



INTRODUCTION

APPLICATION FOR APPROVAL  
OF THE DEVELOPMENT PLAN FOR  
NIGLINTGAK FIELD  
PROJECT DESCRIPTION

DEVELOPMENT PLAN OVERVIEW

1.1.1 APPROVAL REQUESTED

1.1.1.1 Niglintgak Location

Shell Canada Limited (Shell), holder of the Niglintgak Significant Discovery Licence 19 (SDL 19), is proposing to develop and produce the natural gas and natural gas liquids (NGLs) from the Niglintgak gas field. The Niglintgak field is located above the Arctic Circle in the Mackenzie Delta in the Northwest Territories (NWT). Niglintgak is about 120 km northwest of Inuvik and 85 km west of Tuktoyaktuk (see Figure 1-1).

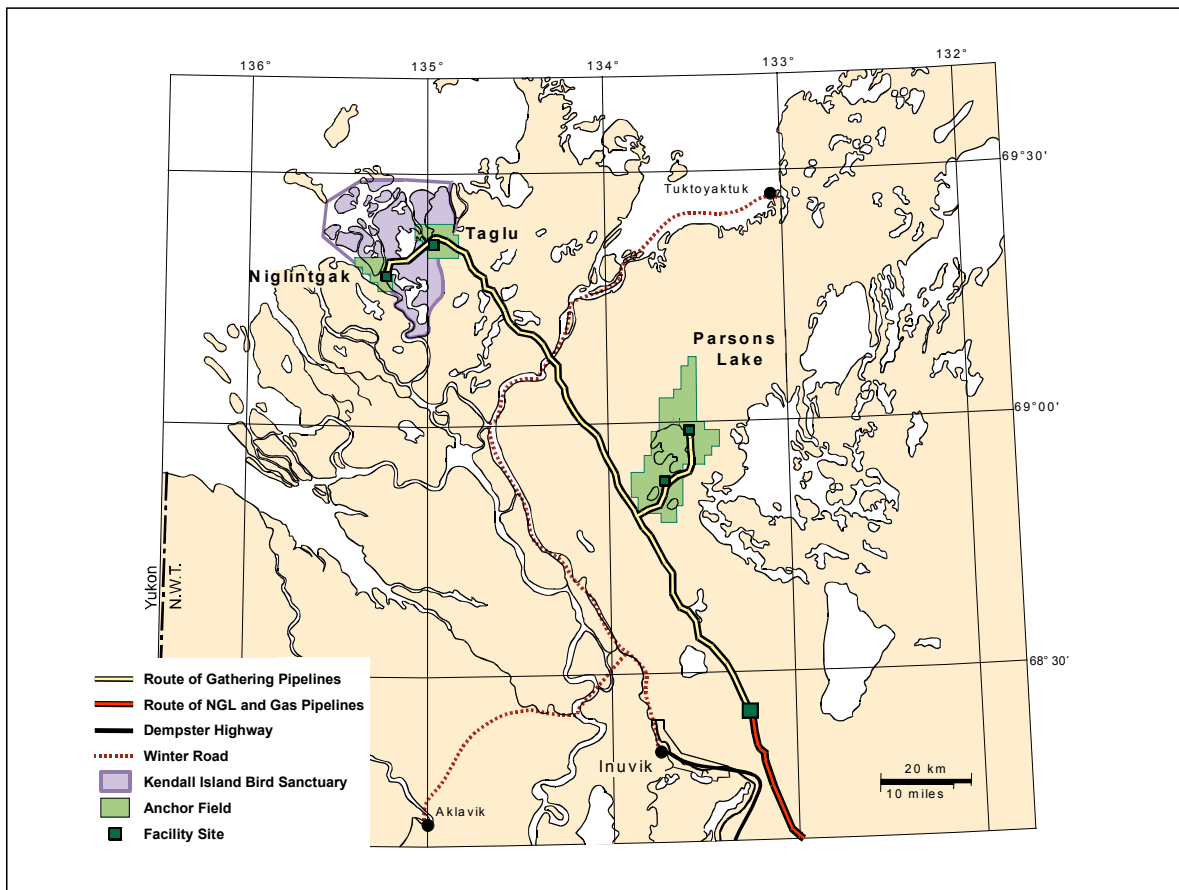


Figure 1-1: Location of Niglintgak Field

### 1.1.1.2 Conceptual Design Flexibility

The Niglintgak development plan described in this application is based on a conceptual design. At the current stage of development, there remain some design uncertainties that will be resolved as ongoing development and design activities progress. Flexibility has been included in this development plan so that it can continue to be refined as new technical, environmental, stakeholder, economic and other information becomes available.

For development areas where design flexibility is required, the expected range of design uncertainties has been identified and included in the development evaluations and environmental assessments. Flexibility for future refinement has been considered in the following specific parts of the conceptual design:

- the number of future development wells (up to six additional wells identified) required to manage the reservoir compartmentalization uncertainty
- alternatives for water crossing techniques if horizontal directional drilling (HDD) is not feasible
- phasing optimization of drilling and construction activities
- optimization of gas conditioning facility barge transportation, foundations and potential dredging
- the final design flow rate for production facilities

For the Niglintgak gas conditioning facility design, Shell has conducted its environmental impact assessment (EIA) at a nominal capacity of 5.7 Mm<sup>3</sup>/d (200 MMscf/d), which has shown that no significant effects are likely at that rate of production. Shell requests that the facility throughput rate not be limited, provided emissions from the facility are within the assessed amounts.

The range of design flexibility has been evaluated in the development plan, with no significant impacts identified in the EIA or other evaluations. As this conceptual design is refined, Shell believes that the overall impacts will remain within the scope of this conceptual design.

### 1.1.1.3 Approval Request

Pursuant to Section 5(1)(b) of the *Canada Oil and Gas Operations Act* (COGOA), Shell requests approval of the Niglintgak development plan as outlined in this submission and associated support documentation.

## 1.1.2 SCOPE OF APPLICATION

The Niglintgak gas field is one of the three anchor fields included in the Mackenzie Gas Project. The other two fields are:

- Taglu, held by Imperial Oil Resources Limited

- Parsons Lake, held 75% by ConocoPhillips Canada (North) Limited (ConocoPhillips) and 25% by ExxonMobil Canada Properties (ExxonMobil), and operated by ConocoPhillips

The Mackenzie Gas Project includes developing:

- the three anchor fields
- the Mackenzie gathering system, which comprises gathering pipelines, a gas processing facility near Inuvik (the Inuvik area facility), and an NGL pipeline to transport the NGLs from the Inuvik area facility to Norman Wells
- the Mackenzie Valley pipeline, to transport gas from the Inuvik area facility to the Northwest Territories–Alberta boundary

Although the overall project is an integrated development, separate regulatory applications are being submitted for each of the anchor fields, the gathering system and the gas pipeline.

The Niglintgak development plan and associated support material are contained within several documents, some of which will be submitted separately. The application is made up of two parts:

- Part 1, which includes a general description of the proposed development plan, including reservoir development, production facilities design, construction activities and operational plans
- Part 2, which provides additional information to support key aspects of the application. Part 2 information is presented as a list of confidential information supporting Part 1, including reports on geology and geophysical interpretation, drilling and completions evaluations, and a cost estimate. Part 2 contains information that Shell deems to be privileged and confidential, and is submitted to the National Energy Board (NEB) in confidence pursuant to the *Canada Petroleum Resources Act*.

Additional supporting material submitted includes:

- the *Mackenzie Gas Project Public Consultation, Volume 1: Consultation Program*, and *Volume 2: Appendices*
- the Mackenzie Gas Project Environmental Impact Statement (EIS), Volumes 1 to 8, which cover the biophysical and socio-economic assessment of the Niglintgak development and other components of the Mackenzie Gas Project
- the *Mackenzie Gas Project Gas Resource and Supply Study*, Gilbert Laustsen Jung Associates Ltd.
- the *Mackenzie Valley Pipeline Market Supply/Demand and Infrastructure Analysis*, Navigant Consulting, Inc.

**1.1.3 CANADA BENEFITS PLAN**

Shell will develop and submit to Indian and Northern Affairs Canada (INAC) a Canada Benefits Plan as part of the documentation supporting this application. The Niglintgak benefits plan will be based on common benefits principles developed jointly with the other Mackenzie Gas Project proponents in consultation with Benefits Plan stakeholders. The Niglintgak plan will include benefits principles common to all proponents, as well as those benefits plan details unique to the Niglintgak development.

The Niglintgak development is within the Inuvialuit Settlement Region (ISR) and will require a separate land access and benefits agreement between Shell and the Inuvialuit. The negotiated land access and benefits agreement with the Inuvialuit will remain a confidential agreement, but will be consistent with the principles identified in the Canada Benefits Plan documentation.

**1.1.4 PROJECT PROPONENT**

The Niglintgak field is being developed by Shell, which holds and operates SDL 19. Shell also has an interest in the proposed Mackenzie gathering system and the Mackenzie Valley pipeline.

Shell is a Canadian corporation whose ownership is divided between public shareholders (22%) and Shell Investments Limited (78%). With headquarters in Calgary, Shell is one of the country's largest integrated energy companies and a major producer of natural gas, NGLs, sulphur and bitumen. Shell manufactures, distributes and markets refined petroleum products across the country.

Shell has extensive experience with exploration and development in Canada and, through its majority shareholder, throughout the world. Shell's experience in development activities in similar remote and northern environments will be fully used in the Niglintgak development.



## INTRODUCTION

**APPLICATION FOR APPROVAL  
OF THE DEVELOPMENT PLAN FOR  
NIGLINTGAK FIELD  
PROJECT DESCRIPTION****PROJECT PRINCIPLES AND POLICIES****1.2.1 POLICIES**

Commitments and policies are the means by which management communicates its intentions and expectations to employees, contractors and stakeholders. Shell policies and commitments are not voluntary, they are mandatory for all Shell's businesses. Specific policies that will guide this venture include Shell's:

- commitment to sustainable development
- health, safety and environment (HSE) policy
- business principles and code of ethics
- drug and alcohol policy
- corporate security policy
- commitment to the protection of personal information
- respectful workplace policy

**1.2.2 SUSTAINABLE DEVELOPMENT**

Shell strives to meet its commitments and to lessen the negative impacts of its activities on the communities where the company resides and operates. Shell's goal is to assess its performance and show continuous improvement against targets and measures that are relevant to key business issues and that matter to stakeholders. In 2004, Shell published its 13<sup>th</sup> sustainable development report and is proud of the progress demonstrated over the years.

Shell's commitment to sustainable development (see Figure 1-2) is one of the company's key business strategies, guided by the following seven principles:

- protect the environment
- manage resources
- respect and safeguard people
- benefit communities
- work with stakeholders
- generate robust profitability
- deliver value to customers

Evaluation criteria used for design decisions in the Niglintgak development plan are consistent with, and are based on, these seven sustainable development principles.

## Commitment to Sustainable Development

Shell Canada is committed to contribute to sustainable development. To our company, this means the integration of economic, environmental and social considerations in the decision-making process across all of our business activities. It means addressing both short-term and long-term needs.



### Commitment to Sustainable Development

Our activities are guided by the following principles:

**Generate robust profitability**

Successful financial performance is essential to our sustainable future and contributes to the prosperity of society.

**Deliver value to our customers**

Customers are the lifeblood of our business. We seek constantly to strengthen existing customer relationships and develop new ones.

**Protect the environment**

The natural environment supports all human activity. We continually look for new ways to reduce the environmental impact of our operations, products and services throughout their life.

**Manage resources**

Efficient use of natural resources, for example, energy, land and water, reduces our costs and respects the needs of future generations. We constantly look for ways to minimize their use.

**Respect and safeguard people**

We aim to treat everyone with respect. We strive to protect people from harm from our products and operations.

**Benefit communities**

Wherever we work we are part of a local community. We will constantly look for appropriate ways to contribute to the general well being of the community and the broader societies who grant our license to operate.

**Work with stakeholders**

We affect, and are affected by, many different groups of people, our stakeholders. We aim to recognize their interest in our business and to listen and respond to them.



**Clive Mather**  
President and C.E.O.

### Health, Safety and Environment Policy

**Shell Canada is committed to:**

- pursue the goal of no harm to people.
- protect the environment and pursue the goal of prevention of pollution.
- use material and energy efficiently to provide our products and services.
- develop energy resources, products and services consistent with these aims.
- publicly report on our performance and engage in stakeholder consultation.
- play a leading role in promoting best practice in our industry.
- manage health, safety and environment as any other critical business activity.
- promote a culture in which all Shell employees share this commitment.

**Shell Canada Limited:**

- has a systematic approach to health, safety and environmental management designed to ensure compliance with the law and to achieve continuous performance improvement.
- sets targets for improvement and measures, appraises and reports performance.
- requires contractors to manage in accordance with this policy.
- requires joint ventures under its operational control to apply this policy and uses its influence to promote this policy in its other ventures.
- includes health, safety and environmental performance in the appraisal of all staff and rewards accordingly.

We strive to achieve a health, safety and environmental performance that we are proud of, to earn the confidence of customers, shareholders and society at large, to be a good neighbour and to contribute to sustainable development.

August 1, 2004

**Figure 1-2: Commitment to Sustainable Development**

**1.2.3 HEALTH, SAFETY AND ENVIRONMENT POLICY**

The management of health, safety and the environment is integral to all Shell's activities. Shell is committed to a health, safety and environmental performance of which it can be proud, to earn the confidence of its customers, shareholders and society at large and to be a good neighbour.

Shell has maintained comprehensive health, safety and environmental management systems since 1990, and has maintained ISO 14001 registration in all its oil and gas production operations since 2001. Ongoing registration ensures that Shell continues to make improvements in its overall HSE performance through effective implementation of these systems.





## INTRODUCTION

### APPLICATION FOR APPROVAL OF THE DEVELOPMENT PLAN FOR NIGLINTGAK FIELD PROJECT DESCRIPTION

#### PROJECT PURPOSE AND NEED

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##### 1.3.1 PROJECT PURPOSE

The purpose of the Mackenzie Gas Project is to develop Mackenzie Delta onshore gas and deliver it safely and reliably to the Northwest Territories–Alberta boundary for sale into existing pipeline infrastructure. The Niglintgak field development is one of three anchor fields needed to provide an adequate natural gas supply to economically justify the development of the Mackenzie Gas Project gathering system and gas pipeline system.

##### 1.3.2 PROJECT NEED

The Niglintgak field development is needed as part of the Mackenzie Gas Project to generate robust profitability for Shell and its shareholders, while maintaining a commitment to its seven principles of sustainable development. Shell requires good financial performance to continue to meet the financial expectations of its shareholders and remain attractive to oil and gas investors. The Niglintgak development will contribute significantly to Shell's corporate portfolio through the addition of replacement gas resources, and by providing a reasonable return on capital invested.

As part of the Mackenzie Gas Project, the Niglintgak field development is needed to provide new gas needed by future markets. Long-term gas market studies were completed to assess the gas market needs for incremental gas production from the Mackenzie Delta. These assessments included a regional market analysis and an evaluation of the gas supply and deliverability for North America. A study conducted by Navigant Consulting Inc. concluded that there would be sufficient market need for the Mackenzie Delta gas to support the construction of the Mackenzie Valley pipeline and the gas it transports.

