 11.8.3.1.1 – Winter Road Access and Transportation And 11.8.3 – Access and Transportation for the Project 11.8.3.1 – Access and Transportation Plan 11.8.3.1.3 – Environmental Design Features	During operations, a large portion of the winter road deliveries will be diesel fuel. As a safety measure and to avoid contact between freight and operations vehicles, the fuel unloading facilities will be located away from operations at the Winter Access Road entrance to the site.	Environmental Design Feature	Construction Operation Closure
11.8.3 – Access and Transportation for the Project 11.8.3.1 – Access and Transportation Plan 11.8.3.1.4 – Environmental Design Features	A Project-specific Emergency Response and Contingency Plan has been prepared to establish a guidance document for emergency responses at the site. This plan provides: <ul style="list-style-type: none">• a clear chain of command for all emergency activities;• accountability for the performance of the spill response;• well defined task and operational hazards/risk; and• reporting and record keeping requirements to track program progress. The plan will be a “living” document and will be updated on a regular basis as new information comes to light or procedures, permits, and authorizations change.	Management	Construction Operation Closure
11.8.4 – Pathway Analysis	The roads will be closed in late winter of each year, before any appreciable snowmelt begins. The annual closure will include removal of all obstructions to watercourses so that the passage of spring runoff is not affected or delayed.	Management Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.8.4.2 – Aquatic Environment Results 11.8.4.2.1 – Pathways with No Linkage	The Winter Access Road will be constructed in accordance with Fisheries and Oceans Canada (DFO's) Protocol for Winter Water Withdrawal in the NWT (1995a) and DFO's Freshwater Intake End-of-Pipe Fish Screen Guidelines (1995b).	Management Environmental Design Feature	Construction Operation Closure
11.8.9 – Monitoring and Follow-up	Upon approval of the Project, monitoring programs will verify predictions and allow for adaptive management responses, as in the case of monitoring portages for signs of erosion.	Monitoring	Construction Operation Closure
	De Beers will monitor the length of hauling seasons for the winter road. If the hauling season is shortened, De Beers will develop options for logistical planning, such as larger storage for fuel and increased trucking over a shorter period.	Management Monitoring	Construction Operation Closure
	As a user of the Tibbitt-to-Contwoyto Winter Road and partner in the Joint Venture, De Beers and its employees will adhere to all regulations established by the Joint Venture, including reporting any concerns relating to the environment, and participating in compliance inspections and ongoing monitoring of the winter road conditions.	Management Monitoring	Construction Operation Closure
	<p>A Wildlife Effects Monitoring Program (WEMP) will be implemented to test environmental impact predictions and reduce the level of uncertainty related to each prediction. The principal goal of the WEMP is to provide information required for the Project's Environmental Management System to adaptively manage the Project to protect wildlife and wildlife habitat. The design of the WEMP will be based on the ability to measure anticipated environmental effects. The principal areas of concern are impacts to wildlife habitat, changes to wildlife behaviour and distribution (which influences local abundance), and wildlife incidences linked to Project activities and facilities. Monitoring will continue through the construction and operation of the Project. Specific objectives of the WEMP would be:</p> <ul style="list-style-type: none">• to verify the accuracy of impact predictions made in the EIS, and identify unanticipated effects;• to implement a wildlife mitigation and management plan designed to reduce the risks and disturbance to wildlife and wildlife habitats;• to determine the effectiveness of the wildlife mitigation and management plan;• to consider and incorporate, where possible, TK into the WEMP;• to design studies and data collection protocols that are consistent with other monitoring programs in the Arctic (e.g., Snap Lake Mine, Diavik Diamond Mine, and Ekati Diamond Mine), and can be used to understand and manage cumulative effects, and participate in regional and/or collaborative programs;• to develop and review the WEMP in collaboration with the Department of the Environment and Natural Resources, Canadian Wildlife Service (Environment Canada), and the communities; and• to provide an annual report that will satisfy all interested and concerned stakeholders, and will provide the opportunity for feedback from communities, governments, and the public.	Monitoring	Construction Operation Closure
Section 11.9 – SON: Waste Management and Wildlife			
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.1 - Introduction	Waste management practices for the Project will incorporate practices that have been proven to be effective and have been used at the Snap Lake Mine and other diamond mines in the NWT.	Management	Construction Operation Closure
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.3 – Waste Recycling	Materials such as waste oil, de-icing fluid, and batteries will be transported to suitable facilities outside of the NWT for recycling. Where Yellowknife recycling facilities do not have the capacity or willingness to accept waste materials from the Project, De Beers will transport the materials to appropriate alternate sites for recycling and/or disposal.	Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.4 – Solid Waste Management Facilities	The landfill will be located within a small area of the mine rock pile or the Fine Processed Kimberlite Containment (PKC) Facility. Landfill waste will be buried to limit exposure to wind, and care will be taken to prevent the inclusion of wastes that could attract wildlife. The landfill in the mine rock piles will represent a single landfill in operation at any given time, which will likely will be covered and buried from year to year to coincide with the mine rock pile developments. As the landfill area(s) would be located in the mine rock piles or the Fine PKC Facility, any potential runoff and seepage from the landfill area will be contained within the Project site.	Environmental Design Feature	Operation Closure
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.4 – Solid Waste Management Facilities (continued)	A fenced area will be established for the handling and temporary storage of wastes. Fencing will be 2 m high, slatted-type, and partially buried to prevent animals from burrowing underneath. Non-food waste products that are not incinerated or placed in the landfill immediately will be collected, sorted, and placed in designated areas within the fenced area.	Environmental Design Feature	Construction Operation Closure
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.4 – Solid Waste Management Facilities	Two dual-chamber, diesel-fired incinerators will be provided for the incineration of combustible waste, including kitchen waste. The incinerators can also be used to burn waste oil. Incinerator ash will be collected in sealed, wildlife-resistant containers, and transported to the landfill. Each modular unit will be pre-assembled and will be housed in a pre-engineered module located near the accommodation complex.	Environmental Design Feature	Construction Operation
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.4 – Solid Waste Management Facilities And 11.9.3.7.1 – Spill Response	Should a spill will occur, a landfarm for the bioremediation of hydrocarbon-contaminated solids from spills may be constructed if appropriate. This dyke bounded cell would be located adjacent to the fuel storage area and would consist of an arctic geo-membrane liner placed under fill material. Hydrocarbon-contaminated soils will be placed in the landfarm and spread during summer months. Any soil that has subsequently reached acceptable levels of hydrocarbon degradation will be removed and reused or transferred to the landfill. Arctic conditions may impede the remediation of contaminated soil through natural microbiological processes. If remediation of hydrocarbon-contaminated soils in the landfarm proves to be ineffective, and no other remediation system has been proved effective in northern climates, the contaminated soils will be collected and shipped to suitable off-site disposal facilities.	Management Environmental Design Feature	Construction Operation Closure
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.4 – Solid Waste Management Facilities	The waste transfer storage area will be established for the handling and temporary storage of wastes. Non-food waste products that are not incinerated or placed in the landfill immediately will be collected, sorted, and placed in designated areas within the storage area. Depending on the nature of the waste (hazardous, recyclable), it will be placed in sealed, wildlife-resistant containers and stored for backhaul to off-site disposal, recycle facilities, or transported to the incinerator or landfill.	Environmental Design Feature	Construction Operation Closure
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.4 – Solid Waste Management Facilities And 11.9.3.7 – Toxic and Hazardous Material Handling	The waste transfer storage area will include a lined and enclosed pad for the collection and subsequent return of hazardous waste to suppliers or to a hazardous waste disposal facility. Toxic materials will be stored in sealed steel or plastic drums. Waste oil will be collected in waste oil storage tanks. Chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums, and stored in suitable sealed containers in the waste transfer area. These chemicals will be shipped off-site for disposal or recycling. Some of the waste will be transferred to the Yellowknife Solid Waste Site. Other recyclable waste such as waste oil, de-icing fluid, and batteries will transferred to waste facilities outside of the NWT.	Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.5 – Domestic Sewage and Greywater	All domestic sewage and grey water discharged to the environment will be treated to meet the required discharge criteria, including the Northwest Territories Water Board's <i>Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories</i> (NWT Water Board 1992).	Management Environmental Design Feature	Construction Operation Closure
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.6.1 - Sorting	The following practices will be implemented for sorting: <ul style="list-style-type: none">• Separate bins will be located throughout the accommodations complex, service complex, process plant, underground shops, and other facilities on-site for immediate sorting of domestic waste.• Steel bins and dumpsters will be located at each major facility for the collection of burnable and non-burnable materials and recyclable wastes such as scrap metal, timber, tires, and unsalvageable equipment.	Environmental Design Feature	Construction Operation Closure
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.6.2 – Food Waste Handling	Food wastes will be collected from the food waste bins in the accommodations complex, service complex, and other facilities and immediately placed and sealed in plastic bags. The plastic bags will then be stored in sealed containers at each facility before transport directly to the incinerator storage area for immediate incineration.	Environmental Design Feature	Construction Operation Closure
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.6.3 – Inert Industrial Wastes	Non-toxic, non-food solid wastes will be sorted into four types: combustible, non-combustible, recyclable, and reusable. Combustible items will be burned in the incinerator (if suitable for disposal), while non-combustible items will be placed in the designated landfill area or recycled if practical. Aerosol cans will be punctured and drained prior to disposal. Inert bulk wastes that cannot readily be recycled or re-used, such as general debris or incinerator ash, will be transferred to the landfill.	Environmental Design Feature	Construction Operation Closure
11.9.3 – Waste Management Plan for the Gahcho Kué Project 11.9.3.7.1 – Spill Response	During construction, operations and closure, the Project will maintain a fully equipped emergency response team to respond to any spills of hazardous materials.	Management	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.9.4.2 – The Waste Management Plan	<p>The following wildlife-specific environmental design features are included in the Waste Management Plan and the Wildlife Effects Mitigation and Management Plan to reduce the numbers of carnivores attracted to the Project and limit human-wildlife interactions and the associated risks of injury/mortality to people and wildlife.</p> <ul style="list-style-type: none">• Assigning designated contained areas for lunch and coffee breaks for construction and outdoor operations.• Separation of food waste and non-food waste at source.• Identifying all food waste storage containers (i.e., bins, drums, and plastic receptacles) as “Food Waste Only”; a label stating “No Food Waste” will be applied to all containers not designated for this purpose.• Food waste and other attractants will be incinerated prior to depositing in landfill.• Inert solid-waste landfill will be contained within the mine rock pile and regularly covered with mine rock.• Waste management awareness and incentive programs will be implemented, which include rewards for compliance.• Quick disposal of waste will reduce holding time.• Hazardous material will be shipped south for recycling.• Waste streams will be monitored and the sources of misdirected waste will be identified and managed.• Waste facilities will be fenced.• Incinerators will be enclosed in a building.• Training will be provided to on-site personnel about wildlife awareness and safety including the dangers of improper food waste disposal and feeding wildlife.• No foil-lined drinking boxes will be permitted on-site (drink boxes were a commonly-found attractant at the Ekati landfill).• Ongoing review of the efficiency of the waste management program and improvement through adaptive management.	Management Monitoring	Construction Operation Closure
	<p>The most important element in reducing interactions between the Project and wildlife is preventing carnivores from being attracted to food and food wastes. To reduce this problem, food wastes will be collected from the food waste bins in the accommodations complex, service complex, and other facilities and placed in sealed plastic bags. The plastic bags will be stored in sealed containers and transported directly to the incinerator storage area for immediate incineration. Dual-chamber, diesel oil-fired incinerators will incinerate combustible waste. Each modular unit will be pre-assembled complete with a diesel fuel storage tank and will be housed in a pre-engineered module attached to the accommodations complex.</p>	Management Environmental Design Feature	Construction Operation Closure
	<p>Inert solid waste will be deposited into a landfill that will be located within a small area of the mine rock pile or Fine PKC Facility. Waste will be buried to limit exposure to wind and care will be taken to prevent the inclusion of wastes that could potentially attract wildlife.</p>	Environmental Design Feature	Construction Operation Closure
	<p>Environmental design features to reduce air and water emissions that could affect the receiving environment include:</p> <ul style="list-style-type: none">• screening waste bound for the incinerator for metal containing and chlorinated organic waste to minimize the combustion of material that could lead to potentially harmful emissions;• engineering and operating the waste incinerator to meet the CCME emission standards for dioxins and furans (CCME 2001); and• a sewage treatment plant sized to handle the needs of 650 people will be installed as part of the initial construction infrastructure. It will be adapted as necessary so that effluent meets all discharge criteria.	Environmental Design Feature	Construction Operation Closure
11.9.5 – Capacity of the Receiving Environment	<p>The waste incinerator will meet CCME Canada Wide Standards for Dioxins and Furans (CCME 2001), and so air emissions are expected to be within the capacity of the environment.</p>	Management Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
Section 11.10 – SON: Carnivore Mortality;			
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3	<p>The direct loss and fragmentation of wildlife habitat from the physical footprint of the Project may alter carnivore movement and behaviour:</p> <ul style="list-style-type: none">• backfilling the mined-out pits with PK and mine rock will decrease the on-land Project footprint• compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiency• mine rock will be used as the source of aggregate production, thereby , reducing the need for separate quarries• blasting in pits will be carefully planned and controlled to maintain a safe workplace and reduce the throw of ore bearing materials• where practical, natural drainage patterns will be used to reduce the use of ditches or diversion berms• to the extent practical, the total amount of area disturbed by Project activities at any one time will be reduced through the use of progressive reclamation• ramps to facilitate the access and egress of carnivores from the mine rock pile will be constructed during closure• culverts or stream-crossing structures will be removed and natural drainage re-established• at closure, transportation corridors the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where required• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape• conditions will be monitored over time to evaluate the success of the Closure and Reclamation Plan and, using adaptive management and newer proven methods as available, adjust the Plan, if necessary• De Beers will actively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation	Management Environmental Design Feature Monitoring	Construction Operation Closure
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	<p>Physical hazards from the Project may increase the risk of injury/mortality to individual animals, which can affect carnivore population sizes:</p> <ul style="list-style-type: none">• backfilling the mined-out pits with PK and mine rock will decrease the on-land Project footprint• compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiency• mine rock will be used as the source of aggregate production, thereby, reducing the need for separate quarries• blasting in pits will be carefully planned and controlled to maintain a safe workplace and reduce the throw of ore bearing materials• where practical, natural drainage patterns will be used to reduce the use of ditches or diversion berms• to the extent practical, the total amount of area disturbed by Project activities at any one time will be reduced through the use of progressive reclamation• ramps to facilitate the access and egress of carnivores from the mine rock pile will be constructed during closure• culverts or stream-crossing structures will be removed and natural drainage re-established• at closure, transportation corridors the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where required• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape• conditions will be monitored over time to evaluate the success of the Closure and Reclamation Plan and, using adaptive management and newer proven methods as available, adjust the Plan, if necessary• De Beers will actively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	Dust deposition may cover vegetation and decrease abundance of forage for prey species and carnivores (i.e., habitat quantity): <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• programs will be instituted to review power and heat use to reduce energy use and, therefore air emissions• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	Dust deposition may cover vegetation and change the amount of different quality habitats for prey species, and alter carnivore movement and behaviour: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• programs will be instituted to review power and heat use to reduce energy use and, therefore air emissions• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
	Dust deposition and air emissions may change the amount of different quality habitats, and alter carnivore movement and behaviour through changes in the chemical content of soil, vegetation, water, and air: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• programs will be instituted to review power and heat use to reduce energy use and, therefore air emissions• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	Ingestion of soil, vegetation, and water, or inhalation of air that has been chemically altered by air emissions (including NOx and PAH deposition) or dust deposition, may affect carnivore survival and reproduction: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• programs will be instituted to review power and heat use to reduce energy use and, therefore air emissions• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
	Sensory disturbance (e.g., presence of buildings, people, lights, smells, aircraft, and on-site vehicles) changes the amount of different quality habitats, and alters carnivore movement and behaviour, which can influence survival and reproduction: <ul style="list-style-type: none">• compact layout of the surface facilities will limit the area disturbed at construction and reduce traffic around the site• a minimum flying altitude of 300 m above ground level (except during takeoff and landing) will be maintained for cargo, passenger aircraft, and helicopter outside of the Project site• limit the amount of noise from the Project site to the extent practical• equipment and noise sources will be limited by locating them inside buildings, to the extent possible• downward directional and low impact lighting will be used to reduce light pollution• a minimum 200-m distance from wildlife will be maintained, when possible• environmental sensitivity training for personnel• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape• during closure, lighting, navigation equipment, and culverts will be removed, and contouring will be done to blend the site with the surrounding landscape	Environmental Design Feature	Construction Operation Closure
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	Aircraft/vehicle collisions may cause injury/mortality to individual animals: <ul style="list-style-type: none">• personnel arriving at or leaving the site will be transported by bus, which will decrease the amount of traffic between the airstrip and the accommodations complex• speed limits will be established and enforced• wildlife will be provided with the “right of way”• levels of private traffic using the Project Winter Access Road will be monitored• the site will be designed to limit blind spots, where possible, to reduce the risk of accidental wildlife-human encounters• drivers will be warned when wildlife are moving through an area using signage and radio	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	<p>Chemical spills (including de-icing fluid run off) may cause negative changes to health or mortality of individual animals:</p> <ul style="list-style-type: none">• processing of the kimberlite ore will be mechanical, with limited use of chemicals• hazardous, non-combustible waste and contaminated materials will be temporarily stored in the waste storage transfer area in sealed steel or plastic, wildlife-resistant drums, and shipped off-site for disposal or recycling• chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums, and stored in suitable sealed containers in the waste transfer area• the waste transfer storage area will include a lined and enclosed pad for the collection and subsequent return of hazardous waste to suppliers or to a hazardous waste disposal facility• emulsion materials will be stored at the emulsion plant where spills would be 100% contained within the building• all fuel storage tanks will be designed and constructed according to the American Petroleum Institute 650 standard and placed in a lined and dyked containment area to contain any potential fuel spills• aviation fuel will be stored in self-contained, Underwriters Laboratories Canada-rated enviro tanks mounted on an elevated pad at the air terminal shelter• aviation fuel for helicopters will be stored in sealed drums inside a lined berm area near the airstrip• to prevent accumulation and/or runoff of de-icing fluids at the airstrip from aircraft de-icing operations, aircraft will be sprayed in a specific area that will be equipped with swales to collect excess fluids if necessary• puddles of de-icing fluids in the swales will be removed by vacuum truck and deposited into waste de-icing fluid drums for shipment to recycling facilities if necessary• hazardous materials will be stored in sealed containers and drums in a lined transfer area until they are retrieved directly by licensed companies specializing in the handling of these materials• an Emergency Response and Contingency Plan has been developed• spill containment supplies will be in designated areas• any spills will be isolated and immediately cleaned up by a trained spill response team consisting of on-site personnel who will be available at all times	Management Environmental Design Feature	Construction Operation Closure
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	<p>Attractants to site (e.g., food waste, oil products) may increase the risk of mortality to individual animals and affect carnivore population sizes:</p> <ul style="list-style-type: none">• separate bins will be located throughout the accommodations complex, processing plant, shops, and other facilities on-site for immediate sorting of domestic wastes• food wastes will be collected from the food waste bins in the accommodations complex, service complex, and other facilities and immediately placed and sealed in plastic bags; the plastic bags will be stored in sealed containers at each facility before transport directly to the incinerator storage area for incineration• chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums and stored in suitable sealed containers in the waste transfer area; chemicals that cannot be incinerated will be shipped off-site for disposal or recycling• incinerator ash from combustion of kitchen and office waste will go to the landfill• inert solid waste will be deposited into a small area of the mine rock piles or Fine PKC Facility• care will be taken to prevent the inclusion of wastes that could attract wildlife• two dual-chambered, diesel-fired incinerators will be provided for the incineration of combustible waste, including kitchen waste; the incinerators will also be used to burn waste oil; Incinerator ash will be collected in sealed, wildlife-resistant containers and transported to the landfill• a fenced area will be established for the handling and temporary storage of wastes; fencing will be 2 m high, slatted-type, and partially buried to prevent animals from burrowing underneath• education and reinforcement of proper waste management practices will be required for all workers and visitors to the site• the efficiency of the waste management program and improvement through adaptive management will be reviewed as needed	Management Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	<p>Leaching of PAG mine rock may change the amount of different quality habitats, and alter carnivore movement and behaviour:</p> <ul style="list-style-type: none">• mine rock used to construct the dykes will be non-acid generating (NAG)• any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pH• any potentially acid-generating (PAG) mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be under water when Kennady Lake is refilled• till from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into the portion of the repository• the PAG rock will be enclosed within enough NAG rock that the active frost zone (typically two metres) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areas• to confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructed• minimal water is expected to penetrate to the PAG rock areas• only non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock• thermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are prediction to remain permanently frozen• mine rock piles will not be covered or vegetated to limit attraction of wildlife to them after Project closure	Environmental Design Feature Monitoring	Construction Operation Closure
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	<p>Ingestion of soil, vegetation, or water that has been chemically altered by leaching of PAG mine rock may affect carnivore survival and reproduction:</p> <ul style="list-style-type: none">• mine rock used to construct the dykes will be non-acid generating (NAG)• any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pH• any potentially acid-generating (PAG) mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be under water when Kennady Lake is refilled• till from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into the portion of the repository• the PAG rock will be enclosed within enough NAG rock that the active frost zone (typically two metres) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areas• to confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructed• minimal water is expected to penetrate to the PAG rock areas• only non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock• thermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are prediction to remain permanently frozen• mine rock piles will not be covered or vegetated to limit attraction of wildlife to them after Project closure	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	<p>Release of seepage and surface water runoff (including erosion) from the Fine PKC Facility, Coarse PK and mine rock piles may change the amount of different quality habitats, and alter carnivore movement and behaviour:</p> <ul style="list-style-type: none">the performance of the dykes will be monitored throughout their construction and operating life; instrumentation monitoring together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidentsa system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pitssite runoff will flow naturally to the dewatered areas of Kennady Lake that will act as a control basin for storage of water; within this basin, water flows can be managed where practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsno substantial runoff and seepage from the mine rock piles is expected.a soil-bentonite slurry cutoff wall through a till fill zone placed over the overburden and the overburden to the bedrock surface has been adopted as the main seepage control for the diversion dyke separating Areas 7 and 8the cut-off wall for the dyke separating Areas 7 and 8 will be protected by a downstream filter zone and mine rock shell zonefor the retention dyke that separates Areas 3 and 4, Areas 5 and 6, and Areas 4 and 6, a wide till core has been selected as the main seepage controlthe water retention dyke separating Area 2 and Lake N7, as well as diversion dykes dealing with Lakes A3, A4, B1, N13, D2, E1, and E3 will have a liner keyed into the competent frozen ground or bedrock to control seepagethe curved filter dyke to retain the particles in the fine PK placed in Areas 1 and 2 will be construction material and will be free of roots, organics, and materials not suitable for constructionthe PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.thermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are prediction to remain permanently frozenthe Coarse PK Pile will be shaped and covered with a layer of mine rock of a minimum 1 m to limit surface erosion; the coarse PK is a sandy-gravelly material that is coarse enough not to be susceptible to wind movementonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock pile; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	Ingestion of seepage and surface water runoff from the Coarse PK and mine rock piles, or ingestion of soil, vegetation, or water that has been chemically altered by seepage and runoff, may affect carnivore survival and reproduction: <ul style="list-style-type: none">the performance of the dykes will be monitored throughout their construction and operating life; instrumentation monitoring together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidentsa system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pitssite runoff will flow naturally to the dewatered areas of Kennady Lake that will act as a control basin for storage of water; within this basin, water flows can be managed where practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsno substantial runoff and seepage from the mine rock piles is expected.a soil-bentonite slurry cutoff wall through a till fill zone placed over the overburden and the overburden to the bedrock surface has been adopted as the main seepage control for the diversion dyke separating Areas 7 and 8the cut-off wall for the dyke separating Areas 7 and 8 will be protected by a downstream filter zone and mine rock shell zonefor the retention dyke that separates Areas 3 and 4, Areas 5 and 6, and Areas 4 and 6, a wide till core has been selected as the main seepage controlthe water retention dyke separating Area 2 and Lake N7, as well as diversion dykes dealing with Lakes A3, A4, B1, N13, D2, E1, and E3 will have a liner keyed into the competent frozen ground or bedrock to control seepagethe curved filter dyke to retain the particles in the fine PK placed in Areas 1 and 2 will be construction material and will be free of roots, organics, and materials not suitable for constructionthe PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areasthermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are prediction to remain permanently frozenthe Coarse PK Pile will be shaped and covered with a layer of mine rock of a minimum 1 m to limit surface erosion; the coarse PK is a sandy-gravelly material that is coarse enough not to be susceptible to wind movementonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock pile; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock	Environmental Design Feature Monitoring	Construction Operation Closure
	Road footprint decreases habitat quantity and may cause fragmentation, which can alter carnivore movement and behaviour: <ul style="list-style-type: none">low profile roads will be used so that they do not act as a barrier to movement for wildlifewinter road snow berms will be removed so that they do not act as a barrier to movement for wildlife	Environmental Design Feature	Construction Operation Closure
	Road footprint may cause changes to the amount of different quality habitats (e.g., degradation to vegetation), and alter carnivore movement and behaviour: <ul style="list-style-type: none">use of proven best practices for winter road construction	Management Environmental Design Feature	Construction Operation Closure
	Increased access for traditional and non-traditional harvesting may alter carnivore movement and behaviour, which can affect survival and reproduction: <ul style="list-style-type: none">seasonal use of Winter Access Roadprohibit firearms of any type, bows, and crossbows at the Projectprohibit hunting, trapping, harvesting, and fishing by employees and contractors and enforce this prohibition	Management Environmental Design Feature	Construction Operation Closure
	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from dewatering of Kennady Lake may affect the quantity of riparian habitat, which could alter carnivore movement and behaviour: <ul style="list-style-type: none">Lake N11 is capable of accepting water at the proposed discharge rate without erosion damage to downstream watercourses	Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	Dewatering may result in newly established vegetation on the exposed lakebed sediments and increase habitat quantity, which may alter carnivore movement and behaviour: <ul style="list-style-type: none">• dykes will be constructed to divert fresh water from entering areas of Kennady Lake• the height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watershed• dewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation
	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from dewatering Kennady Lake may cause injury/mortality to individual animals: <ul style="list-style-type: none">• dykes will be constructed to divert fresh water from entering areas of Kennady Lake• the height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watershed• dewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation
	Changes in the timing of freeze and break-up downstream may alter carnivore movement and behaviour, and could cause injury/mortality to individual animals: <ul style="list-style-type: none">• dykes will be constructed to divert fresh water from entering areas of Kennady Lake• the height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watershed• dewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation
11.10.3 – Pathway Analysis 11.10.3.2 – Results Table 11.10-3 (continued)	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from the refilling of Kennady Lake may affect the quantity of riparian habitat, which could alter carnivore movement and behaviour: <ul style="list-style-type: none">• mined-out pits will be backfilled with PK and mine rock to reduce the time required for filling these portions of Kennady Lake because less water is required to refill the partially backfilled pits• Kennady Lake will be refilled using natural runoff and supplemental water drawn from Lake N11• while fine PK is being discharged in the mined-out pits (primarily Hearne, but potentially 5034) process water will not be reclaimed from the pits; instead the slurry discharge water will be used to accelerate the infill of the mined-out pits; the process will facilitate a more rapid re-filling and progressive reclamation of Area 6 within Kennady Lake• the 5034 pit will be backfilled to the extent possible with mine rock and the remaining space will be eventually filled with water once mining in the Tuzo Pit is complete• the Tuzo Pit will be allowed to flood following the completion of the operations phase; natural watershed inflows will be supplemented by pumping water from Lake N11• the pumping rates are anticipated to be managed such that the total outflow from Lake N11 does not drop below the 1 in 5-year dry conditions	Environmental Design Feature	Construction Operation Closure
	Long-term seepage from the PK and mine rock piles may cause local changes to habitat quality, and alter carnivore movement and behaviour: <ul style="list-style-type: none">• the PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.• thermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are predicted to remain permanently frozen• the Coarse PK Pile will be shaped and covered with a layer of mine rock of a minimum 1 m to limit surface erosion• only non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock.	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.10.10 – Monitoring and Follow-up	<p>A wildlife effects monitoring program (WEMP) will be implemented to test impact predictions and further reduce any uncertainty related to each prediction. The principal goal of the WEMP is to provide information required for the Project's Environmental Management System to adaptively manage the Project to protect wildlife and wildlife habitat. Based on the definitions of monitoring in the Terms of Reference (Section 3.2.7, Gahcho Kué Panel 2007), the WEMP would consist of environmental monitoring and follow-up programs. Measurement endpoints for testing impact predictions (i.e., monitoring effects) from the Project will likely include:</p> <ul style="list-style-type: none">• direct habitat effects (changes in habitat quantity from the Project footprint);• indirect habitat effects (changes in habitat quality, and animal abundance and distribution from sensory disturbance within the predicted zone of influence); and• direct mine-related mortality (i.e., number of interactions, injuries, mortality) linked to Project infrastructure and activities. <p>Specific objectives of the WEMP would be:</p> <ul style="list-style-type: none">• to verify the accuracy of impact predictions made in the EIS, and identify unanticipated effects;• to implement a wildlife effects mitigation and management plan designed to reduce the risks and disturbance to wildlife and wildlife habitats;• to determine the effectiveness of the wildlife effects mitigation and management plan;• to consider and incorporate, where possible, traditional knowledge (TK) into the WEMP;• to design studies and data collection protocols that are consistent with other monitoring programs in the Arctic (e.g., Snap Lake Mine, Diavik Diamond Mine, and Ekati Diamond Mine), and can be used to understand and manage cumulative effects, and participate in regional and/or collaborative programs;• to develop and review the WEMP in collaboration with the Department of the Environment and Natural Resources, Canadian Wildlife Service (Environment Canada), and the communities; and• to provide an annual report that will satisfy the appropriate government agencies responsible for wildlife, and will provide the opportunity for feedback from communities, governments, and the public.	Monitoring	Construction Operation Closure
	Species selected for effects monitoring would be based on recent and current environmental assessments and monitoring programs in the NWT and Nunavut, and may include grizzly bears and wolverines. Following the principals of adaptive management, species selected for monitoring may be periodically reviewed by government, community, and regulatory agencies, and changed as necessary.	Monitoring	Construction Operation Closure
	De Beers is committed to considering and incorporating TK into the WEMP. The incorporation of TK would occur throughout all stages of the WEMP, including identification of mitigation practices and policies, data collection, and follow-up programs to obtain feedback Results of any relevant community-based monitoring studies would be incorporated into the annual WEMP report (with permission from the communities). As with all aspects of the WEMP, the incorporation of TK would be a continuously evolving process.	Monitoring	Construction Operation Closure
	Community members will be invited to participate in data collection programs. This includes specific species monitoring programs (e.g., caribou aerial surveys, habitat use by grizzly bears, and wolverine snow track surveys). The involvement of community members in field data collection is expected to contribute to overall efficiency as well as provide feedback and ideas.	Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
Section 11.11 – SON: Other Ungulates			
11.11.3 – Pathway Analysis 11.11.3.2 – Results Table 11.11-2	<p>The direct loss and fragmentation of wildlife habitat from the physical footprint of the Project may alter moose and muskoxen movement and behaviour:</p> <ul style="list-style-type: none">• backfilling the mined-out pits with PK and mine rock will decrease the on-land Project footprint• compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiency• mine rock will be used as the source of aggregate production, thereby , reducing the need for separate quarries• blasting in pits will be carefully planned and controlled to maintain a safe workplace and reduce the throw of ore bearing materials• where practical, natural drainage patterns will be used to reduce the use of ditches or diversion berms• to the extent practical, the total amount of area disturbed by Project activities at any one time will be reduced through the use of progressive reclamation• ramps to facilitate the access and egress of moose and muskoxen from the mine rock pile will be constructed during closure• culverts or stream-crossing structures will be removed and natural drainage re-established• at closure, transportation corridors the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where required• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape• conditions will be monitored over time to evaluate the success of the Closure and Reclamation Plan and, using adaptive management and newer proven methods as available, adjust the Plan, if necessary• De Beers will actively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation	Management Environmental Design Feature Monitoring	Construction Operation Closure
11.11.3 – Pathway Analysis 11.11.3.2 – Results Table 11.11-2 (continued)	<p>Physical hazards from the Project may increase the risk of injury/mortality to individual animals, which can affect moose and muskoxen population sizes:</p> <ul style="list-style-type: none">• backfilling the mined-out pits with PK and mine rock will decrease the on-land Project footprint• compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiency• mine rock will be used as the source of aggregate production, thereby, reducing the need for separate quarries• blasting in pits will be carefully planned and controlled to maintain a safe workplace and reduce the throw of ore bearing materials• where practical, natural drainage patterns will be used to reduce the use of ditches or diversion berms• to the extent practical, the total amount of area disturbed by Project activities at any one time will be reduced through the use of progressive reclamation• ramps to facilitate the access and egress of moose and muskoxen from the mine rock pile will be constructed during closure• culverts or stream-crossing structures will be removed and natural drainage re-established• at closure, transportation corridors the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where required• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape• conditions will be monitored over time to evaluate the success of the Closure and Reclamation Plan and, using adaptive management and newer proven methods as available, adjust the Plan, if necessary• De Beers will actively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.11.3 – Pathway Analysis 11.11.3.2 – Results Table 11.11-2 (continued)	Dust deposition may cover vegetation and decrease abundance of forage for moose and muskoxen (i.e., habitat quantity): <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• power and heat use to reduce energy use and, therefore air emissions, will be reviewed on a regular basis• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
	Dust deposition may cover vegetation and change the amount of different quality habitats, and alter moose and muskoxen movement and behaviour: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• power and heat use to reduce energy use and, therefore air emissions, will be reviewed on a regular basis• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
	Dust deposition and air emissions may change the amount of different quality habitats (through chemical changes in soil and vegetation, and alter moose and muskoxen movement and behaviour): <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• power and heat use to reduce energy use and, therefore air emissions, will be reviewed on a regular basis• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.11.3 – Pathway Analysis 11.11.3.2 – Results Table 11.11-2 (continued)	Ingestion of soil, vegetation, and water, or inhalation of air that has been chemically altered by air emissions (including NOx and PAH deposition) or dust deposition, may affect moose and muskoxen survival and reproduction: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• power and heat use to reduce energy use and, therefore air emissions, will be reviewed on a regular basis• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
	Sensory disturbance (e.g., presence of buildings, people, lights, smells, and noise) changes the amount of different quality habitats, and alters moose and muskoxen movement and behaviour, which can influence survival and reproduction: <ul style="list-style-type: none">• compact layout of the surface facilities will limit the area disturbed at construction and reduce traffic around the site• a minimum flying altitude of 300 m above ground level (except during takeoff, landing and field work) will be maintained for cargo, passenger aircraft, and helicopter outside of the Project site• limit the amount of noise from the Project site to the extent practical• equipment noise sources will be limited by locating them inside buildings, to the extent possible• downward directional and low impact lighting will be used to reduce light pollution• a minimum 200-m distance from wildlife will be maintained, when possible• environmental sensitivity training for personnel• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape• during closure, lighting, navigation equipment, and culverts will be removed, and contouring will be done to blend the site with the surrounding landscape	Environmental Design Feature	Construction Operation Closure
	Aircraft/vehicle collisions may cause injury/mortality to individual animals: <ul style="list-style-type: none">• personnel arriving at or leaving the site will be transported by bus, which will decrease the amount of traffic between the airstrip and the accommodations complex• speed limits will be established and enforced• wildlife will be provided with the “right of way”• levels of private traffic using the Project Winter Access Road will be monitored• the site will be designed to limit blind spots, where possible, to reduce the risk of accidental wildlife-human encounters• drivers will be warned when wildlife are moving through an area using signage and radio• safe, effective methods will be used to remove moose and muskoxen from the airstrip before aircraft land or takeoff	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.11.3 – Pathway Analysis 11.11.3.2 – Results Table 11.11-2 (continued)	<p>Chemical spills (including de-icing fluid run off) may cause negative changes to health or mortality of individual animals:</p> <ul style="list-style-type: none">• processing of the kimberlite ore will be mechanical, with limited use of chemicals• hazardous, non-combustible waste and contaminated materials will be temporarily stored in the waste storage transfer area in sealed steel or plastic, wildlife-resistant drums, and shipped off-site for disposal or recycling• chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums, and stored in suitable sealed containers in the waste transfer area• the waste transfer storage area will include a lined and enclosed pad for the collection and subsequent return of hazardous waste to suppliers or to a hazardous waste disposal facility• emulsion materials will be stored at the emulsion plant where spills would be 100% contained within the building• all fuel storage tanks will be designed and constructed according to the American Petroleum Institute 650 standard and placed in a lined and dyked containment area to contain any potential fuel spills• aviation fuel will be stored in self-contained, Underwriters Laboratories Canada-rated envirotanks mounted on an elevated pad at the air terminal shelter• aviation fuel for helicopters will be stored in sealed drums inside a lined berm area near the airstrip• to prevent accumulation and/or runoff of de-icing fluids at the airstrip from aircraft de-icing operations, aircraft will be sprayed in a specific area that will be equipped with swales to collect excess fluids if necessary• puddles of de-icing fluids in the swales will be removed by vacuum truck and deposited into waste de-icing fluid drums for shipment to recycling facilities if necessary• hazardous materials will be stored in sealed containers and drums in a lined transfer area until they are retrieved directly by licensed companies specializing in the handling of these materials• an Emergency Response and Contingency Plan has been developed• spill containment supplies will be in designated areas• any spills will be isolated and immediately cleaned up by a trained spill response team consisting of on-site personnel who will be available at all times	Management Environmental Design Feature	Construction Operation Closure
	<p>Attractants to site (e.g., food waste, oil products) may predator numbers and increase predation risk:</p> <ul style="list-style-type: none">• separate bins will be located throughout the accommodations complex, processing plant, shops, and other facilities on-site for immediate sorting of domestic wastes• food wastes will be collected from the food waste bins in the accommodations complex, service complex, and other facilities and immediately placed and sealed in plastic bags; the plastic bags will be stored in sealed containers at each facility before transport directly to the incinerator storage area for incineration• chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums and stored in suitable sealed containers in the waste transfer area; chemicals that cannot be incinerated will be shipped off-site for disposal or recycling• incinerator ash from combustion of kitchen and office waste will go to the landfill• inert solid waste will be deposited into a small area of the mine rock piles or Fine PKC Facility• care will be taken to prevent the inclusion of wastes that could attract wildlife• two dual-chambered, diesel-fired incinerators will be provided for the incineration of combustible waste, including kitchen waste; the incinerators will also be used to burn waste oil; Incinerator ash will be collected in sealed, wildlife-resistant containers and transported to the landfill• a fenced area will be established for the handling and temporary storage of wastes; fencing will be 2 m high, slatted-type, and partially buried to prevent animals from burrowing underneath• education and reinforcement of proper waste management practices will be required for all workers and visitors to the site• the efficiency of the waste management program and improvement through adaptive management will be reviewed as needed	Management Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.11.3 – Pathway Analysis 11.11.3.2 – Results Table 11.11-2 (continued)	Leaching of PAG mine rock may change the amount of different quality habitats, and alter moose and muskoxen movement and behaviour: <ul style="list-style-type: none">mine rock used to construct the dykes will be non-acid generating (NAG)any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pHany PAG mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be underwater when Kennady Lake is refilledtill from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into the portion of the repositorythe PAG rock will be enclosed within enough NAG rock that the active frost zone (typically two metres) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areasto confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructedminimal water is expected to penetrate to the PAG rock areasonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rockthermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozenmine rock piles will not be covered or vegetated to limit attraction of wildlife to them after Project closure	Environmental Design Feature Monitoring	Construction Operation Closure
	Ingestion of soil, vegetation, or water that has been chemically altered by leaching of PAG mine rock may affect moose and muskoxen survival and reproduction: <ul style="list-style-type: none">mine rock used to construct the dykes will be non-acid generating (NAG)any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pHany PAG mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be underwater when Kennady Lake is refilledtill from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into the portion of the repositorythe PAG rock will be enclosed within enough NAG rock that the active frost zone (typically two metres) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areasto confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructedminimal water is expected to penetrate to the PAG rock areasonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rockthermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozenmine rock piles will not be covered or vegetated to limit attraction of wildlife to them after Project closure	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.11.3 – Pathway Analysis 11.11.3.2 – Results Table 11.11-2 (continued)	<p>Release of seepage and surface water runoff (including erosion) from the Fine PKC Facility, Coarse PK and mine rock piles may change the amount of different quality habitats, and alter moose and muskoxen movement and behaviour:</p> <ul style="list-style-type: none">the performance of the dykes will be monitored throughout their construction and operating life; instrumentation monitoring together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidents. Additional mitigation will be applied, if required.a system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pitssite runoff will flow naturally to the dewatered areas of Kennady Lake that will act as a control basin for storage of water; within this basin, water flows can be managed where practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsno substantial runoff and seepage from the mine rock piles is expected.a soil-bentonite slurry cutoff wall through a till fill zone placed over the overburden and the overburden to the bedrock surface has been adopted as the main seepage control for the diversion dyke separating Areas 7 and 8the cut-off wall for the dyke separating Areas 7 and 8 will be protected by a downstream filter zone and mine rock shell zonefor the retention dyke that separates Areas 3 and 4, Areas 5 and 6, and Areas 4 and 6, a wide till core has been selected as the main seepage controlthe water retention dyke separating Area 2 and Lake N7, as well as diversion dykes dealing with Lakes A3, A4, B1, N13, D2, E1, and E3 will have a liner keyed into the competent frozen ground or bedrock to control seepagethe curved filter dyke to retain the particles in the fine PK placed in Areas 1 and 2 will be construction material and will be free of roots, organics, and other materials not suitable for constructionthe PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.thermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozenonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock pile; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.11.3 – Pathway Analysis 11.11.3.2 – Results Table 11.11-2 (continued)	Ingestion of seepage and surface water runoff from the PK and mine rock piles, or ingestion of soil, vegetation, or water that has been chemically altered by seepage and runoff, may affect moose and muskoxen survival and reproduction: <ul style="list-style-type: none">the performance of the dykes will be monitored throughout their construction and operating life; instrumentation monitoring together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidents. Additional mitigation will be applied, if required.a system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pitssite runoff will flow naturally to the dewatered areas of Kennady Lake that will act as a control basin for storage of water; within this basin, water flows can be managed where practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsno substantial runoff and seepage from the mine rock piles is expected.a soil-bentonite slurry cutoff wall through a till fill zone placed over the overburden and the overburden to the bedrock surface has been adopted as the main seepage control for the diversion dyke separating Areas 7 and 8the cut-off wall for the dyke separating Areas 7 and 8 will be protected by a downstream filter zone and mine rock shell zonefor the retention dyke that separates Areas 3 and 4, Areas 5 and 6, and Areas 4 and 6, a wide till core has been selected as the main seepage controlthe water retention dyke separating Area 2 and Lake N7, as well as diversion dykes dealing with Lakes A3, A4, B1, N13, D2, E1, and E3 will have a liner keyed into the competent frozen ground or bedrock to control seepagethe curved filter dyke to retain the particles in the fine PK placed in Areas 1 and 2 will be construction material and will be free of roots, organics, and other materials not suitable for constructionthe PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.thermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozenonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock pile; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock	Environmental Design Feature Monitoring	Construction Operation Closure
	Road footprint decreases habitat quantity and may cause fragmentation, which can alter moose and muskoxen movement and behaviour: <ul style="list-style-type: none">low profile roads will be used so that they do not act as a barrier to movement for wildlifewinter road snow berms will be removed so that they do not act as a barrier to movement for wildlife	Environmental Design Feature	Construction Operation Closure
	Road footprint may cause changes to the amount of different quality habitats (e.g., degradation to vegetation), and alter moose and muskoxen movement and behaviour: <ul style="list-style-type: none">use of proven best practices for winter road construction	Management Environmental Design Feature	Construction Operation Closure
	Increased access for traditional and non-traditional harvesting may alter moose and muskoxen movement and behaviour, which can affect survival and reproduction: <ul style="list-style-type: none">seasonal use of Winter Access Roadprohibit firearms of any type, bows, and crossbows at the Projectprohibit hunting, trapping, harvesting, and fishing by employees and contractors and enforce this prohibition	Management Environmental Design Feature	Construction Operation Closure
	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from dewatering of Kennady Lake may affect the quantity of riparian habitat, which could alter moose and muskoxen movement and behaviour: <ul style="list-style-type: none">Lake N11 is capable of accepting water at the proposed discharge rate without erosion damage to downstream watercourses	Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.11.3 – Pathway Analysis 11.11.3.2 – Results Table 11.11-2 (continued)	Dewatering may result in newly established vegetation on the exposed lakebed sediments and increase habitat quantity, which may alter moose and muskoxen movement and behaviour: <ul style="list-style-type: none">dykes will be constructed to divert fresh water from entering areas of Kennady Lakethe height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watersheddewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation
	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from dewatering Kennady Lake may cause injury/mortality to individual animals: <ul style="list-style-type: none">dykes will be constructed to divert fresh water from entering areas of Kennady Lakethe height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watersheddewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation
	Changes in the timing of freeze and break-up downstream may alter moose and muskoxen movement and behaviour, and could cause injury/mortality to individual animals: <ul style="list-style-type: none">dykes will be constructed to divert fresh water from entering areas of Kennady Lakethe height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watersheddewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation
	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from the refilling of Kennady Lake may affect the quantity of riparian habitat, which could alter moose and muskoxen movement and behaviour: <ul style="list-style-type: none">mined-out pits will be backfilled with PK and mine rock to reduce the time required for filling these portions of Kennady Lake because less water is required to refill the partially backfilled pitsKennady Lake will be refilled using natural runoff and supplemental water drawn from Lake N11while fine PK is being discharged in the mined-out pits (primarily Hearne, but potentially 5034) process water will not be reclaimed from the pits; instead the slurry discharge water will be used to accelerate the infill of the mined-out pits; the process will facilitate a more rapid re-filling and progressive reclamation of Area 6 within Kennady Lakethe 5034 pit will be backfilled to the extent possible with mine rock and the remaining space will be eventually filled with water once mining in the Tuzo Pit is completethe Tuzo Pit will be allowed to flood following the completion of the operations phase; natural watershed inflows will be supplemented by pumping water from Lake N11the pumping rates are anticipated to be managed such that the total outflow from Lake N11 does not drop below the 1 in 5-year dry conditions	Environmental Design Feature	Construction Operation Closure
	Long-term seepage from the Coarse PK Pile and mine rock piles may cause local changes to habitat quality, and alter moose and muskoxen movement and behaviour: <ul style="list-style-type: none">the PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.thermistors will be installed within the mine rock piles to monitor the progression of permafrost development The upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are expected to remain permanently frozenthe coarse PK pile will be shaped and covered with a layer of mine rock of a minimum 1 m to limit surface erosiononly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rockno substantial runoff and seepage from the mine rock piles is expected	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.11.10 – Monitoring and Follow-up	<p>A wildlife effects monitoring program (WEMP) will be implemented to test impact predictions and further reduce any uncertainty related to each prediction. The principal goal of the WEMP is to provide information required for the Project Environmental Management System to adaptively manage the Project to protect wildlife and wildlife habitat. Based on the definitions of monitoring in Section 3.2.7 of the Terms of Reference (Gahcho Kué Panel 2007), the WEMP would consist of environmental monitoring and follow-up programs. Measurement endpoints for testing impact predictions (i.e., monitoring effects) from the Project will likely include:</p> <ul style="list-style-type: none">• direct habitat effects (changes in habitat quantity from Project footprint);• indirect habitat effects (changes in habitat quality, and animal abundance and distribution from sensory disturbance within the predicted zone of influence); and• direct mine-related mortality (i.e., number of interactions, injuries, mortality) linked to Project infrastructure and activities. <p>Specific objectives of the WEMP would be:</p> <ul style="list-style-type: none">• to verify the accuracy of impact predictions made in the EIS, and identify unanticipated effects;• to implement a wildlife effects mitigation and management plan designed to reduce the risks and disturbance to wildlife and wildlife habitats;• to determine the effectiveness of the wildlife effects mitigation and management plan;• to consider and incorporate, where possible, traditional knowledge (TK) into the WEMP;• to design studies and data collection protocols that are consistent with other monitoring programs in the Arctic (e.g., Snap Lake, Diavik Mine, and Ekati diamond mines), and can be used to understand and manage cumulative effects, and participate in regional and/or collaborative programs;• to develop and review the WEMP in collaboration with the ENR, Canadian Wildlife Service (Environment Canada), and the communities; and• to provide an annual report that will satisfy the appropriate government agencies responsible for wildlife, and will provide the opportunity for feedback from communities, governments, and the public.	Monitoring	Construction Operation Closure
	Species selected for effects monitoring would be based on recent and current environmental assessments and monitoring programs in the NWT and Nunavut, and may include muskoxen and moose. Following the principles of adaptive management, species selected for monitoring may be periodically reviewed by government, community, and regulatory agencies, and changed as necessary.	Monitoring	Construction Operation Closure
	De Beers is committed to considering and incorporating TK into the WEMP. The incorporation of TK would occur throughout all stages of the WEMP, including identification of mitigation practices and policies, data collection, and follow-up programs to obtain feedback Results of any relevant community-based monitoring studies would be incorporated into the annual WEMP report (with permission from the communities). As with all aspects of the WEMP, the incorporation of TK would be a continuously evolving process.	Monitoring	Construction Operation Closure
	Community members will be invited to participate in data collection programs. This includes specific species monitoring programs (e.g., surveys for caribou, grizzly bears, and wolverine). The involvement of community members in field data collection is expected to contribute to overall efficiency as well as provide feedback and ideas.	Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
Section 11.12 – SON: Species at Risk and Birds			
11.12.3 – Pathway Analysis 11.12.3.2 – Results Table 11.12-5	<p>The direct loss and fragmentation of wildlife habitat from the physical footprint of the Project may alter carnivore movement and behaviour:</p> <ul style="list-style-type: none">• backfilling the mined-out pits with PK and mine rock will decrease the on-land Project footprint• compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiency• mine rock will be used as the source of aggregate production, thereby , reducing the need for separate quarries• blasting in pits will be carefully planned and controlled to maintain a safe workplace and reduce the throw of ore bearing materials• where practical, natural drainage patterns will be used to reduce the use of ditches or diversion berms• to the extent practical, the total amount of area disturbed by Project activities at any one time will be reduced through the use of progressive reclamation• ramps to facilitate the access and egress of moose and muskoxen from the mine rock pile will be constructed during closure• culverts or stream-crossing structures will be removed and natural drainage re-established• at closure, transportation corridors the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where required• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape• conditions will be monitored over time to evaluate the success of the Closure and Reclamation Plan and, using adaptive management and newer proven methods as available, adjust the Plan, if necessary• De Beers will actively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation	Management Environmental Design Feature Monitoring	Construction Operation Closure
	<p>Physical hazards from the Project may increase the risk of injury/mortality to individual animals, which can affect wildlife population sizes:</p> <ul style="list-style-type: none">• backfilling the mined-out pits with PK and mine rock will decrease the on-land Project footprint• compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiency• mine rock will be used as the source of aggregate production, thereby , reducing the need for separate quarries• blasting in pits will be carefully planned and controlled to maintain a safe workplace and reduce the throw of ore bearing materials• where practical, natural drainage patterns will be used to reduce the use of ditches or diversion berms• to the extent practical, the total amount of area disturbed by Project activities at any one time will be reduced through the use of progressive reclamation• ramps to facilitate the access and egress of moose and muskoxen from the mine rock pile will be constructed during closure• culverts or stream-crossing structures will be removed and natural drainage re-established• at closure, transportation corridors the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where required• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape• conditions will be monitored over time to evaluate the success of the Closure and Reclamation Plan and, using adaptive management and newer proven methods as available, adjust the Plan, if necessary• De Beers will actively liaise with other mine operators in the Canadian Arctic to understand the challenges and successes they have encountered with respect to reclamation	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.12.3 – Pathway Analysis 11.12.3.2 – Results Table 11.12-5 (continued)	Dust deposition may cover vegetation and decrease abundance of forage for wildlife (i.e., habitat quantity): <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• power and heat use to reduce energy use, and therefore air emissions, will be reviewed on a regular basis• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
	Dust deposition may cover vegetation and change the amount of different quality habitats for prey species, and alter carnivore movement and behaviour: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• programs will be instituted to review power and heat use to reduce energy use and, therefore air emissions• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
	Dust deposition and air emissions may change the amount of different quality habitats, and alter carnivore movement and behaviour through changes in the chemical content of soil, vegetation, water, and air: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• programs will be instituted to review power and heat use to reduce energy use and, therefore air emissions• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.12.3 – Pathway Analysis 11.12.3.2 – Results Table 11.12-5 (continued)	Ingestion of soil, vegetation, and water, or inhalation of air that has been chemically altered by air emissions (including NOx and PAH deposition) or dust deposition, may affect carnivore survival and reproduction: <ul style="list-style-type: none">• a program of carbon and energy management will be implemented once the generators are commissioned• generator efficiencies will be constantly monitored and equipment will be tuned for optimum fuel-energy efficiency• load management will allow for the optimization of the load factors on the generators• pumping circuits will be monitored and efficiencies will be optimized to minimize noise disturbances• programs will be instituted to review power and heat use to reduce energy use and, therefore air emissions• piping will be insulated for heat conservation• personnel arriving at or leaving the site will be transported by bus, therefore, reducing the amount of traffic between the airstrip and the accommodation complex• compact layout of the surface facilities will reduce traffic, and therefore dust and air emissions, around the site• watering of roads, airstrip, and laydown areas will facilitate dust suppression• enforcing speed limits will assist in reducing production of dust	Management Environmental Design Feature	Construction Operation
	Sensory disturbance (e.g., presence of buildings, people, lights, smells, aircraft, and on-site vehicles) changes the amount of different quality habitats, and alters carnivore movement and behaviour, which can influence survival and reproduction: <ul style="list-style-type: none">• compact layout of the surface facilities will limit the area disturbed at construction and reduce traffic around the site• a minimum flying altitude of 300 m above ground level (except during takeoff and landing) will be maintained for cargo, passenger aircraft, and helicopter outside of the Project site• limit the amount of noise from the Project site to the extent practical• equipment noise sources will be limited by locating them inside buildings, to the extent possible• downward directional and low impact lighting will be used to reduce light pollution• a minimum 200-m distance from wildlife will be maintained, when possible• environmental sensitivity training for personnel• at closure, the entire site area will be stabilized and contoured to blend with the surrounding landscape• during closure, lighting, navigation equipment, and culverts will be removed, and contouring will be done to blend the site with the surrounding landscape	Environmental Design Feature	Construction Operation Closure
	Aircraft/vehicle collisions may cause injury/mortality to individual animals: <ul style="list-style-type: none">• personnel arriving at or leaving the site will be transported by bus, which will decrease the amount of traffic between the airstrip and the accommodations complex• speed limits will be established and enforced• wildlife will be provided with the “right of way”• levels of private traffic using the Project Winter Access Road will be monitored• the site will be designed to limit blind spots, where possible, to reduce the risk of accidental wildlife-human encounters• drivers will be warned when wildlife are moving through an area using signage and radio	Management Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.12.3 – Pathway Analysis 11.12.3.2 – Results Table 11.12-5 (continued)	<p>Chemical spills (including de-icing fluid run off) may cause negative changes to health or mortality of individual animals:</p> <ul style="list-style-type: none">• processing of the kimberlite ore will be mechanical, with limited use of chemicals• hazardous, non-combustible waste and contaminated materials will be temporarily stored in the waste storage transfer area in sealed steel or plastic, wildlife-resistant drums, and shipped off-site for disposal or recycling• chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums, and stored in suitable sealed containers in the waste transfer area• the waste transfer storage area will include a lined and enclosed pad for the collection and subsequent return of hazardous waste to suppliers or to a hazardous waste disposal facility• emulsion materials will be stored at the emulsion plant where spills would be 100% contained within the building• all fuel storage tanks will be designed and constructed according to the American Petroleum Institute 650 standard and placed in a lined and dyked containment area to contain any potential fuel spills• aviation fuel will be stored in self-contained, Underwriters Laboratories Canada-rated envirotanks mounted on an elevated pad at the air terminal shelter• aviation fuel for helicopters will be stored in sealed drums inside a lined berm area near the airstrip• to prevent accumulation and/or runoff of de-icing fluids at the airstrip from aircraft de-icing operations, aircraft will be sprayed in a specific area that will be equipped with swales to collect excess fluids if necessary• puddles of de-icing fluids in the swales will be removed by vacuum truck and deposited into waste de-icing fluid drums for shipment to recycling facilities if necessary• hazardous materials will be stored in sealed containers and drums in a lined transfer area until they are retrieved directly by licensed companies specializing in the handling of these materials• an Emergency Response and Contingency Plan has been developed• spill containment supplies will be in designated areas• any spills will be isolated and immediately cleaned up by a trained spill response team consisting of on-site personnel who will be available at all times	Management Environmental Design Feature	Construction Operation Closure
	<p>Attractants to site (e.g., food waste, oil products) may increase the risk of mortality to individual animals and affect carnivore population sizes:</p> <ul style="list-style-type: none">• separate bins will be located throughout the accommodations complex, processing plant, shops, and other facilities on-site for immediate sorting of domestic wastes• food wastes will be collected from the food waste bins in the accommodations complex, service complex, and other facilities and immediately placed and sealed in plastic bags; the plastic bags will be stored in sealed containers at each facility before transport directly to the incinerator storage area for incineration• chemicals such as de-icing fluid, acids, solvents, battery acids, and laboratory agents will be collected in lined trays and drums and stored in suitable sealed containers in the waste transfer area; chemicals that cannot be incinerated will be shipped off-site for disposal or recycling• incinerator ash from combustion of kitchen and office waste will go to the landfill• inert solid waste will be deposited into a small area of the mine rock piles or Fine PKC Facility• care will be taken to prevent the inclusion of wastes that could attract wildlife• two dual-chambered, diesel-fired incinerators will be provided for the incineration of combustible waste, including kitchen waste; the incinerators will also be used to burn waste oil; Incinerator ash will be collected in sealed, wildlife-resistant containers and transported to the landfill• a fenced area will be established for the handling and temporary storage of wastes; fencing will be 2 m high, slatted-type, and partially buried to prevent animals from burrowing underneath• education and reinforcement of proper waste management practices will be required for all workers and visitors to the site• the efficiency of the waste management program and improvement through adaptive management will be reviewed as needed	Management Environmental Design Feature	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.12.3 – Pathway Analysis 11.12.3.2 – Results Table 11.12-5 (continued)	Leaching of PAG mine rock may change the amount of different quality habitats, and alter carnivore movement and behaviour: <ul style="list-style-type: none">mine rock used to construct the dykes will be non-acid generating (NAG)any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pHany PAG mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be underwater when Kennady Lake is refilledtill from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into the portion of the repositorythe PAG rock will be enclosed within enough NAG rock that the active frost zone (typically two metres) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areasto confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructedminimal water is expected to penetrate to the PAG rock areasonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rockthermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are prediction to remain permanently frozenmine rock piles will not be covered or vegetated to limit attraction of wildlife to them after Project closure	Environmental Design Feature Monitoring	Construction Operation Closure
	Ingestion of soil, vegetation, or water that has been chemically altered by leaching of PAG mine rock may affect carnivore survival and reproduction: <ul style="list-style-type: none">mine rock used to construct the dykes will be non-acid generating (NAG)any mine rock containing kimberlite will be separated from the tundra by at least 2 m of inert and kimberlite-free rock to prevent drainage with low pHany PAG mine rock, as well as any barren kimberlite, will be sequestered within the interior of the mine rock piles in areas that will allow permafrost to develop or will be underwater when Kennady Lake is refilledtill from ongoing pit stripping will be used to cover PAG rock placed within the interior of the structure to keep water from penetrating into the portion of the repositorythe PAG rock will be enclosed within enough NAG rock that the active frost zone (typically two metres) will not extend into the enclosed material and water runoff will occur on the NAG rock cover areasto confirm the lower levels remain frozen, temperature monitoring systems will be placed in the mine rock piles as they are being constructedminimal water is expected to penetrate to the PAG rock areasonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rockthermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are prediction to remain permanently frozenmine rock piles will not be covered or vegetated to limit attraction of wildlife to them after Project closure	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.12.3 – Pathway Analysis 11.12.3.2 – Results Table 11.12-5 (continued)	<p>Release of seepage and surface water runoff (including erosion) from the Fine PKC Facility, Coarse PK and mine rock piles may change the amount of different quality habitats, and alter carnivore movement and behaviour:</p> <ul style="list-style-type: none">the performance of the dykes will be monitored throughout their construction and operating life; instrumentation monitoring together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidentsa system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pitssite runoff will flow naturally to the dewatered areas of Kennady Lake that will act as a control basin for storage of water; within this basin, water flows can be managed where practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsno substantial runoff and seepage from the mine rock piles is expected.a soil-bentonite slurry cutoff wall through a till fill zone placed over the overburden and the overburden to the bedrock surface has been adopted as the main seepage control for the diversion dyke separating Areas 7 and 8the cut-off wall for the dyke separating Areas 7 and 8 will be protected by a downstream filter zone and mine rock shell zonefor the retention dyke that separates Areas 3 and 4, Areas 5 and 6, and Areas 4 and 6, a wide till core has been selected as the main seepage controlthe water retention dyke separating Area 2 and Lake N7, as well as diversion dykes dealing with Lakes A3, A4, B1, N13, D2, E1, and E3 will have a liner keyed into the competent frozen ground or bedrock to control seepagethe curved filter dyke to retain the particles in the fine PK placed in Areas 1 and 2 will be construction material and will be free of roots, organics, and materials not suitable for constructionthe PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.thermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are prediction to remain permanently frozenthe Coarse PK Pile will be shaped and covered with a layer of mine rock of a minimum 1 m to limit surface erosion; the coarse PK is a sandy-gravelly material that is coarse enough not to be susceptible to wind movementonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock pile; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.12.3 – Pathway Analysis 11.12.3.2 – Results Table 11.12-5 (continued)	Ingestion of seepage and surface water runoff from the Coarse PK and mine rock piles, or ingestion of soil, vegetation, or water that has been chemically altered by seepage and runoff, may affect carnivore survival and reproduction: <ul style="list-style-type: none">the performance of the dykes will be monitored throughout their construction and operating life; instrumentation monitoring together with systematic visual inspection will provide early warning of many conditions that can contribute to dyke failures and incidentsa system of ditches and sumps will be constructed, maintained, and upgraded throughout the operation phase of the Project to manage groundwater from the open pitssite runoff will flow naturally to the dewatered areas of Kennady Lake that will act as a control basin for storage of water; within this basin, water flows can be managed where practical, natural drainage patterns will be used to reduce the use of ditches or diversion bermsno substantial runoff and seepage from the mine rock piles is expected.a soil-bentonite slurry cutoff wall through a till fill zone placed over the overburden and the overburden to the bedrock surface has been adopted as the main seepage control for the diversion dyke separating Areas 7 and 8the cut-off wall for the dyke separating Areas 7 and 8 will be protected by a downstream filter zone and mine rock shell zonefor the retention dyke that separates Areas 3 and 4, Areas 5 and 6, and Areas 4 and 6, a wide till core has been selected as the main seepage controlthe water retention dyke separating Area 2 and Lake N7, as well as diversion dykes dealing with Lakes A3, A4, B1, N13, D2, E1, and E3 will have a liner keyed into the competent frozen ground or bedrock to control seepagethe curved filter dyke to retain the particles in the fine PK placed in Areas 1 and 2 will be construction material and will be free of roots, organics, and materials not suitable for constructionthe PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.thermistors will be installed within the mine rock piles to monitor the progression of permafrost development; the upper portion of the thick cover of clean mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are prediction to remain permanently frozenonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock pile. The thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock	Environmental Design Feature Monitoring	Construction Operation Closure
	Road footprint decreases habitat quantity and may cause fragmentation, which can alter carnivore movement and behaviour: <ul style="list-style-type: none">low profile roads will be used so that they do not act as a barrier to movement for wildlifewinter road snow berms will be removed so that they do not act as a barrier to movement for wildlife	Environmental Design Feature	Construction Operation Closure
	Road footprint may cause changes to the amount of different quality habitats (e.g., degradation to vegetation), and alter carnivore movement and behaviour: <ul style="list-style-type: none">use of proven best practices for winter road construction	Management Environmental Design Feature	Construction Operation Closure
	Increased access for traditional and non-traditional harvesting may alter carnivore movement and behaviour, which can affect survival and reproduction: <ul style="list-style-type: none">seasonal use of Winter Access Roadprohibit firearms of any type, bows, and crossbows at the Projectprohibit hunting, trapping, harvesting, and fishing by employees and contractors and enforce this prohibition	Management Environmental Design Feature	Construction Operation Closure
	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from dewatering of Kennady Lake may affect the quantity of riparian habitat, which could alter carnivore movement and behaviour: <ul style="list-style-type: none">Lake N11 is capable of accepting water at the proposed discharge rate without erosion damage to downstream watercourses	Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.12.3 – Pathway Analysis 11.12.3.2 – Results Table 11.12-5 (continued)	Dewatering may result in newly established vegetation on the exposed lakebed sediments and increase habitat quantity, which may alter carnivore movement and behaviour: <ul style="list-style-type: none">dykes will be constructed to divert fresh water from entering areas of Kennady Lakethe height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watersheddewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation
	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from dewatering Kennady Lake may cause injury/mortality to individual animals: <ul style="list-style-type: none">dykes will be constructed to divert fresh water from entering areas of Kennady Lakethe height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watersheddewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation
	Changes in the timing of freeze and break-up downstream may alter carnivore movement and behaviour, and could cause injury/mortality to individual animals: <ul style="list-style-type: none">dykes will be constructed to divert fresh water from entering areas of Kennady Lakethe height of the diversion structures will be designed such that the excess water from the surrounding sub-watershed will remain in the original N watersheddewatering and operation discharges will be limited so that pumping will not increase discharges above the baseline two-year flood levels in downstream lakes and channels	Environmental Design Feature	Construction Operation
	Changes in downstream flows (e.g., isolation and diversion, altered drainage patterns) and water levels from the refilling of Kennady Lake may affect the quantity of riparian habitat, which could alter carnivore movement and behaviour: <ul style="list-style-type: none">mined-out pits will be backfilled with PK and mine rock to reduce the time required for filling these portions of Kennady Lake because less water is required to refill the partially backfilled pitsKennady Lake will be refilled using natural runoff and supplemental water drawn from Lake N11while fine PK is being discharged in the mined-out pits (primarily Hearne, but potentially 5034), process water will not be reclaimed from the pits. Instead the slurry discharge water will be used to accelerate the infill of the mined-out pits. The process will facilitate a more rapid re-filling and progressive reclamation of Area 6 within Kennady Lakethe 5034 pit will be backfilled to the extent possible with mine rock and the remaining space will be eventually filled with water once mining in the Tuzo Pit is completethe Tuzo Pit will be allowed to flood following the completion of the operations phase; natural watershed inflows will be supplemented by pumping water from Lake N11the pumping rates are anticipated to be managed such that the total outflow from Lake N11 does not drop below the 1 in 5-year dry conditions	Environmental Design Feature	Construction Operation Closure
	Long-term seepage from the PK and mine rock piles may cause local changes to habitat quality, and alter carnivore movement and behaviour: <ul style="list-style-type: none">the PAG rock will be enclosed within enough NAG rock to prevent the active zone (typically 2 m) from extending into the enclosed material and water runoff will occur on the NAG rock cover areas.thermistors will be installed within the mine rock piles to monitor the progression of permafrost development. The upper portion of the thick cover of mine rock over the waste repository will be subject to annual freeze and thaw cycles, but the PK and PAG rock sequestered below are predicted to remain permanently frozenthe Coarse PK Pile will be shaped and covered with a layer of mine rock of a minimum 1 m to limit surface erosion; the coarse PK is a sandy-gravelly material that is coarse enough not to be susceptible to wind movementonly non-reactive mine rock will be placed on the upper and outer surfaces of the mine rock piles; the thickness of the cover layer is predicted to be sufficient so that the active freeze-thaw layer remains within the non-reactive mine rock.	Environmental Design Feature Monitoring	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.12.10 – Monitoring and Follow-up	<p>A wildlife effects monitoring program (WEMP) will be implemented to test impact predictions and reduce the level of uncertainty related to each prediction. The principal goal of the WEMP is to provide information required for the Project's Environmental Management System to adaptively manage the Project to protect wildlife and wildlife habitat. Based on the definitions of monitoring in the Terms of Reference (Section 3.2.7, Gahcho Kué Panel 2007), the WEMP would consist of environmental monitoring and follow-up programs. Measurement endpoints for testing impact predictions (i.e., monitoring effects) from the Project will likely include:</p> <ul style="list-style-type: none">• direct habitat effects (changes in habitat quantity from the Project footprint);• indirect habitat effects (changes in habitat quality, and animal abundance and distribution from sensory disturbance within the predicted zone of influence); and• direct mine-related mortality (i.e., number of interactions, injuries, mortality) linked to Project infrastructure and activities. <p>Specific objectives of the WEMP would be:</p> <ul style="list-style-type: none">• to verify the accuracy of impact predictions made in the EIS, and identify unanticipated effects;• to implement a wildlife effects mitigation and management plan designed to reduce the risks and disturbance to wildlife and wildlife habitats;• to determine the effectiveness of the wildlife effects mitigation and management plan;• to consider and incorporate, where possible, traditional knowledge into the WEMP;• to design studies and data collection protocols that are consistent with other monitoring programs in the Arctic (e.g., Snap Lake Mine, Diavik Diamond Mine, and Ekati Diamond Mine), and can be used to understand and manage cumulative effects, and participate in regional and/or collaborative programs;• to develop and review the WEMP in collaboration with the Department of the Environment and Natural Resources, Canadian Wildlife Service (Environment Canada), and the communities; and• to provide an annual report that will satisfy the appropriate government agencies responsible for wildlife and will provide the opportunity for feedback from communities, governments, and the public.	Monitoring	Construction Operation Closure
	Species selected for effects monitoring would be based on recent and current environmental assessments and monitoring programs in the NWT and Nunavut, and will likely include species at risk. Following the principles of adaptive management, species selected for monitoring may be periodically reviewed by government, community, and regulatory agencies, and changed as necessary.	Monitoring	Construction Operation Closure
	De Beers is committed to considering and incorporating TK into the WEMP. The incorporation of TK would occur throughout all stages of the WEMP, including identification of mitigation practices and policies, data collection, and follow-up programs to obtain feedback Results of any relevant community-based monitoring studies would be incorporated into the annual WEMP report (with permission from the communities). As with all aspects of the WEMP, the incorporation of TK would be a continuously evolving process.	Monitoring	Construction Operation Closure
	Community members will be invited to participate in data collection programs. This includes specific species monitoring programs (e.g., caribou aerial surveys, habitat use by grizzly bears, and wolverine snow track surveys). The involvement of community members in field data collection is expected to contribute to overall efficiency as well as provide feedback and ideas.	Monitoring	Construction Operation Closure
Section 11.13 – SON: Climate Change			
11.13.4 – Climate Change Assessment AND Table 11.13-8	<p>Climate change and the resulting increase in air temperature could result in an increase in the size of the active frost layer in areas around the air strip, winter access roads and site roads, which could lead to greater amount of thaw settlement</p> <ul style="list-style-type: none">• exploration of alternative energy sources• use of high efficiency equipment	Environmental Design Feature	Construction Operation
	<p>Climate change could affect the stability of structures developed as part of the Project, which could lead to effects on aquatic and terrestrial systems if it results in a loss of containment</p> <ul style="list-style-type: none">• designed to include safety factors appropriate for both frozen and thawed conditions	Environmental Design Feature	Construction Operation
	<p>Climate change and the resulting increase in winter air temperatures could result in a shorter operating season for the Winter Access Road and Tibbitt-to-Contwoyto Winter Road, which could lead to increased traffic on the road when it is open and a subsequent increase in vehicular collisions with wildlife and altered wildlife movements and behaviour</p> <ul style="list-style-type: none">• routine monitoring of winter road conditions• development of contingency plans	Environmental Design Feature	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
11.13.4 – Climate Change Assessment AND Table 11.13-8 (continued)	The Project could potentially create a local change in climate at the mine site, which could result in altered effects to vegetation and wildlife habitat <ul style="list-style-type: none">compact development footprint located in an area with a number of other waterbodies	Environmental Design Feature	Construction Operation
11.13.6 – Uncertainty, Monitoring, and Follow-up	De Beers will monitor for the effects of climate change on the Project. Thermistors will be installed to monitor temperatures within the Mine Rock Piles, the Coarse PK Pile and the Fine PKC Facility. The resulting information will be used to track the development and possible regression of permafrost within these structures. De Beers will also monitor the quality and quantity of the water passing through the operational water management system to verify the conclusions of the analysis outlined herein. Finally, De Beers will periodically review its operating procedures during the life of the Project, and adjust them, if and as required, to account for the influence of climate change.	Management Monitoring	Construction Operation
	The following aspects of the Project potentially affected by climate change or related to GHG emission will be adaptively managed. <ul style="list-style-type: none">Winter roads — If the hauling season is shortened, then De Beers will develop options for logistical planning (larger storage for fuel and increased trucking over a shorter period). Adaptations for any decrease in the length of the winter road season resulting from climate change would be the same as the adaptations for current year-to-year variability in the length of the winter road season.Protection of permafrost — All activities that affect permafrost around the site will be closely planned so that areas not directly affected by the mine and plant site will be preserved.Equipment efficiency — During normal regular maintenance refits De Beers will use the most up-to-date, cost effective, and efficient replacement equipment.Mine and plant operations — Mining and processing operations will be periodically reviewed with the objective of identifying opportunities for increasing efficiency and acting upon them as appropriate.	Management Environmental Design Features Monitoring	Construction Operation
Section 12 – Socio-economic Impact Assessment			
12.4 – Project Description 12.4.5 – Salaries, Benefits and Performance	A salary and benefits survey will be conducted regularly so that the Project is competitively positioned in the NWT and Canadian marketplace to recruit and retain a skilled labour force. De Beers will work with its long-term contractors so that salary and benefits for contract employees on-site are also positioned competitively. Employees of the Project will be offered the same comprehensive and competitive benefits package that all De Beers employees receive.	Management	Construction Operation
12.4 – Project Description 12.4.7 – Supervisor and Mentor Training	A Supervisory Training Program has been developed for supervisory and management staff, which will be mandatory. The program establishes the roles and responsibilities of foremen and supervisors, including coaching and supporting the training and development of their employees.	Management	Construction Operation
12.4 – Project Description 12.4.7 – Supervisor and Mentor Training	A mentoring program will be developed by matching Aboriginal workers with those who have the desire and skill to supervise and mentor junior workers. The aim is to encourage career development and advancement for young Aboriginal employees.	Management	Construction Operation
12.4 – Project Description 12.4.8 – On-the-Job Training and Advancement of Entry-Level Employees	De Beers is committed to promoting from within the company. The aim is to fill as many of the skilled positions and as many of the semi-skilled positions as possible with northern Aboriginal workers over the life of the Project. Unskilled workers will receive on-the-job training. As vacancies in skilled and semi-skilled positions occur, concerted efforts will be made to fill these positions with northern Aboriginal workers.	Management	Construction Operation
12.4 – Project Description 12.4.9 – Apprentice Training	Apprentice positions will be developed in accord with the operational requirements of the business and in accord with the requirements of the NWT <i>Apprenticeship, Trade and Occupations Certification Act</i> and those positions filled in accordance with the hiring preferences outlined in the EIS.	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.4 – Project Description 12.4.10 – Aboriginal Language and Cultural Support	Retaining and supporting northern Aboriginals is important to De Beers. As such the company strives for a culturally supportive work place. Among the actions that are already supported and plan to continue are: <ul style="list-style-type: none">• providing printed core policies in English, French, Chipewyan, and Tłı̨ch̓ô;• incorporating Dene culture and traditions into key site celebration activities;• encouraging the practice of Aboriginal languages at the worksite when it does not compromise health and safety. English will be the general working language for conveying instructions related to operations;• to the extent operationally possible, assign entry-level Aboriginal workers to a supervisor who will provide a mentoring role;• collaborating with Aboriginal communities on the development and delivery of training programs based on cultural value systems;• arranging cultural activities as part of the ongoing recreation activities planned at the site; and• providing and maintaining space at the mine site for spiritual and cultural pursuits.	Management	Construction Operation
12.4 – Project Description 12.4.11 – Alcohol, Drugs and Harassment	A key aim of the Project is to protect the safety of its workers and employees, as well as to protect De Beers’ investment. Among the focal points is the Dry Site Policy, which establishes that all workplaces will be drug- and alcohol-free. This includes workers in transit who will be required to remain sober and drug-free during their entire transit to and from the mine site. De Beers practices a zero tolerance towards harassment, fighting, or bullying on-site.	Management	Construction Operation
12.4 – Project Description 12.4.12 – Firearms, Hunting and Fishing	Workers will not be allowed to hunt or fish while at the site at any time during the life of the Project. No personal firearms will be allowed on-site at any time during the life of the Project.	Management	Construction Operation
12.4 – Project Description 12.4.13 – Smoking	A smoke-free work and living place will be provided at the Project site. Suitable areas for those who do smoke will be designated at the Project site.	Management	Construction Operation
12.4 – Project Description 12.4.14 – Workplace and Community Literacy Programs	A learning centre will be located on-site with equipment and resources, which will include computers and a learning centre resource library. On-site literacy programs will be linked to recruitment and employment strategies that permit employees to take advantage of career advancement opportunities. Literacy programs will be provided for employees and will continue in selected communities. De Beers will work with community agencies so that literacy programs will be directly linked to other kinds of upgrading, such as education and training programs that enable participants to further improve their qualifications towards employment.	Management	Construction Operation
12.4 – Project Description 12.4.16 – Access to Project Facilities	In keeping with De Beers’ goals to be a good neighbour to communities in close proximity, community liaison coordinators will coordinate and welcome special visits to the Project facilities with Aboriginal leaders.	Management	Construction Operation
12.4 – Project Description 12.4.17 – Contracting and Procurement	Procurement needs will be sourced from NWT businesses as much as practical during construction, operations, and closure. Special emphasis and priority will be placed on developing business in the selected communities. De Beers will provide support to northern businesses to help them prepare to bid on contracts and to maximize northern Aboriginal content. Opportunities will be provided for sourcing procurements in the following order of priority: <ul style="list-style-type: none">• N'Dilo, Detah, Yellowknife, Łutselk'e;• Tłı̨ch̓ô Communities;• NWT businesses, industry and business associations; and• other Canadian businesses.	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.4 – Project Description 12.4.18 – Business Opportunity Initiatives	<p>De Beers has already undertaken the following initiatives to maximize Project-related business opportunities for Aboriginal and NWT businesses. These will continue for the Project.</p> <ul style="list-style-type: none">• Continue to staff a position with the responsibility to act as a liaison between De Beers, GNWT, Aboriginal groups, and NWT businesses.• Provide a business development strategy for Aboriginal groups, and communicate the scope and scale of business opportunities and Project requirements in a timely and effective manner.• Identify the Project components during construction, operations, and closure that should be targets for a business development strategy.• Identify possible opportunities for joint ventures with Aboriginal businesses.• Maintain a NWT business policy that supports the objectives and commitments by De Beers.• Share business-related expertise with NWT mine-related business initiatives.• Develop a flexible contracting approach by size and scope to match the capacity of Aboriginal businesses and NWT businesses, where feasible.• Prepare a business opportunities’ forecast to identify foreseeable procurement requirements of the Project, and provide it to Aboriginal businesses and NWT businesses in accordance with the purchasing priorities set out above.	Management	Construction Operation
12.5 – Assessment Approach and Methods 12.5.4 – Pathway Analysis	<p>While engagement has already been initiated by De Beers prior to and during the EIS scoping sessions as well as other Project consultations since then, formal and continued engagement activities will begin upon approval of the EIS.</p>	Management	Construction Operation
12.5 – Assessment Approach and Methods 12.5.6 - Mitigation	<p>Environmental design features that De Beers will implement include the following:</p> <ul style="list-style-type: none">• pay royalties and taxes;• offer employment for those with grade 10 or equivalent skills (i.e., equivalency criteria for employees who do not meet the minimum education levels);• provide apprentice and trade positions, including necessary training hours for workers to achieve their trade’s certificates on-site (heavy equipment operator, electrician, and mechanic and mill operators);• during operations, most of the workforce will work 12-hour shifts in a two-weeks-on and two-weeks-off rotation. Other variations on rotation schedules have been considered for the management and professional positions required for the operations phase; subject to operational requirements, provide direct return air transportation to employees travelling from NWT communities and the Project, which will maximize time in the community;• offer drug and alcohol programming and other counselling;• allow and encourage Aboriginal languages to be spoken on site when it does not compromise health and safety. English will be the general working language for conveying instructions related to operations;• traditional pursuits of Aboriginal employees accommodated within work schedules in balance with the operational requirements of the Project, where practicable and with appropriate notice; and• avoidance of archaeological sites to reduce likelihood of site damage or removal.	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.5 – Assessment Approach and Methods 12.5.6 - Mitigation	<p>Examples of other mitigations that De Beers will implement include the following:</p> <ul style="list-style-type: none">• supporting contractors in achieving the goal to train members of Aboriginal communities and NWT residents;• promoting and encouraging partnerships with NWT schools that enable students to understand career opportunities available as well as training and education required to pursue these opportunities;• promoting and encouraging partnerships with Aurora College and other Canadian post-secondary education institutions to establish work experience and job placement programs;• work through Skills Canada, the Native Women’s Association of the Northwest Territories, the Northwest Territories Status of Women Council, Aurora College, Aboriginal communities, and the Government of the Northwest Territories to promote women in trades and mining occupations;• offer scholarships to female NWT students who are attending college and university programs;• promote activities in the NWT that target young women for jobs at the Project;• make female role models available for school programs to promote women working at the Project;• support “women in trades” programs in partnership with educational institutions and women’s groups in selected communities;• offer scholarships and awards for women who are in an apprenticeship program with the Project;• offer coaching regarding personal development strategies to women who may not possess all of the requisite skills and knowledge for particular positions;• encourage contractors to participate and support De Beer’s commitments related to promoting the participation of women in the workforce;• bring money management course to communities through banking establishment;• provide volunteer incentives to those employees interested in volunteering their time for social or cultural programs or activities in their home communities;• conduct ongoing communications and engagement activities with community residents and leaders, prospective workers, Aboriginal organizations, and the Federal and Territorial governments;• participate in the Government of the Northwest Territories (GNWT) Labour Force Strategy to find strategies to increase chance of employment in the NWT;• promoting and encouraging partnerships with NWT schools that enable students to understand career opportunities available as well as training and education required to pursue these opportunities; and• collaborating with Aboriginal communities on the development and delivery of training programs based on cultural value systems.	Management	Construction Operation
12.6 – Key Lines of Inquiry 12.6.1 – Key Line of Inquiry: Long-term Social, Cultural, and Economic Effects 12.6.1.7 – Mitigation Table 12.6-21	<p>The Project will provide jobs and income for individuals and contractors:</p> <ul style="list-style-type: none">• 690FTEs during construction Year 1, 372 FTEs during operations, fewer than 100 FTEs during interim closure and reclamation phase, and fewer than 2 FTEs closure• identifying opportunities for gathering information and addressing barriers to successful employment• offer employment for those with high school graduation or General Equivalency Diploma (,De Beers does consider the experiences of individuals not meeting minimum education requirements for entry level positions on a case-by-case basis)• procurement needs will be sourced from NWT businesses as much as practical during construction, operations, and closure.• financial or in-kind support for the MTS• bring money management course to communities through banking establishment• participation in Labour Force Strategy along with the GNWT and other mining operations• a position will continue to be staffed with the responsibility to act as a liaison between De Beers, and the GNWT, Aboriginal groups, and NWT businesses• working with local employment officers, and advertise in northern newspapers and the company website positions available at the Project. the company already maintains a 1-800 number in the NWT for employment information and job opportunities• work with and encourage contractors to participate and support De Beers’ commitments related to general hiring commitments as well as promoting the participation of women in the workforce and provide employment incentives to encourage relocation to the NWT	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.6 – Key Lines of Inquiry 12.6.1 – Key Line of Inquiry: Long-term Social, Cultural, and Economic Effects 12.6.1.7 – Mitigation Table 12.6-21	<p>The Project will provide opportunities for education and skills training and up-grading:</p> <ul style="list-style-type: none">• provide supervisor and mentor training• provide apprenticeship positions for NWT Aboriginal residents and other NWT residents who successfully meet trades entrance requirements• work with community agencies to ensure that literacy programs will be directly linked to other kinds of upgrading, education, and training programs, so that participants may further improve their qualifications towards employment• make best efforts to schedule training so that potential employees who have completed the training will be able to take immediate advantage of employment opportunities with the Project, and encourage contractors to do the same• establishing a mine orientation program for all new employees• provide money management training• provide First Aid/CPR, SHE and WHMIS training• use 2:2 rotation to maximize time in the community• provide return air transportation to employees travelling from designated pick-up points in NWT communities and the Project• conduct a training needs assessment to identify existing educational and/or skill levels of Aboriginal community members and other NWT residents who apply for positions, so that work can be offered to new recruits and opportunities for advancement can be offered to existing employees• collaborate with Aboriginal communities on the development and delivery of training programs based on cultural value systems• promote and encourage partnerships with Aurora College and other Canadian post-secondary education institutions to establish work experience and job placement programs• setting aside with scholarship programs, scholarships for female NWT students who are attending college anda university• offer scholarships and awards for women who are in an apprenticeship program with the Project• make female models available for school programs to promote women working at the Project	Management	Construction Operation
12.6 – Key Lines of Inquiry 12.6.1 – Key Line of Inquiry: Long-term Social, Cultural, and Economic Effects 12.6.1.7 – Mitigation Table 12.6-21	<p>The Project may result in northern and Aboriginal procurement opportunities:</p> <ul style="list-style-type: none">• procurement needs will be sourced from NWT businesses as much as practical during construction, operations, and closure. make best efforts to schedule training so that potential employees who have completed the training will be able to take immediate advantage of employment opportunities with the Project, and encourage contractors to do the same• maintain an NWT business policy• sessions will be held in Yellowknife to provide summary information on contracting opportunities• identify possible opportunities for joint ventures with Aboriginal businesses• develop a flexible contracting approach by size and scope to match the capacity of Aboriginal businesses and NWT businesses where feasible• share business-related expertise with industry contacts to support NWT mine-related business initiatives	Management	Construction Operation
12.6 – Key Lines of Inquiry 12.6.2 – Key Line of Inquiry: Family and Community Cohesion 12.6.2.4 – Other Values: The Right Way to Live	<p>De Beers will also continue to support communities with their cultural programming.</p> <p>De Beers will, where operationally feasible, avoid flights through Yellowknife so as to minimize time away from family and communities.</p> <p>De Beers also provides incentives to its employees to volunteer in communities.</p>	Management	Construction Operation
12.6 – Key Lines of Inquiry 12.6.2 – Key Line of Inquiry: Family and Community Cohesion 12.6.2.5- Mitigation	<p>De Beers offers a comprehensive benefits plan to all its employees, as well as mandatory new employee training, which covers among other things, money management. These supports are aimed at assisting employees in making good lifestyle choices and remaining effective employees. De Beers offers an extensive benefits plan that covers services to assist with family issues, work performance, career development, and general health and wellness. It also arranges for family counseling services for mine employees and their families. Such services might include family and relationship counselling, stress management, anger management, support services for women and single mothers, child-care services, and parenting training.</p>	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.6 – Key Lines of Inquiry 12.6.2 – Key Line of Inquiry: Family and Community Cohesion 12.6.2.5- Mitigation Table 12.6-31	Rotation: Separation from family/community; Maintain language and cultural skills: <ul style="list-style-type: none">• encourage the practice of Aboriginal languages at the work site when it does not compromise health and safety• traditional pursuits of Aboriginal employees accommodated within work schedules where practicable and with appropriate notice, in balance with operational needs of the Projects• provide and maintain space at the mine site for spiritual and cultural pursuits• provide core policies in Chipewyan and Tłı̨ch̨, as well as English and French• use 2:2 rotation to maximize time in the community• provide direct return air transportation to employees travelling from designated pick-up points in NWT communities and the Project• provide incentives to those employees interested in volunteering their time for social or cultural programs or activities in their home communities• language program support assistance in communities• financial or in-kind support for local cultural programming• financial or in-kind support for language support programs in communities• financial or in-kind support for on-the-land programming• coordinate and welcome special site visits with Aboriginal leaders	Management	Construction Operation
12.6 – Key Lines of Inquiry 12.6.2 – Key Line of Inquiry: Family and Community Cohesion 12.6.2.5- Mitigation Table 12.6-31	Lifestyle: Loss of leaders and volunteers within communities; Drug and alcohol abuse: <ul style="list-style-type: none">• provide volunteer incentives to those employees interested in volunteering their time for social or cultural programs or activities in their home communities• offer drug and alcohol programming• employees and immediate family members may access counselling services through the company health care plan	Management	Construction Operation
12.6 – Key Lines of Inquiry 12.6.2 – Key Line of Inquiry: Family and Community Cohesion 12.6.2.5- Mitigation Table 12.6-31	In-migration: In-migration of workers: <ul style="list-style-type: none">• provide return air transportation to employees travelling from designated pick-up points in NWT communities and the Project• encourage the practice of Aboriginal languages at the worksite when it does not compromise health and safety• cultural awareness and cross-cultural training for northern Aboriginal and non-Aboriginal workers• offer northern relocation benefit	Management	Construction Operation
12.6 – Key Lines of Inquiry 12.6.3 – Key Line of Inquiry: Social Disparity within and between Communities 12.6.3.4 – Mitigation Table 12.6-41	Jobs and income for individuals and contractors: <ul style="list-style-type: none">• 690 FTEs during construction Year 1, 372 FTEs during operations, fewer than 100 FTEs during interim closure, and fewer than 2 FTEs during closure• Identifying opportunities for gathering gather information and addressing barriers to successful employment• offer employment for those with high school graduation or General Equivalency Diploma (De Beers does consider the experiences of individuals not meeting minimum education requirements for entry level positions on a case-by-case basis)• establish a recruitment and training strategy for school students that encourages and promotes the completion secondary school• identify possible opportunities for joint ventures• develop a flexible contracting approach by size and scope to match the capacity of Aboriginal businesses and NWT businesses where feasible• offer scholarships to female NWT students who are attending college and university programs• offer scholarships and awards for women who are in an apprenticeship program with the project	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.6 – Key Lines of Inquiry 12.6.3 – Key Line of Inquiry: Social Disparity within and between Communities 12.6.3.4 – Mitigation Table 12.6-14	Loss of skilled labour in the communities; Loss of volunteers: <ul style="list-style-type: none">• use 2:2 rotation to maximize time in the community• provide return air transportation to employees travelling from designated pick-up points in NWT communities and the Project• provide incentives to those employees interested in volunteering their time for social or cultural programs or activities in their home communities• provide apprenticeship positions for NWT Aboriginal residents and other NWT residents who successfully meet trades entrance requirements• work with community agencies to ensure that literacy programs will be directly linked to other kinds of upgrading, education, and training programs, so that participants may further improve their qualifications towards employment• provide First Aid/CPR, SHE and WHMIS training• traditional pursuits of Aboriginal employees accommodated within work schedules in balance with the operational requirements of the Project, where practicable and with appropriate notice• financial or in-kind support for local cultural programming• financial or in-kind support for language support programs in communities• financial or in-kind support for on-the-land programming	Management	Construction Operation
12.6 – Key Lines of Inquiry 12.6.3 – Key Line of Inquiry: Social Disparity within and between Communities 12.6.3.4 – Mitigation Table 12.6-14	Inflation; cost of living: <ul style="list-style-type: none">• provide money management training for employees• bring money management course to communities through banking establishment	Management	Construction Operation
12.7 – Subjects of Note 12.7.1 – Subject of Note: Employment, Training and Economic Development 12.7.1.1 - Introduction 12.7.1.1.3 – Project Features that Reduce Effects And	The Project will encourage opportunities for education and training on Project-related trades and careers: <ul style="list-style-type: none">• provide supervisor and mentor training• provide apprentice and trade positions• offer literacy programs for employees who do not meet the minimum requirement to allow for up-grading and possible advancement• make best efforts to schedule training so that potential employees who have completed the training will be able to take immediate advantage of employment opportunities with the Project, and encourage contractors to do the same	Management	Construction Operation
12.7.1.3 – Maximizing Skills Development for Employees 12.7.1.3.2 – Effects Analysis	The Project will provide training / skills up-grading to employees: <ul style="list-style-type: none">• provide apprentice and trade positions, including necessary training hours for workers to achieve their trade's certificates on-site (heavy equipment operator, electrician, and mechanic and mill operators)• provide training for new employees• provide money management training• provide on-site literacy programs• provide SHE and WHMIS training	Management	Construction Operation
	The Project may result in northern and Aboriginal procurement: <ul style="list-style-type: none">• verify that hiring commitments from contractors are met• make best efforts to schedule training so that potential employees who have completed the training will be able to take immediate advantage of employment opportunities with contractors	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.7 – Subjects of Note 12.7.1 – Subject of Note: Employment, Training and Economic Development 12.7.1.3 – Maximizing Skills Development for Employees 12.7.1.3.2 – Effects Analysis	De Beers is already involved with the following initiatives related to the employment and training of potential employees: <ul style="list-style-type: none">• offering a mine orientation program for all new employees;• making best efforts to schedule training so that potential employees who have completed the training will be able to take immediate advantage of employment;• encouraging contractors to support placement of trainees and apprentices;• conduct a training needs assessment to identify existing educational and/or skill levels of Aboriginal community members and other NWT residents who apply for positions, and using the results so that work can be offered to new recruits and opportunities for advancement can be offered to existing employees; and• training and offering advancement opportunities to existing employees in accordance with the hiring priorities; subject to each employee's performance, training, skills, interest, and career plan.	Management	Construction Operation
12.7 – Subjects of Note 12.7.1 – Subject of Note: Employment, Training and Economic Development 12.7.1.3 – Maximizing Skills Development for Employees 12.7.1.3.2 – Effects Analysis	To provide opportunities for career advancement, De Beers is already involved with the following initiatives related to worker advancement: <ul style="list-style-type: none">• promoting from within and facilitate advancement of entry-level Aboriginal workers;• locating a learning centre on-site with equipment and resources, which will include computers and a learning centre resource library. On-site literacy programs are linked to recruitment and employment strategies to permit employees to take advantage of career advancement opportunities;• offering apprenticeship positions in accordance with the requirements of the Northwest Territories <i>Apprenticeship, Trade and Occupations Certification Act</i>. Opportunities are provided for workers to obtain the necessary training hours to achieve their trades certificates on-site, including heavy equipment operator, electrician, and mechanic and mill operators;• link new Aboriginal employees with mentors that focus on encouraging career development and advancement; and• implementing a mandatory Supervisory Training Program for supervisory and management staff. The program establishes the roles and responsibilities of foremen and supervisors, including coaching and supporting the training and development of their employees.	Management	Construction Operation
12.7 – Subjects of Note 12.7.1 – Subject of Note: Employment, Training and Economic Development 12.7.1.3 – Maximizing Skills Development for Employees 12.7.1.3.2 – Effects Analysis	De Beers is involved with the following initiatives related to the employment and training of women: <ul style="list-style-type: none">• working through Skills Canada, the Native Women's Association of the NWT, the NWT Status of Women Council, Aurora College, Aboriginal communities, and the GNWT to promote women in trades and mining occupations;• setting aside within scholarship programs, scholarships to female NWT students who are attending college and university programs;• promoting and supporting activities in the NWT that target young women for jobs at the Project;• making female role models available for school and community partner programs to promote women working at the Project;• supporting "women in trades" programs in partnership with educational institutions and women's groups in selected communities;• offering scholarships and awards for women who are in an apprenticeship program with the Project; and• encouraging contractors to participate and support De Beers' commitments related to promoting the participation of women in the workforce.	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.7 – Subjects of Note 12.7.1 – Subject of Note: Employment, Training and Economic Development 12.7.1.5 – Mitigation Table 12.7-4	<p>The Project will provide jobs and income for individuals and contractors:</p> <ul style="list-style-type: none">• 372 unskilled, semi-skilled, skilled, professional and management positions during operations• identify opportunities to gather information and address barriers to successful employment• offer employment for those with high school graduation or General Equivalency Diploma (De Beers does consider the experiences of individuals not meeting minimum education requirements for entry level positions on a case-by-case basis)• maintain two Community Liaison Coordinator positions to work with communities throughout life of the Project.• contract positions related to procurement opportunities• promoting and encouraging partnerships with NWT schools that enable students to understand career opportunities available as well as training and education required to pursue these opportunities encourage partnerships with Aurora College and other Canadian post-secondary education institutions to establish work experience and job placement programs• work with local employment officers, and advertise positions available in northern newspapers and the company website• work through Skills Canada, the Native Women’s Association of the Northwest Territories, the Northwest Territories Status of Women Council, Aurora College, Aboriginal communities, and the Government of the Northwest Territories to promote women in trades and mining occupations• verify that hiring commitments from contractors are met• provide employment incentives (e.g., performance)• offer scholarships to female NWT students who are attending college and university programs• conduct a training needs assessment to identify existing educational and/or skill levels of Aboriginal community members and other NWT residents who apply for positions, so that work can be offered to new recruits and opportunities for advancement can be offered to existing employees• financial or in-kind support “women in trades” programs in partnership with educational institutions and women’s groups in selected communities• establish a recruitment and training strategy for school students that encourages and promotes the completion of secondary school and awards for women who are in an apprenticeship program with the Project• encourage career development and advancement for young Aboriginal employees through mentoring program	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.7 – Subjects of Note 12.7.1 – Subject of Note: Employment, Training and Economic Development 12.7.1.5 – Mitigation Table 12.7-4	<p>The Project will encourage opportunities for education and training on Project-related trades and careers:</p> <ul style="list-style-type: none">• provide apprenticeship positions for NWT Aboriginal residents and other NWT residents who successfully meet trades entrance requirements• establish a mine orientation program for all new employees• provide money management training• work with community agencies to ensure that literacy programs will be directly linked to other kinds of upgrading, education, and training programs, so that participants may further improve their qualifications towards employment• provide First Aid/CPR, SHE and WHMIS training• provide supervisor and mentor training• provide apprentice and trade positions• make best efforts to schedule training so that potential employees who have completed the training will be able to take immediate advantage of employment opportunities with the Project, and encourage contractors to do the same• encourage partnerships with NWT schools regarding work experience and job placement programs• encourage partnerships with Aurora College and other Canadian post-secondary education institutions to establish work experience and job placement programs• offer scholarships to female NWT students who are attending college and university programs• conduct a training needs assessment to identify existing educational and/or skill levels of Aboriginal community members and other NWT residents who apply for positions, so that work can be offered to new recruits and opportunities for advancement can be offered to existing employees• offer scholarships and awards for women who are in an apprenticeship program with the Project• encourage career development and advancement for young Aboriginal employees through mentoring program• work with and encourage contractors to participate and support De Beers' commitments related to general hiring commitments as well as promoting the participation of women in the workforce and provide employment incentives to encourage relocation to the NWT	Management	Construction Operation
12.7 – Subjects of Note 12.7.2 – Subject of Note: Demands on Infrastructure 12.7.2.1 - Introduction 12.7.2.1.3 – Project Features that Reduce Effects Table 12.7-7	<p>The Project may increase demand for existing infrastructure from the transport of material and people to the Project site:</p> <ul style="list-style-type: none">• direct flights reducing demand on NWT's largest airport• construction, operations, and closure accommodations will include the necessary facilities to sustain the workforce at the site, including medical personnel accessible 24/7, reducing demand on transport of people	Management	Construction Operation
12.7 – Subjects of Note 2.7.2 – Subject of Note: Demands on Infrastructure 12.7.2.1 - Introduction 12.7.2.1.3 – Project Features that Reduce Effects Table 12.7-7	<p>Cost to government to provide and maintain services and physical infrastructure:</p> <ul style="list-style-type: none">• private medical services• recycling• provide counselling• offer programs for drug and alcohol abuse and addiction	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.7 – Subjects of Note 2.7.2 – Subject of Note: Demands on Infrastructure 12.7.2.2 - In-migration 12.7.2.2.2 – Effects Analysis	De Beers will not add pressures to the existing medical services. De Beers will use private services for the initial medical check of all new employees and will contract with emergency services to deal with on-site injuries.	Management	Construction Operation
12.7 – Subjects of Note 2.7.2 – Subject of Note: Demands on Infrastructure 12.7.2.4 – Government Monitoring and Regulatory Capacity 12.7.2.4.2 – Effects Analysis And 12.7.2.7 – Mitigation	De Beers will also be completing its own Project monitoring and reporting as mandated by the regulatory processes. De Beers will be providing revenues and taxes that can be directed to the budget of departments and agencies.	Management Monitoring	Construction Operation
12.7 – Subjects of Note 2.7.2 – Subject of Note: Demands on Infrastructure 12.7.2.7 – Mitigation	De Beers also offers a volunteer incentive, which employees can apply for, and volunteer incentives will be provided to those employees interested in volunteering their time for social or cultural programs or activities in their home communities.	Management	Construction Operation
12.7 – Subjects of Note 2.7.2 – Subject of Note: Demands on Infrastructure 12.7.2.7 – Mitigation Table 12.7-13	The Project may result in out-migration and / or in-migration: <ul style="list-style-type: none">• offer pick-up points throughout the LSA communities• offer northern relocation benefit	Management	Construction Operation
12.7 – Subjects of Note 2.7.2 – Subject of Note: Demands on Infrastructure 12.7.2.7 – Mitigation Table 12.7-13	The Project may increase demand for existing infrastructure and services from the transport of material and people to the Project site: <ul style="list-style-type: none">• direct flights reducing demand on NWT’s largest airport• construction, operations and closure camp will include the necessary facilities to sustain the workforce at the site, including medical personnel accessible 24/7, reducing demand on transport of material and people• industry covers cost of upgrades and maintenance of the winter road.	Management	Construction Operation
12.7 – Subjects of Note 2.7.2 – Subject of Note: Demands on Infrastructure 12.7.2.7 – Mitigation Table 12.7-13	The Project may result in pressure on government services: <ul style="list-style-type: none">• private medical services• on-site recycling• provide counselling services for employees• offer programs for drug and alcohol abuse and addiction• royalties and taxes• monitoring and reporting (consultation, annual report)	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.7 – Subjects of Note 2.7.2 – Subject of Note: Demands on Infrastructure 12.7.2.7 – Mitigation Table 12.7-13	The Project may result in time away from the family / community: <ul style="list-style-type: none">incentives to encourage volunteerism	Management	Construction Operation
12.7.3: Subject of Note: Tourism Potential and Wilderness Character 12.7.3.1 – Introduction 12.7.3.1.3 – Project Features that Reduce Effects Table 12.7-15	The Project may affect the availability of wildlife for viewing and harvesting: <ul style="list-style-type: none">compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiencya minimum flying altitude of 300 m above ground level (except during takeoff, landing, and field work) will be maintained for cargo, passenger aircraft, and helicopter outside of the Project siteequipment noise sources will be limited by locating them inside buildings, to the extent possiblelimit use of airstrip to mine and exploration activitieswatering of roads, airstrip, and laydown areas will facilitate dust suppressionspeed limits will be established and enforcedthe Project will have a comprehensive water management system, designed to reduce downstream effectsall buildings will be removed at closureat closure, transportation corridors and the airstrip will be scarified and loosened to encourage natural re-vegetation, and re-contoured where requiredKennady Lake will be refilled after operationsat closure, the entire site will be stabilized and contoured to blend with the surrounding landscape, where possible	Management	Construction Operation Closure
12.7.3: Subject of Note: Tourism Potential and Wilderness Character 12.7.3.1 – Introduction 12.7.3.1.3 – Project Features that Reduce Effects Table 12.7-15	The Project may affect the availability of fish for sport fishing <ul style="list-style-type: none">compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiencya minimum flying altitude of 300 m above ground level (except during takeoff, landing, and field work) will be maintained for cargo, passenger aircraft, and helicopter outside of the Project siteequipment noise sources will be limited by locating them inside buildings, to the extent possiblelimit use of airstrip to mine and exploration activitieswatering of roads, airstrip, and laydown areas will facilitate dust suppressionspeed limits will be established and enforcedthe Project will have a comprehensive water management system, designed to reduce downstream effectsall buildings will be removed at closureat closure, transportation corridors and the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where requiredKennady Lake will be refilled after operationsat closure, the entire site will be stabilized and contoured to blend with the surrounding landscape, where possible	Management	Construction Operation Closure

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.7.3: Subject of Note: Tourism Potential and Wilderness Character 12.7.3.1 – Introduction 12.7.3.1.3 – Project Features that Reduce Effects Table 12.7-15	<p>The Project may result in a loss of wilderness character</p> <ul style="list-style-type: none">• compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiency• a minimum flying altitude of 300 m above ground level (except during takeoff, landing, and field work) will be maintained for cargo, passenger aircraft, and helicopter outside of the Project site• equipment noise sources will be limited by locating them inside buildings, to the extent possible• limit use of airstrip to mine and exploration activities• watering of roads, airstrip, and laydown areas will facilitate dust suppression• speed limits will be established and enforced• the Project will have a comprehensive water management system, designed to reduce downstream effects• all buildings will be removed at closure• at closure, transportation corridors and the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where required• Kennady Lake will be refilled after operations• at closure, the entire site will be stabilized and contoured to blend with the surrounding landscape, where possible	Management	Construction Operation Closure
12.7.4 – Subject of Note: Proposed National Park 12.7.4.1 – Introduction 12.7.4.1.3 – Project Features that Reduce Effects Table 12.7-17	<p>The Project may affect the availability of wildlife for viewing, affect vegetation, change visual aesthetics, lead to anthropogenic noise, change access and change the cultural landscape of the Proposed National Park:</p> <ul style="list-style-type: none">• compact layout of the surface facilities will limit the area disturbed at construction and increase site operations efficiency• a minimum flying altitude of 300 m above ground level (except during takeoff, landing, and field work) will be maintained for cargo, passenger aircraft, and helicopter outside of the Project site• equipment noise sources will be limited by locating them inside buildings, to the extent possible• limit use of airstrip to mine and exploration activities• watering of roads, airstrip, and laydown areas will facilitate dust suppression• speed limits will be established and enforced• the Project will have a comprehensive water management system, designed to reduce downstream effects• at closure, transportation corridors and the airstrip will be scarified and loosened to encourage natural revegetation, and re-contoured where required• Kennady Lake will be refilled after operations• at closure, the entire site will be stabilized and contoured to blend with the surrounding landscape distinguishable from the landscape, where possible	Management	Construction Operation Closure
12.7.4 – Subject of Note: Proposed National Park 12.7.4.3 – Effects Analysis 12.7.4.3.3 - Access	De Beers will not allow its airstrip to be used for commercial or tourist purposes.	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.7.5 – Subject of Note: Culture, Heritage, and Archaeology 12.7.5.1 - Introduction 12.7.5.1.3 – Project Features that Reduce Effects And 12.7.5.2.2 – Effects Analysis	Loss of Aboriginal languages: <ul style="list-style-type: none">encourage the practice of Aboriginal languages at the worksite when it does not compromise health and safety	Management	Construction Operation
12.7.5 – Subject of Note: Culture, Heritage, and Archaeology 12.7.5.1 - Introduction 12.7.5.1.3 – Project Features that Reduce Effects	Loss of cultural landscape features, loss of archaeological resources and gain knowledge of archaeological resources: <ul style="list-style-type: none">minimize footprintdo systematic data collection for sites that cannot be avoided during construction and operationsavoidance of archaeological sites	Management	Construction Operation
12.7.5 – Subject of Note: Culture, Heritage, and Archaeology 12.7.5.4 – Archaeological Resources 12.7.5.4.2 – Effects Analysis	De Beers is committed to avoiding the 45 sites archaeological sites that are more than 1 km from the Project footprint and the 125 sites along the Winter Access Road that are well removed from the route.	Management	Construction Operation
12.7.5 – Subject of Note: Culture, Heritage, and Archaeology 12.7.5.5 – Residual Effects Summary	De Beers allows the use of Aboriginal languages in the work place, as long as it does not interfere with health and safety. Likewise, through its literacy efforts, De Beers will continue to support Aboriginal language programming in communities.	Management	Construction Operation
12.7.5 – Subject of Note: Culture, Heritage, and Archaeology 12.7.5.5 – Residual Effects Summary	De Beers recognizes that connections with the land exist, and it will work with Łutselk'e and Parks Canada, once the Park is established, on initiatives that might be identified as essential to keep the story on the land alive.	Management	Construction Operation
12.7.5 – Subject of Note: Culture, Heritage, and Archaeology 12.7.5.6 – Mitigation Table 12.7-21	Effect on Aboriginal Languages: <ul style="list-style-type: none">encourage the practice of Aboriginal language at the worksite when it does not compromise health and safetycontinued support for Aboriginal language initiatives in the communities through De Beers Literacy Programmingwork with community agencies to ensure that literacy programs will be directly linked to other kinds of upgrading, education, and training programs, so that participants may further improve their qualifications towards employment	Management	Construction Operation

Table 1.VII-1 Summary of Commitments Made by De Beers Canada Inc. in the Gahcho Kué Project Environmental Impact Statement (continued)

Section of the EIS	Commitment Description	Commitment Type ^(a)	Project Phase ^(b)
12.7.5 – Subject of Note: Culture, Heritage, and Archaeology 12.7.5.6 – Mitigation Table 12.7-21	Effect on the cultural landscape: <ul style="list-style-type: none">minimal footprintrelatively short life-of-mineonly two mine rock piles visible post-closurework with Łutselk'e and Parks Canada, once the Park has been established, on programming that reflects the story on the land and the continuation of the relationship with the landscapefinancial or in-kind support for on-the-land programming run by schools	Management	Construction Operation
12.7.5 – Subject of Note: Culture, Heritage, and Archaeology 12.7.5.6 – Mitigation Table 12.7-21	Effect on archaeological resources: <ul style="list-style-type: none">avoidance of archaeological sitessystematic data collection for sites that cannot be avoided	Management	Construction Operation
12.9 – Follow-up and Monitoring	In addition to environmental design features and mitigation, De Beers has other programs or actions that it carries out. These are adjusted from time to time to correspond to a community feedback or interest. These programs, (e.g., literacy) first developed in collaboration with communities for Snap Lake, will be expanded to into the Project.	Management	Construction Operation
Section 13: Cumulative Effects			
	No Commitments Presented		
Section 14 - Conclusions			
	No Commitments Presented		

^a Commitment types = management, environmental design feature, monitoring, and

^b Project phase can include construction, operation, and/or closure