

# **Consolidated Information Requirements**

**for the Environmental Assessment and Regulatory  
Review of a Northern Gas Pipeline Project through the  
Northwest Territories**

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September 2002

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# PREFACE

## INTRODUCTION

A number of agencies with federal and territorial responsibility for environmental impact assessment and regulatory review (see Appendix A) have agreed to develop a coordinated review process for a potential major natural gas pipeline project through the Northwest Territories. The Cooperation Plan<sup>1</sup> outlines a framework for this coordinated review, including measures to reduce duplication and increase efficiency while respecting the legislated authority and mandate of the individual agencies. The preparation of Consolidated Information Requirements (CIR) is one of the initial coordinating measures contemplated under the Cooperation Plan.

The CIR in no way binds any of the agencies to a certain course of action. The CIR simply describes combined and synthesized information needs of regulators and environmental impact assessment agencies and is based on published sources (see section 22.0 for a complete listing).

Each agency is independent and has a legislative mandate to assess the proposed pipeline development and to make recommendations and/or to take decisions in its discretion respecting the proposed development. This includes decisions respecting the terms of reference for the environmental impact statement (EIS) to be prepared under the Joint Review Panel process anticipated for the project, which will be developed and issued at a later date by the agencies with specific responsibility for environmental impact assessment.

Part 1 of the CIR focuses on the baseline data and environmental assessment requirements of the agencies. Baseline data collected in accordance with these requirements will support both environmental assessment and regulatory applications. As noted, the agencies with specific responsibility for environmental impact assessment (the EIA agencies<sup>2</sup>) will develop and issue terms of reference for the environmental impact statement (EIS) at a later date. The EIA agencies will consult with the public on these terms of reference at a time to be agreed.

Part 2 of the CIR deals with the requirements related to certificates, licences or permits to be considered by the various regulators likely to be involved in the project review. These requirements and the formats in which they are presented are specific to each agency and cannot be consolidated. However, a list of guidance material for each specific type of application is provided in Part 2 to direct applicants to the appropriate sources. As mentioned above, use of

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<sup>1</sup> Northern Pipeline Environmental Impact Assessment and Regulatory Chairs' Committee. June 2002. Cooperation Plan for the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories.

<sup>2</sup> EIA agencies means the Inuvialuit, the Mackenzie Valley Environmental Impact Review Board, and the Minister of the Environment.

Part 1 of the CIR as a guide to baseline data collection will allow proponents to address the information requirements of the regulators as well as EIA agencies.

## **Purpose**

The CIR have been prepared, in advance of the filing of a Preliminary Information Package (PIP) and project applications, to assist proponents to collect appropriate baseline information and to plan for the preparation of a complete environmental assessment report and regulatory applications. The EIA agencies will develop and issue detailed terms of reference for the EIS following the referral of the project to a joint panel as set out in the Cooperation Plan.

## **Scope**

The CIR comprise a synthesis of the published information requirements of the agencies listed in Appendix A. For the purposes of the preparation of the CIR, it has been assumed that such a project would entail field development and gathering systems in the Inuvialuit Settlement Region (ISR) and the construction of a pipeline through the Mackenzie Valley to a connection point in Alberta. The CIR does not address the offshore components of an 'over-the-top' scenario.

Information requirements may change if the proposed project varies significantly from the generic project. The development of this CIR does not preclude requests for other or additional information in response to the filing of project-specific applications.

## **Format of the CIR**

Information requirements are grouped and synthesized by subject area. Where more than one Agency identified information needs on the same or a similar subject, the Agencies have agreed that the most detailed requirement will prevail as the synthesis of the requirements in that particular area.

Terms used in the CIR are consistent with terms used in the Cooperation Plan and are not intended to replace specific terms and their meanings used during the environmental impact assessment and regulatory review of the project. Terms have been standardized in the CIR for purposes of clarity only.

## **Part I**

# **Baseline Information and Environmental Assessment Requirements for a Northern Gas Pipeline Project Through the Northwest Territories**

## 1.0 GENERAL REQUIREMENTS

**This section addresses requirements that apply to all aspects of baseline data collection and the ultimate use of the information in environmental impact assessment and regulatory applications. Specific data requirements for components of the bio-physical, social, cultural and economic environment are outlined in subsequent sections. Guidance is provided on approaches to analysis and evaluation of project impacts and mitigation.**

- Public<sup>3</sup> participation is an integral part of the environmental impact assessment and regulatory processes to which the project will be subject.
- Environmental impact assessment is a planning tool through which alternatives may be evaluated. The EIS must clearly identify the objectives of the project. It must also identify alternatives to the project, alternative means of carrying out the project, and the criteria used by the proponent to select a preferred option.
- A ‘valued ecosystem component’ approach to the assessment of project-related environmental and socio-economic impacts is preferred. Proponents should clearly document the process and criteria through which VECs or valued social components (VSCs) were identified. Temporal and spatial boundaries for each VEC/VSC should be clearly described and substantiated.
- Traditional knowledge should be incorporated to the extent possible into the baseline and assessment of impacts to each component of the bio-physical, social, cultural and economic environment.
- All sources of information should be accurately documented; copies of unpublished references should be provided. If additional studies are planned, a full description of these studies, their purpose, schedule, and the end use of the information to be collected should be included. Limitations to the usefulness of existing baseline information should be documented.
- Principles of sustainable development should be taken into account in project planning and in environmental assessment.
- Mapping in digital and/or paper format should comprise a component of the description of the bio-physical, social, cultural and economic environment, as appropriate.

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<sup>3</sup> In this context, ‘public’ means aboriginal groups, non-government organizations, affected communities and individuals, and the general public.

## 1.1 Project Description

The proponent should provide an overview or summary of the proposed project identifying location; project components; spatial and temporal boundaries; schedules; cost; other key features and associated activities. Also, document any relationship or interdependence to any previous and/or existing projects or projects under consideration.

**A detailed project description should include, but not necessarily be limited to:**

- the project background, context and current status, relationship to other projects (if applicable), the interdependence of related projects, proposed and/or anticipated related developments (future expansion or changes, how these can be accommodated with current proposal).
- a description of each of the project components and activities by location and phase (planning, construction, operations, decommissioning, abandonment and restoration). The components of the project should be described and supported by plans, diagrams, preliminary designs, design codes and results of site investigations to establish site parameters (*e.g.*, seismicity, soil bearing capacity and water impacts). The location, scale, magnitude, spatial and temporal boundaries of all project components should be documented with emphasis on those components/activities that have the greatest likelihood to create environmental effects. Off-site facilities required for the development (*e.g.*, airport, wharves, transportation access, power supply/transmission, metering stations, camps, housing and warehousing) are subject to same information requirements.
- the project location(s) using maps of appropriate scale. Location maps should include the boundaries of the proposed site, major existing infrastructure, adjacent land uses and any important features. Specifically, mapping should include:
  - For the pipeline route: maps at an appropriate scale (*e.g.*, 1:250,000) upon which is depicted: the project area; any alternative routes or facility sites studied; the areas of physical environment constraint (biophysical and land use or natural resource use) which limit pipeline route or facility site location; the proposed general route; and the approximate locations of all proposed ancillary facilities such as compressor, pump and meter stations, production platforms, and storage facilities; and
  - For specific project components: maps at an appropriate scale (*e.g.*, 1:50,000) upon which is depicted: the study area, any alternative facility sites studied, the areas of physical environment constraint (biophysical and land use or natural resource use) which limit facility site location, the locations of all proposed ancillary facilities such as compressor, pump and meter stations, production platforms, storage facilities; staging areas, quarry sites and all other support facilities; and



- For the pipeline route where it intersects or traverses community boundaries: maps at an appropriate scale (1:10,000) upon which is depicted community infrastructure, the limits of all Block Land Transfers, municipal boundaries and Development Control Zones.
- key project-related technology and processes as appropriate, including information remote processing, management or optimization technologies; and technologies to deal with solid wastes, liquid effluents, gaseous emissions, water consumption and use of renewable resources.
- standard mitigation practices that are applied regardless of location as part of project description. Those mitigation practices that are site or component-specific should be included in the section on mitigation.
- the rights, authorizations, permits and licences (*e.g.*, mineral rights, timber, water) required to undertake the proposed project. Specify short and long-term tenure requirements.
- the schedule for all project phases and activities and a statement committing the proponent to implement the project as described.
- the ownership and land tenure of lands to be used in project.
- a description of the site history.
- sufficient non-technical information for communities within the project area to understand the project and the potential impacts of the project.

Additional project description information may be required depending on the type of regulatory applications needed for the project. See specific references in part 2.

## **1.2 Purpose, Need and Rationale for the Project**

The proponent should document the purpose, objectives, need and rationale for the project. If the project objectives relate to broader private or public sector policies, programs or plans, this relationship should be documented to assist in placing the project's objectives in a broader context. Document any important factors (*e.g.*, timing to meet market needs) affecting project need.

### 1.3 Alternatives

Describe alternatives to the project and alternative means of carrying out the project as follows:

- describe the process undertaken to identify, consider and select alternative means of carrying out the project that are technically and economically feasible as well as the environmental effects of such alternative means. The rationale, criteria and evaluation used to identify and select the preferred alternatives must be documented as well as the consideration of alternative facility locations including the reasons for their acceptance or rejection.
- include a discussion of why the proposal submitted is the best method of fulfilling the objectives. The proponent should also describe the implications of not going forward with the proposed project (*i.e.* the “no-go” alternative).
- include an economic evaluation and cost-benefit analysis of any alternatives considered.

### 2.0 TERRAIN, GEOLOGY AND SOILS

**Provide a description of the existing terrain, geology and soils, including, but not necessarily limited to:**

- a description of the regional/area setting, topography, geological analysis and interpretation of the environment in the proposed project area including key terrain features such as mountains, rivers, lakes and other important terrain structures.
- information on geotechnical and geological stability, geological hazards, seismicity in the project area.
- identification and description of the following features and their location and geographic extent:
  - bedrock;
  - unconsolidated materials;
  - landforms;
  - continuous, discontinuous and sporadic permafrost;
  - ground ice content;
  - permafrost configuration including the frozen/unfrozen interfaces;
  - high-ice content soils and thaw-sensitive slopes and stream banks;
  - erosion-prone areas; and
  - areas of ground instability such as landslides, mudflows, slumping, avalanches, potential subsidence, fault zones and earthquakes.

- for areas of unstable or metastable soil, include an assessment of geotechnical and geological hazards and geothermal regimes that may be encountered during construction and operation of the facilities and an assessment of special designs and measures required to safeguard the pipeline.
- identification of areas prone/susceptible to avalanches, wave action and scour from water and ice.
- a description of soils in the project area, including soil classification. Information should include:
  - soil order, group, family, series and type;
  - soil profile descriptions, including aspects such as horizons, thickness of horizons, texture, colour, chemical properties and organic matter content;
  - the Canada Land Inventory Capability classification for agricultural lands, where applicable;
  - the official land status;
  - the areas susceptible to wind and water erosion;
  - areas susceptible to compaction, loss of structure and tilth;
  - areas with either sub-surface or surface drainage systems or irrigation systems for agricultural purposes; and
  - areas of organic soils used for specialty agricultural crops.

Predict and evaluate the potential effects of the project on terrain, geology and soils.

Identify mitigation measures, including changes to project design, to effectively minimize or eliminate adverse effects.

Identify any residual effects predicted to remain after successful implementation of mitigation measures.

### **3.0 CLIMATE**

**Provide a description of the existing climate and climatic trends, including, but not necessarily limited to:**

- documentation of the prevailing climatic conditions, seasonal variations, predominant winds including direction and velocity, precipitation (snow, rain, fog), extreme events, and associated hazards or limitations presented to the project.
- identification of recording stations and length of record for all meteorological data presented.

Document the effects of climate on the project and any changes in project design or implementation made to limit the effects of climate and to ensure worker safety.

Document the effects of climatic trends on the reliability today of existing or historical data for other biophysical components.

#### **4.0 AIR QUALITY AND NOISE**

**Provide a description of the existing air quality and ambient noise levels including, but not limited to:**

- a description of existing air quality, including airshed boundaries and how they were delineated, current sources of emissions, assimilative capacities, seasonal variations, and predominant winds, including direction and velocity.
- a description of existing ambient noise levels, including sources and variations.
- identification of recording stations and length of record for all air quality and noise data collection.

Predict and evaluate the potential effects of the project on ambient air quality and noise levels and any associated effects on wildlife and humans.

Identify effective mitigation measures to minimize or eliminate adverse effects.

Identify any residual effects predicted to remain after successful implementation of mitigation measures.

#### **5.0 WATER QUALITY AND QUANTITY**

**Provide a description of existing surface waters and groundwater, including, but not necessarily limited to:**

- identification of waterbodies, watercourses and major drainage areas within or near the boundaries of the project area. Identify watercourses that have year round flow.
- calculation of the drainage areas for watercourses along any proposed pipeline route. Determine the extent of connectivity to adjacent watercourses. Describe watercourse characteristics.

- for pipeline crossings of streams and rivers, provide
  - recurrence intervals (flood frequency) for high and low flow events
  - mean annual hydrographs and hydrographs of maximum and minimum events
  - an assessment of the potential for ice jamming and flooding
  - an assessment of bed stability at the crossing area.
- a description of existing surface water resources that could be affected by the proposed project, including quality and quantity (including seasonal variations), changes in lake sediment chemistry or particle size, and existing and planned water usage.
- a description of hydrological features such as channeled and unchanneled surface water flow, and floodway and floodplain data, particularly for potentially affected communities.
- identification of waterbodies and watercourses used for subsistence purposes, and describe the nature of the use.
- a description of existing groundwater resources that could be affected by the proposed project, including:
  - quality and quantity
  - hydrogeological conditions, including depth, flow patterns, recharge and discharge areas
  - existing and planned water usage.

Predict and evaluate the potential effects of the project on surface and groundwater resources and their users, including, for example, any changes in permafrost or ground thermal regime that may result in release of increased sediment loads to waterbodies.

Identify effective mitigation measures proposed to minimize or eliminate these potential effects.

Identify any residual effects predicted to remain after successful implementation of mitigation.

## **6.0 AQUATICS AND FISHERIES**

**Provide a description of the existing fisheries and aquatic resources, including, but not necessarily limited to:**

- a detailed fish resource inventory (including major fish, marine mammals, shellfish, marine plants, other aquatic life, distribution and habitat usage). Baseline fish habitat information should be provided for each watercourse likely to be affected. Where fish habitat has been identified, provide data on:
  - species presence, abundance and distribution
  - protected status if applicable;

- critical and sensitive habitats; and
- seasonal movements and sensitive periods.
- potential erosion issues (*e.g.*, permafrost degradation).
- a categorization of watercourses, as appropriate, and describe factors used (*e.g.* by potential issue such as physical characteristics, habitat sensitivity).
- identification of the presence of any management or protected areas for species.
- a summary of the inventory of benthos and periphyton baseline data, including sampling sites, taxon, biomass, chlorophyll contents, etc.
- incorporation of traditional knowledge and catch records from groups such as the Fisheries Joint Management Committee or the Gwich'in Renewable Resources Board. Document Aboriginal commercial and sport fishing activities in the project area.
- identification of waterbodies and watercourses used for subsistence fishing, and describe the nature of the use (*e.g.*, species, season).
- an evaluation of historical fish and habitat use. Where historical information is used, information should be verified by ground-truthing, especially in areas where there has been a known change or development since any previous surveys were conducted.

Predict and evaluate the potential effects of the project on fish habitat, including: direct removal of fish habitat, disturbance of fish habitat through chemical or physical (*e.g.*, sedimentation) changes in water quality, disturbance of fish habitat due to changes in surface and/or groundwater flows and water levels, particularly during winter, mortality of fish due to changes in water quality or altered water flows, mortality of fish through physical injury caused by operations, and mortality of fish due to harvesting.

Predict and evaluate the potential effects of the project on fish including population, abundance and diversity, breeding patterns, health, habitat, behavioral, buffer zones.

Provide a No Net Loss Plan and a Fisheries Habitat Compensation Technical Document (see Part 2 section 2.0 for references and guidance).

Identify effective mitigation measures to reduce or eliminate the potential effects of the project on fish and fish habitat.

Identify any residual effects predicted to remain after successful implementation of mitigation.

## 7.0 VEGETATION AND ECOSYSTEMS

**Provide a description of the existing vegetation and ecosystems, including, but not necessarily limited to:**

- a description of land cover classes for the study area, including maps to the standards of the NWT Land Cover Classification<sup>4</sup>. Include dominant land cover, successional stage, landscape position relative to elevation, drainage and vegetation type.
- a description of vegetation and vegetation assemblages in the project area, such as vascular plants, mosses, lichen and fungi. Describe the classification system used in this description, including Ecological Land Classification systems, where available or appropriate.
- identification and description of wetlands including bogs, fens, marshes, swamps and shallow waters, as defined in the Canadian Wetland Classification System. Identify and describe wetland functions.
- identification of rare or valued species or assemblages, and document any protected or designated species (*e.g.*, vulnerable, threatened, endangered or extirpated).
- mapping of ecosystems to district level and describe the ecosystems to an ecosection level, where data are available.
- description of predominant ecosystem processes (*e.g.*, nitrification, denitrification, detritus processing, aeration, primary and secondary production, etc) in the project area.
- documentation of historic and current human use of vegetation, including subsistence harvesting, (*i.e.* medicinal herb gathering, berry picking, forestry) in the project area, including a description of any social, cultural and economic relationship to the species or species assemblages.
- identification of locations and quantities of merchantable timber in the project area.

Predict and evaluate the potential effects of the project on vegetation, including:

- effects on species composition, productivity and abundance;
- impacts caused by the introduction of non-native species;
- impacts of any project-related toxins (*e.g.*, acidic gases).

Identify effective mitigation measures proposed to reduce or eliminate the potential effects of the project on vegetation.

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<sup>4</sup> Government of the NWT, Department of Resources, Wildlife and Economic Development, Forest Management Division. NWT Land Cover Classification Standards. Internal Documents.

Identify any residual effects predicted to remain after successful implementation of mitigation.

## **8.0 WILDLIFE AND WILDLIFE HABITAT (including migratory birds and other avifauna)**

**Provide a description of existing wildlife and wildlife habitat, including, but not necessarily limited to:**

- baseline information on wildlife species in the project area including their seasonal occurrence, relative or absolute abundance, density, distribution, biodiversity, population trends and the regional ecological, economic and human use importance of the species.
- a species inventory, by geographic area, as appropriate.
- identification of species of particular:
  - ecological importance
  - importance to subsistence harvesters
  - cultural or spiritual importance.
- identification of locally, regionally and nationally rare species, subspecies and genetically distinct populations (*e.g.*, COSEWIC<sup>5</sup>, territorial or provincially listed species, a species at the edge of its range or a subpopulation that winters in different locales than the rest of the population) potentially affected by the proposed project. For these species, identify and describe known or suitable habitat in the project area, population characteristics and dynamics, species ecology, trends, habitat requirements, movements and sensitivities.
- identification of species in the project study area that have limited occurrence outside the project area. Describe the reasons for this specificity to, or particular occurrence in, the project area (*e.g.*, biogeographic considerations or anthropogenic effects). Identify such species with known concentrations in the project area. For these species, identify and describe known or suitable habitat in the project area, population characteristics and dynamics, species ecology, trends, habitat requirements, movements and sensitivities.
- identification and description of areas of high species diversity and/or species abundance, or areas that could be of importance during periods of environmental stress (*e.g.*, drought).
- identification and description of wildlife management areas and established, proposed or potential sanctuaries or other areas in which wildlife would be protected.

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<sup>5</sup> Committee on the Status of Endangered Wildlife in Canada



- description of the habitat types, including critical habitat components, in the project study area. Quantify the abundance and diversity of habitats important to wildlife relative to other elements in the regional landscape. Document the relative availability and use of habitats in the project area compared to similar habitats in the regional landscape. Document food sources and/or feeding areas for wildlife.
- information on wildlife harvesting, including harvesting for subsistence purposes and a description of the nature of the use (*e.g.*, locations, species, season).

Predict and evaluate the potential effects of the project on wildlife (including migratory birds and other avifauna), including effects related to direct loss, alienation or modification of habitat, creation of physical barriers to movement, sensory disturbance, increases in competition, and changes in predation patterns at the species and community levels.

Predict and evaluate the potential for direct mortality of wildlife as a result of the project.

Predict and evaluate the potential for attraction of wildlife to the project area, increased hunting pressure and increased wildlife-human interactions.

Predict and evaluate the potential for impacts to subsistence harvesters.

Identify effective mitigation measures to reduce or eliminate adverse impacts on wildlife.

Identify residual impacts predicted to remain after successful implementation of proposed mitigation measures.

## 9.0 THE ECONOMY

**Provide a description of the existing economic conditions in the project area and communities, including, but not necessarily limited to:**

- income
- prices, cost of living and inflation
- industry
- economic base
- local, regional and territorial procurement characteristics and trends
- national and territorial gross domestic product (GDP)
- local government finances
- factors that influence the economy, including subsistence economy, or traditional culture of the project area and surrounding region
- socio-economic trends in the project area and surrounding region

- identify other planned major projects or planned major social or institutional changes in the project area.

Predict and describe potential project-related, direct, indirect and induced effects on the above elements. Include a discussion of the financial and economic benefit/cost of the project to the NWT and Canada, opportunities for diversification of the northern economic base, opportunities for local and regional businesses to supply goods and services to the project, competition for labour between the project and existing businesses and traditional activities, and employee migration patterns. Identify potential effects of the project on economic diversification and sustainable economic development in the project area.

Identify effective mitigation measures proposed to reduce or eliminate adverse effects and enhance beneficial effects of the project.

Identify residual impacts predicted to remain after successful implementation of mitigation measures.

## **10.0 EDUCATION, TRAINING AND EMPLOYMENT**

**Provide a description of existing education, training and employment conditions, including, but not necessarily limited to:**

- existing labour force conditions and supply.
- employment and unemployment characteristics and trends.
- education and training levels in the existing labour force.
- programs available to address education and training needs for residents in the project area.

Estimate the total labour force requirements for all phases of the project and associated impacts to labour force conditions, labour supply, and unemployment.

Document the availability and proposed use of skilled workers in the NWT to meet project requirements, including anticipated labour force recruitment from all sources (regional, territorial, national). Identify training and or certification programs anticipated or needed to address employment requirements for all phases of the project, barriers to employment, and methods to promote the advancement and retention of northern workers.

## 11.0 COMMUNITY AND GOVERNMENT INFRASTRUCTURE

**Provide a description of the existing infrastructure, including but not limited to:**

- the current conditions in communities in the project area, with respect to:
  - social, institutional and community services
  - housing
  - health services, including medevac
  - child care
  - schools
  - water and sewage facilities
  - power and fuel
  - solid waste facilities
  - housing and accommodation needs and supply
  - supply of aggregate and granular materials
  - other infrastructure components, as appropriate.

**Provide a description of the existing and planned transportation infrastructure and use in the project area, including but not limited to:**

- air
- road (permanent, seasonal)
- barge/shipping
- rail
- ports
- document current capacity and levels of use. Identify and describe any factors affecting capacity or use.

Predict and evaluate the potential effects of the proposed project on expenditures and revenues, costs and net income accruing to the federal and territorial governments.

Predict and evaluate the potential temporary and permanent effects of the proposed project on existing social, institutional and community services, and transportation facilities, services and infrastructure.

Identify effective mitigation measures to reduce or eliminate adverse effects and to enhance beneficial effects of the project on community and government infrastructure.

Identify residual effects predicted to remain after successful implementation of mitigation measures.

## 12.0 COMMUNITIES, LANGUAGE AND CULTURE

**Provide a description of existing communities, language and culture, including, but not necessarily limited to:**

- a social and demographic profile (*e.g.*, age, sex, education, ethnicity) of the communities in the project area, including trends in population.
- social cohesiveness and cultural well being of the communities in the project area and surrounding areas.
- patterns of language use, retention and loss.
- quality of community life and individual and family life in communities in the project area.
- patterns of social organization at the household and community level, including the organization of work, mutual aid and sharing.
- social relations between residents and non-residents, between men and women, among generations, and between aboriginal and non-aboriginal persons.
- current disruptions and stresses on local social structures and interaction patterns.

Predict and evaluate the potential effects of the proposed project on communities.

Predict and evaluate the potential social effects of the proposed project and the impact of these effects.

Describe the potential impacts of the project on the sustainable development of northern communities.

Identify effective mitigation measures to reduce or eliminate adverse demographic and social impacts and to enhance beneficial impacts.

Identify residual effects predicted to remain after successful implementation of mitigation measures.

### **13.0 HEALTH AND WELL BEING**

**Provide a description of existing health conditions in the project area, including, but not necessarily limited to:**

- current health conditions of populations in and around the project area, including physical health, death and disease rates, psychological, emotional, spiritual, and mental health and well-being.
- current factors affecting health and well-being in the project area.
- available health and well-being support services in the project area, including social support services such as family and children counseling and emergency services.

Predict and evaluate the potential effects of the project on health conditions and health support services.

Identify effective mitigation measures that will reduce or eliminate adverse effects and enhance beneficial effects of the project.

Identify residual effects on health and well being predicted to remain after the successful implementation of mitigation measures.

### **14.0 HISTORICAL, ARCHAEOLOGICAL, PALAEOLOGICAL, CULTURAL AND HERITAGE RESOURCES**

**Provide a description of existing historical, archaeological, palaeontological, cultural and heritage resources, including, but not necessarily limited to:**

- historical/heritage, archaeological, palaeontological and cultural resources in the project area based on existing information and heritage resource surveys conducted for the project. Document the importance of the project area with respect to these resources.
- existing cultural and heritage institutions, councils or programs (formal and informal) within communities in the project area.

Predict and evaluate the potential effects of the project on these resources and on the cultural well being of communities affected by these changes.

Identify effective mitigation measures to reduce or eliminate adverse effects and enhance beneficial effects of the project on these resources.

Identify any residual effects predicted to remain after successful implementation of mitigation measures.

## 15.0 VISUAL AND AESTHETIC RESOURCES

**Provide a description of existing visual aesthetics of the project area, including but not necessarily limited to:**

- identification and description of valued aesthetic locations and attributes within the project area and indicate the method by which these locations were identified.
- identification of the group, communities, individuals etc. who have indicated that they value these locations and attributes.
- description of any historic and current use of these locations (*e.g.*, camp sites, wilderness tours)

Predict and evaluate the potential impact of the project on visual and aesthetic resources.

Identify effective mitigation measures to reduce or eliminate adverse impacts and enhance beneficial effects of the project on these resources.

Identify any residual effects predicted to remain after successful implementation of mitigation measures.

## 16.0 LAND AND RESOURCES USE

**Provide a description of current and historic land and resource use in the project area, including but not limited to:**

- within the project area, identification and description of:
  - designated or potential parks and recreational areas
  - designated ecologically important areas (*e.g.*, as identified in the NWT Protected Areas Strategy or in the Alberta Endangered Spaces Program)
  - traditionally important areas

- seasonal and permanent camp areas (individual, work, recreational).
- an informed view of “ecologically representative areas” in the ecoregion(s) in proposed project area as defined in the NWT Protected Areas Strategy.
- identification of the land ownership and tenure and zoning/designation for lands that would be required by the proposed project.
- identification of the land use categories within the project area, as identified in relevant Community Conservation Plans in the Inuvialuit Settlement Region, or in the Proposed Gwich’in Land Use Plan and the First Draft Sahtu Land Use Plan
- reference to the relevant Inuvialuit Settlement Region Community Conservation Plan to identify local hunting and harvesting activities, and sensitive areas, species and times in the project area.
- spatial documentation of lands used by clans or families, including traditional boundaries.
- identification of other persons or properties (names and functions) or communities who have an interest in the project area and who could be affected by the proposed project (*i.e.*, domestic water users, in-stream users, authorized users, waste depositors, owners or occupiers of adjacent property, outfitters, registered trapline holders, and other rights holders).

Predict and evaluate the potential impacts of the project on existing and proposed land and resource uses and users. Describe the potential effects on sustainable use of renewable resources.

Identify effective mitigation measures to reduce or eliminate potential adverse effects and enhance beneficial effects of the project on these resources.

Identify any residual effects predicted to remain after successful implementation of mitigation.

## 17.0 CUMULATIVE EFFECTS

- Identify and assess the cumulative environmental impacts of the project in combination with past, present and reasonably foreseeable projects or activities that have been, or will be, carried out within the project area. The analysis must include:
  - regional issues of concern,
  - substantiation for selection of appropriate VECs,
  - substantiation for selection appropriate spatial and temporal boundaries for each VEC,
  - and

- identification of other projects that may affect the same VECs.

## **18.0 MONITORING AND FOLLOW-UP**

- Describe the environmental and socio-economic monitoring programs proposed for all phases of the project to ensure the effectiveness of mitigation measures. Describe the approach, rationale and how the results of monitoring programs will be used to modify or refine the mitigation measures or implementation of other plans and procedures.

## **19.0 PUBLIC<sup>6</sup> CONSULTATION**

### **Provide a description of the following:**

- the proponent's public consultation policies, objectives, programs and activities undertaken and committed.
- methods used to identify, inform and solicit input from potentially interested parties including dates of public notification and dates and locations of public meetings.
- outcomes of consultation including any additional information provided by those consulted, identification of concerns and differences in views between those consulted.
- a summary of the responses to the interested parties including a summary of the measures the proponent has taken or intends to take to resolve those concerns or an explanation of why the proponent considers no further action is required with respect to those concerns.
- the nature and results of pre-submission consultations with the communities most likely to be affected by the proposal and appropriate government authorities and other relevant parties.
- a summary of the results of consultation with hunters and Trappers' committees, the Inuvialuit Game Council, Fisheries Joint Management Committee, Wildlife Management Advisory Committee (NWT and/or North Slope as appropriate), other non-governmental organizations, federal, territorial and municipal governments.
- identification of any knowledge gaps in relation to any concerns and proposed steps to address these gaps.

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<sup>6</sup> In this context, 'public' means aboriginal groups, non-government organizations, affected communities and individuals, and the general public.



## 20.0 CONTINGENCY PLANS

**With respect to contingency plans, accidents and malfunctions, the proponent should document:**

- emergency response plans and contingency plans in place (and available) to address, for example, spills, blowouts, fire, erosion, storm surges, permafrost degradation, problem wildlife or migratory wildlife. Include a protocol for avoiding traditional or cultural activities. Describe the coordination of these plans with community emergency response plans.
- the environmental protection procedures which the proponent will use:
  - in the event of high winds, procedures to minimize wind erosion of soils;
  - in the event of extremely wet climatic conditions, procedures to minimize water erosion of soils, loss of soil structure through rutting or compaction, siltation into sensitive water courses, and damage;
  - in the event of extremely arid conditions, procedures to minimize loss of soil structure through pulverization and wind erosion;
  - in the event that construction becomes delayed, procedures to minimize scheduling conflicts with any environmentally sensitive periods that have been identified;
  - in the event of accidents or equipment malfunctions; and
  - in the event of a hydrocarbon spill during the operation of any pipeline or related facility the plan must include equipment and methods to be used to control and clean up any possible fuel spill.
- the criteria that the proponent intends to consider in order to implement the contingency plans.
- the notification process the proponent will employ to ensure the appropriate agencies are made aware when the company has determined that it is necessary to implement contingency plans.
- the procedures to be used for the clean up of any accidental release of any hazardous or toxic substance, including procedures for notifying the appropriate agencies or emergency response organizations.
- the “worst case scenario or scenarios” if environmental impact predictions prove erroneous and environmental protection measures fail.

## 21.0 RECLAMATION AND ABANDONMENT

**Provide a description of plans for reclamation, abandonment and restoration, including, but not limited to the following:**

- reclamation procedures during and after construction, including soil and reclamation material salvage and handling procedures; soil replacement and re-vegetation, re-establishment of self-sustaining topography, drainage and surface watercourses; restoration and/or replacement of habitat.
- any constraints to reclamation (e.g., timing, availability of material, and influence of process and cycles).
- the regulations, industry standards and government agreements with respect to the end of the construction phase, including any plans for mitigating social and economic impacts related to the end of this phase.
- a comprehensive conceptual plan for the abandonment and reclamation for the closure of the project facilities.
- the regulations, industry standards and government agreements that are required with respect to the closure phase of the project including any plans for mitigating social and economic impacts of closure.
- the restoration concepts and objectives, including proposed end land use and other factors necessary for the abandonment and restoration plan to be implemented, and consideration of pre-development information related to land capability, vegetation, forest productivity, recreation, wildlife, fisheries, birds, aesthetics and land use.
- methods to be used for the clean-up of any contaminants found on site.
- the methods to be used for the disposal of all equipment and all wastes, including specific disposal sites.
- present day costs associated with closure and reclamation. Specify any reclamation modeling and what models have been used to arrive at proposed costs for reclamation.

## 22.0 SOURCES OF INFORMATION

The following documents were used to prepare the CIR.

Canadian Environmental Assessment Agency. 1997. *Guide to the Preparation of a Comprehensive Study for Proponents and Responsible Authorities*. CEAA Web Site. URL: [http://www.ceaa.gc.ca/0011/0001/0003/comps\\_e.htm](http://www.ceaa.gc.ca/0011/0001/0003/comps_e.htm).

Canadian Environmental Assessment Agency. 1997. *Appendix C - Suggested Content for a Comprehensive Study Report, Comprehensive Study Guide*. CEAA Web Site. URL: [http://www.ceaa-acee.gc.ca/0011/0001/0003/appendices\\_e.htm](http://www.ceaa-acee.gc.ca/0011/0001/0003/appendices_e.htm).

Canadian Environmental Assessment Agency. 1999. *Cumulative Effects Assessment Practitioners Guide*. CEAA Web Site. URL: [http://www.ceaa-acee.gc.ca/0011/0001/0004/index\\_e.htm](http://www.ceaa-acee.gc.ca/0011/0001/0004/index_e.htm).

Canadian Environmental Assessment Agency. 1999. *Operational Policy Statement March 1999 OPS-EPO/3- 1999 Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act*. CEAA Web Site. URL: [http://www.ceaa-acee.gc.ca/0011/0002/cea\\_ops\\_e.htm](http://www.ceaa-acee.gc.ca/0011/0002/cea_ops_e.htm).

Canadian Wildlife Service. No date. *Migratory Birds Environmental Assessment Guideline - Information Requirements*. CWS Web Site. URL: [http://www.cws-scf.ec.gc.ca/publications/eval/mig/info\\_e.cfm](http://www.cws-scf.ec.gc.ca/publications/eval/mig/info_e.cfm).

Canadian Wildlife Service. No date. *Environmental Assessment Guideline for Forest Habitat of Migratory Birds – Information Requirements*. CWS Web Site. URL: [http://www.cws-scf.ec.gc.ca/publications/eval/forest/info\\_e.cfm](http://www.cws-scf.ec.gc.ca/publications/eval/forest/info_e.cfm).

Department of Fisheries and Oceans Canada. No date. *Fish Habitat Management Program What We Do*. DFO Web Site. URL: [http://www.dfo-mpo.gc.ca/habitat/activities\\_e.htm](http://www.dfo-mpo.gc.ca/habitat/activities_e.htm).

Department of Fisheries and Oceans Canada. No date. *Fish Habitat Management Program - Regulatory Activity*. URL: [http://www.dfo-mpo.gc.ca/habitat/pa\\_regulatory\\_e.htm](http://www.dfo-mpo.gc.ca/habitat/pa_regulatory_e.htm).

Department of Fisheries and Oceans Canada. No date. *Application for Authorization for Works or Undertakings Affecting Fish Habitat*. DFO Web Site. URL: [http://www.dfo-mpo.gc.ca/habitat/media/authorization\\_application\\_form.pdf](http://www.dfo-mpo.gc.ca/habitat/media/authorization_application_form.pdf).

Department of Fisheries and Oceans Canada – Canadian Coast Guard. 1985. *Navigable Waters Protection Act*. CCG Web Site. URL: <http://www.tc.gc.ca/actsregs/nwpa/english/nwpa.htm>.

EBA Engineering Consultants Ltd. 2002. *Guidelines for Public Consultation for Development Projects Prior to Submitting an Application to the Mackenzie Valley Land and Water Board*. Prepared for the MVLWB. MVLWB Web Site.

URL:

<http://www.mvlwb.com/Public%20Consultation%20Guidelines%20March%205%202002.pdf>.

Environmental Impact Review Board. 1994. *Guidelines for Impact Assessment Methods to Be Used Before the Environmental Impact Review Board*. EIRB, Inuvik, NT.

Environmental Impact Review Board. 2001. *Environmental Impact Review Board. Operating Procedures*. Joint Secretariat – Inuvialuit Renewable Resource Committees. Inuvik, NT.

Gwich'in Land and Water Board. No date. *GSA Water License & Land Use Permit Application Process*. GLWB Web Site. URL: <http://www.glwb.com/guide3.pdf>.

Health Canada. No date. *Office of the Environmental Health Assessment*. Health Canada Web Site. URL: <http://www.hc-sc.gc.ca/ehp/ehd/oeha/index.htm>.

Indian and Northern Affairs Canada. No date. *Guide for Completing the Application for a Land Use Permit Pursuant to the Territorial Land Use Regulations*. INAC Web Site.

URL: [http://www.ainc-inac.gc.ca/nt/lad/how\\_e.html](http://www.ainc-inac.gc.ca/nt/lad/how_e.html).

Indian and Northern Affairs Canada. No date. *Application for a Land Use Permit*. INAC Web Site. URL: [http://www.ainc-inac.gc.ca/nt/lad/permit\\_e.pdf](http://www.ainc-inac.gc.ca/nt/lad/permit_e.pdf).

Indian and Northern Affairs Canada. No date. *Application for a Quarrying Permit*. INAC Web Site. URL: [http://www.ainc-inac.gc.ca/nt/lad/quarry\\_e.pdf](http://www.ainc-inac.gc.ca/nt/lad/quarry_e.pdf).

Indian and Northern Affairs Canada. No date. *Application for Crown Land*. INAC Web Site. URL: [http://www.ainc-inac.gc.ca/nt/lad/crown\\_e.pdf](http://www.ainc-inac.gc.ca/nt/lad/crown_e.pdf).

Inuvialuit Land Administration. 2002 *Consolidated Information Requirements-Northern Gas Development and Pipeline*. ILA, Tuktoyaktuk, NT.

Kavik-Axys Inc. 2001. *Cumulative Effects Assessments in the Inuvialuit Settlement Region: A Guide for Proponents, Draft Two*. Prepared for the Environmental Impact Screening Committee and Environmental Impact Review Board. Inuvik, NT. Axys Web Site.

URL: [http://www.axys.net/library/KA19\\_Proponents\\_GuideDraft2\\_web.pdf](http://www.axys.net/library/KA19_Proponents_GuideDraft2_web.pdf).

Mackenzie Valley Environmental Impact Review Board. 1999. *Environmental Assessment Terms of Reference of the BHP Diamonds Inc. Beartooth, Pigeon and Sable Kimberlite Pit Mine Extension*. MVEIRB, Yellowknife, NT. MVEIRB Web Site.

URL: <http://www.mveirb.nt.ca/Registry/EABhp/bhptor2.pdf>.

Mackenzie Valley Environmental Impact Review Board. 2001. *Terms of Reference and Work Plan for the Environmental Assessment of the De Beers Canada Mining Inc. Snap Lake Project*. MVEIRB, Yellowknife, NT. MVEIRB Web Site.

URL: <http://www.mveirb.nt.ca/Registry/EADeBeers/SnapLakeToR.pdf>.

Mackenzie Valley Environmental Impact Review Board. 2001. *Generic Terms of Reference for the Environmental Assessment of Oil and Gas Developments in the Mackenzie Valley*. MVEIRB, Yellowknife, NT.

Mackenzie Valley Land and Water Board. 2000. *Information Requirements for a Development Application to the Mackenzie Valley Land and Water Board*. MVLWB, Yellowknife, NT. MVLWB Web Site. URL: <http://www.mvlwb.com/GuideInfo.pdf>.

Mackenzie Valley Land and Water Board. 2001. *Guide to the Mackenzie Valley Land and Water Board*. MVLWB, Yellowknife, NT. MVLWB Web Site. URL: <http://www.mvlwb.com/GuideMVLWB.pdf>.

Mackenzie Valley Land and Water Board. 2001. *Guide for Completing Land Use Applications to the Mackenzie Valley Land and Water Board*. MVLWB, Yellowknife, NT. MVLWB Web Site. URL: <http://www.mvlwb.com/GuideLandApp.pdf>.

Mackenzie Valley Land and Water Board. 2001. *Guide for Completing Water Use Applications to the Mackenzie Valley Land and Water Board*. MVLWB, Yellowknife, NT. MVLWB Web Site. URL: <http://www.mvlwb.com/GuideWaterApp.pdf>.

National Energy Board. 1995. *Guidelines for Filing Requirements*. NEB Web Site. URL: [http://www.neb-one.gc.ca/pubs/actsregs/gdfileq\\_e.htm](http://www.neb-one.gc.ca/pubs/actsregs/gdfileq_e.htm).

Northern Pipeline Environmental Impact Assessment and Regulatory Chair's Committee. 2002. *Cooperation Plan of the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories*. MVEIRB Web Site. URL: [http://www.mveirb.nt.ca/MVNews/coop\\_plan.pdf](http://www.mveirb.nt.ca/MVNews/coop_plan.pdf).

Northwest Territories Water Board. 2001. *Water Licensing in the Inuvialuit Settlement Region, Northwest Territories: Summary of Procedures and Information Requirements*. NWTWB, Yellowknife, NT.

Sahtu Land and Water Board. 2001. *Obtaining A Water License*. SLWB Web Site. URL: <http://www.slwb.com/water.html>.

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URL: <http://oilandgasguides.com/aguides.htm>.

Transport Canada. No date. *How to Apply for a Permit Equivalent Level of Safety*. Transport Canada Web Site. URL: <http://www.tc.gc.ca/tdg/permits.htm>.

## **Part 2**

# **Guidance on Regulatory Applications for a Northern Gas Pipeline through the Northwest Territories**

## 1.0 INTRODUCTION

The agencies with regulatory responsibilities (the Regulators) for field developments and a proposed natural gas pipeline through the Mackenzie Valley have agreed to coordinate their review and hearing activities and to share resources to contribute to a timely and efficient review of the proposed project. Details of the manner in which these resources will be organized and shared are being developed through the Regulators' Agreement outlined in section 3.5 of the Cooperation Plan. It is anticipated that the Regulators' Agreement will be finalized after receipt of a complete PIP.

The baseline information requirements of the Regulators have been incorporated into Part 1 of the CIR. The information in Part 2 of the CIR deals with the specific certificates, permits, licences and authorizations needed for the project. These requirements cannot be consolidated as each regulator must receive the specific applications it is required to consider based on their mandate and legislated responsibilities.

The list that follows provides a guide to sources of information about the various certificates, permits, licences and authorizations and, in some cases, to additional guidance on the information required.

Proponents are encouraged to discuss specific requirements and seek additional guidance from the various regulators as they proceed to prepare applications.



## **2.0 LIST OF INFORMATION SOURCES AND GUIDANCE ON CERTIFICATES, REGULATORY PERMITS, LICENCES AND AUTHORIZATIONS ANTICIPATED FOR A NORTHERN NATURAL GAS PIPELINE THROUGH THE MACKENZIE VALLEY**

### **Department of Fisheries and Oceans Canada – Fisheries Act Authorizations and Navigable Waters Protection Act Permits**

Fisheries and Oceans Canada. No date. Application for Authorization for Works or Undertakings Affecting Fish Habitat. DFO Web Site.

URL: [http://www.dfo-mpo.gc.ca/habitat/media/authorization\\_application\\_form.pdf](http://www.dfo-mpo.gc.ca/habitat/media/authorization_application_form.pdf).

Fisheries and Oceans Canada - Canadian Coast Guard - Navigable Waters Protection Act Permits

Navigable Waters Protection Act

URL: <http://laws.justice.gc.ca/en/N-22/80616.html>.

### **Environment Canada, Canadian Wildlife Service – permits for activities inside Migratory Bird Sanctuaries**

Migratory Bird Sanctuary Regulations

URL: [http://www.cws-scf.ec.gc.ca/legislations/laws1\\_e.cfm](http://www.cws-scf.ec.gc.ca/legislations/laws1_e.cfm).

### **Environment Canada, Environmental Protection Branch – Ocean Dumping Permits**

URL: <http://www3.ec.ca/EnviroRegs/Eng/SearchDetail.cfm?intReg=172>.

### **Government of the Northwest Territories – permits and licences that may be required through legislation including, but not limited to, land administration in and around communities, the cutting of forests, worker safety, environmental protection and research**

Legislation

URL: <http://www.lex-nt.ca/reg/>.

Environmental Protection – Act, Regulations, Guidelines

URL: <http://www.gov.nt.ca/RWED/eps/leg.htm>

Lands in and around Communities – Land Administration

URL: <http://www.maca.gov.nt.ca/about/comops/lands.html>.

Research Permits

URL: <http://www.auresint.nt.ca/licen.htm> (general);

<http://pwnhc.learnnet.nt.ca/policy/herpro.htm> (archaeological);

<http://www.nwtwildlife.rwed.gov.nt.ca/legislation/legislation.htm> (wildlife)

Safety

URL: <http://www.wcb.nt.ca/home.htm>.

**Gwich'in Land and Water Board – Water licences and land use permits in the Gwich'in Settlement Region**

Gwich'in Land and Water Board. No date. *GSA Water License & Land Use Permit Application Process*. GLWB Web Site. URL: <http://www.glwb.com/guide3.pdf>.

**Indian and Northern Affairs Canada – land use permits on Crown Land in the Inuvialuit Settlement Region; quarry permits in the NWT**

Indian and Northern Affairs Canada. No date. *Guide for Completing the Application for a Land Use Permit Pursuant to the Territorial Land Use Regulations*. INAC Web Site. URL: [http://www.ainc-inac.gc.ca/nt/lad/how\\_e.html](http://www.ainc-inac.gc.ca/nt/lad/how_e.html).

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**Mackenzie Valley Land and Water Board – Water licences and land use permits in the Mackenzie Valley**

EBA Engineering Consultants Ltd. 2002. *Guidelines for Public Consultation for Development Projects Prior to Submitting an Application to the Mackenzie Valley Land and Water Board*. Prepared for the MVLWB. MVLWB Web Site. URL: <http://www.mvlwb.com/Public%20Consultation%20Guidelines%20March%205%202002.pdf>.

Mackenzie Valley Land and Water Board. 2000. *Information Requirements for a Development Application to the Mackenzie Valley Land and Water Board*. MVLWB, Yellowknife, NT. MVLWB Web Site. URL: <http://www.mvlwb.com/GuideInfo.pdf>.

Mackenzie Valley Land and Water Board. 2001. *Guide to the Mackenzie Valley Land and Water Board*. MVLWB, Yellowknife, NT. MVLWB Web Site. URL: <http://www.mvlwb.com/GuideMVLWB.pdf>.

Mackenzie Valley Land and Water Board. 2001. *Guide for Completing Land Use Applications to the Mackenzie Valley Land and Water Board*. MVLWB, Yellowknife, NT. MVLWB Web Site. URL: <http://www.mvlwb.com/GuideLandApp.pdf>.

Mackenzie Valley Land and Water Board. 2001. *Guide for Completing Water Use Applications to the Mackenzie Valley Land and Water Board*. MVLWB, Yellowknife, NT. MVLWB Web Site. URL: <http://www.mvlwb.com/GuideWaterApp.pdf>.

**National Energy Board - Certificate of Public Convenience and Necessity (s 52)**

National Energy Board. 1995. *Guidelines for Filing Requirements*. NEB Web Site. URL: [http://www.neb-one.gc.ca/pubs/actsregs/gdfilreq\\_e.htm](http://www.neb-one.gc.ca/pubs/actsregs/gdfilreq_e.htm).

**National Energy Board – Development Plan and Oil and Gas Authorizations under Canada Oil and Gas Operations Act**

Canada Oil and Gas Operations Regulations --- SOR/83-149  
URL: <http://laws.justice.gc.ca/en/O-7/SOR-83-149/index.html>.

**Northwest Territories Water Board – water licences in the Inuvialuit Settlement Region**

Northwest Territories Water Board. 2001. *Water Licensing in the Inuvialuit Settlement Region, Northwest Territories: Summary of Procedures and Information Requirements*. NWTWB, Yellowknife, NT.

**Sahtu Land and Water Board – water licences and land use permits in the Sahtu Settlement Region**

Sahtu Land and Water Board. 2001. *Obtaining A Water License*. SLWB Web Site. URL: <http://www.slwb.com/water.html>.

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