



PREFACE

**APPLICATION FOR APPROVAL
OF THE DEVELOPMENT PLAN FOR
NIGLINTGAK FIELD
PROJECT DESCRIPTION****EXECUTIVE SUMMARY****P.1.1 PURPOSE OF THIS PLAN**

Shell Canada Limited (Shell) proposes to develop the natural gas resources recoverable from Significant Discovery Licence 19 (the Niglintgak field). The Niglintgak field is located about 120 km northwest of Inuvik and 85 km west of Tuktoyaktuk in the Northwest Territories. Shell is submitting this development plan for the Niglintgak field to the National Energy Board (NEB) for approval under the *Canada Oil and Gas Operations Act (COGOA)*.

P.1.2 EXPLORATION HISTORY

The Niglintgak field was discovered by Shell in 1973 when the H-30 well was drilled. Appraisal well C-58, drilled the same year, was located 6 km to the southeast. Three infill wells were also drilled:

- M-19 in 1975
- B-19 in 1976
- E-58 in 1977

All of these wells have been abandoned. Shell has spent in excess of \$120 million (2003\$) on exploring the Niglintgak field and preparing regulatory applications for its development. Shell's proposed development seeks to recover the company's investment and realize the full value of the Niglintgak field in a manner that is consistent with its seven principles of sustainable development. Based on the most recent interpretations of the exploration data obtained, the proponent estimates that the Niglintgak field might contain about 27 Gm³ of recoverable natural gas and natural gas liquids (NGLs).

P.1.3 PRODUCTION FACILITIES

The main production facilities at the Niglintgak field will consist of six to 12 production wells located on three well pads. A system of above-ground flow lines will bring the produced gas and associated NGLs to a gas conditioning facility located in the Kumak Channel. The development will also include a disposal well, a disposal sump for cuttings disposal, and associated infrastructure, such as an emergency shelter and helipads. One deep sand well and three A sand wells will be drilled from the north well pad. One A sand well will be drilled from the centre well pad, while a deep sand well will be drilled from the south

P.1.3 PRODUCTION FACILITIES (cont'd)

well pad. Based on the results of the reservoir monitoring plan, up to six additional wells might be required after start-up to deplete the reservoir.

Construction is planned over the three winter seasons following NEB approval for the Niglintgak field, from 2006 until 2009. The Operations Phase is planned to begin in 2009 and continue for about 25 years.

P.1.4 ESTIMATED CAPITAL AND OPERATING COSTS

Initial capital expenditures for drilling and facilities at the Niglintgak field are expected to total \$369 million. The estimated operations and maintenance expenditure at Niglintgak over the life of the gas field is \$250 million.

P.1.5 TRANSPORTATION PLAN

One of the main components required for realizing the opportunity presented by the resources of the Niglintgak field is a means of transporting the natural gas and NGLs to market. The Mackenzie Gas Project consists of developing natural gas in the Mackenzie Delta from the three largest discovered onshore natural gas fields, known as the anchor fields:

- Niglintgak
- Parsons Lake
- Taglu

The owners of the three anchor fields are proposing to construct the Mackenzie gathering system, which consists of gathering pipelines to collect the natural gas and associated NGLs and transport them to a facility located near Inuvik (the Inuvik area facility). The Mackenzie gathering system will also include gas processing and NGL recovery facilities at the Inuvik area facility and an NGL pipeline to extend south about 480 km from the Inuvik area facility to Norman Wells, where it will tie in to the existing Enbridge Pipelines (NW) Inc. pipeline. The Mackenzie Gas Project also includes the Mackenzie Valley pipeline, which will extend from Inuvik along the Mackenzie River to Norman Wells and continue south to connect to an extension of the NOVA Gas Transmission Ltd. (NGTL) system, south of the Northwest Territories–Alberta boundary.

Imperial Oil Resources Ventures Limited will operate both the Mackenzie gathering system and the Mackenzie Valley pipeline system.

P.1.6 ENVIRONMENTAL AND SOCIO-ECONOMIC EFFECTS

In keeping with the direction provided by the various regulatory agencies responsible for assessing and regulating energy developments in the Northwest Territories, Shell, together with the other proponents of the Mackenzie Gas Project, developed an Environmental Impact Statement (EIS) for the Mackenzie

Gas Project. The EIS describes the existing baseline conditions, the potential effects of the project, the associated measures to reduce these effects and the predicted residual effects after mitigation.

The environmental assessment of the project focused on identifying issues most important to potentially affected northern communities. These key issues were identified through a public consultation process that began in 2001 and will continue throughout the life of the project.

To ensure that the EIS did not under-report potential effects, a precautionary principle was applied, which requires that where threats of serious or reversible damage exist, lack of full scientific certainty will not be used as a reason for postponing cost-effective measures to prevent environmental degradation. Although some studies are ongoing, the field development is not expected to have any significant adverse environmental or socio-economic effects, taking into account available mitigation strategies and extensive monitoring commitments.

The concept of environmental and socio-economic sustainability was used as the basis for determining the significance of the project's effects. Shell's commitment to sustainable development is one of the company's key business strategies. The Niglintgak development will be managed to ensure that key sustainable development principles are maintained throughout the design, construction and operations phases of the project.

P.1.7 PROJECT BENEFITS

Planning, designing, constructing, operating and maintaining the Niglintgak field and the overall Mackenzie Gas Project will generate a significant demand for qualified labour. To the extent possible, qualified Aboriginal and other northern residents and businesses in the Northwest Territories, as well as other Canadians, will be provided with employment or contracting opportunities. The project will also result in indirect and induced economic and employment benefits through the procurement of supplies and materials for the project, and because people employed directly and indirectly by the project will be spending their disposable income.

Consistent with sustainable development principles, the major project priorities are to:

- design, construct and operate the project safely
- demonstrate care for the environment
- create a wide range of business and employment opportunities for Aboriginal, other northern and other Canadian residents
- meet quality, cost and schedule targets necessary to meet Shell's shareholder investment expectations

P.1.7 PROJECT BENEFITS (cont'd)

The Mackenzie Gas Project will be anchored by developing about 164 Gm³ of sweet natural gas from the three anchor fields. The Mackenzie Valley pipeline is needed to economically transfer the natural gas from the fields to southern markets over the next 25 to 30 years.

P.1.8 CONSULTATION

The Mackenzie Gas Project consultation activities were designed to meet the communities' expectations for meaningful involvement in developing the project, and to satisfy the proponents' corporate and regulatory requirements for public consultation. The proponents used various methods to address the broad range of interests, levels of understanding and needs of the project stakeholders. The methods and activities were also designed to accommodate the remote location of some of these stakeholders. Considerable effort was made to respect consensus-based decision making and information exchange, to develop a consultation program that would provide the communities with the opportunity for input.

Through consultation, the proponents sought to explain the purpose, needs and limitations of the project, and at the same time, sought to understand and address local concerns and to provide information to the project team for consideration in the program execution. The consultation program will extend beyond the regulatory submission and will continue throughout the construction and operations of the Niglintgak field.

P.1.9 CONCLUSION

Shell views itself as a long-term stakeholder in the North. As a result, Shell is committed to contributing to sustainable development and integrating economic, environmental and social considerations in the decision-making process across all of its business activities. Shell will incorporate sustainable development principles into the design and development of Niglintgak in a way that enhances commercial benefits, reduces environmental impacts and takes into account traditional uses for land. Shell is committed to developing the field in a socially responsible way that benefits Canadians, including Aboriginal and other northerners.



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