



National Energy
Board

Office national
de l'énergie

National Energy Board Report

NOVA Gas Transmission Ltd.

GH-001-2012

January 2013

Facilities

Canada

National Energy Board Report

In the Matter of

NOVA Gas Transmission Ltd.

Application dated 14 October 2011 for the
Northwest Mainline Komie North Extension

GH-001-2012

January 2013

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Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* (NEB Act or Act) and the Regulations made thereunder: and

IN THE MATTER OF an application dated 14 October 2011 filed with the National Energy Board by NOVA Gas Transmission Ltd. under file OF-Fac-Gas-N081-2011-05 02 for a Certificate of Public Convenience and Necessity under section 52 of the *National Energy Board Act* to construct and operate the Northwest Mainline Komie North Extension Project consisting of approximately 97 kilometers of 914 mm outside diameter pipe located 110 kilometers north of Fort Nelson, British Columbia and 33 kilometers of 1 219 mm outside diameter pipe located approximately 76 kilometers northwest of Manning, Alberta and an order, pursuant to section 58 of the *National Energy Board Act*, exempting NOVA Gas Transmission Ltd. from the requirements of subsections 31(c), 31(d) and section 33 of the Act with respect to borrow pits for hydrostatic testing purposes, stockpile sites, contractor yards, construction camps and the Fortune Creek meter station and associated access road.

IN THE MATTER OF National Energy Board Hearing Order GH-001-2012 dated 24 January 2012;

HEARD initially in Fort Nelson, British Columbia on 10 and 11 October 2012;

BEFORE:

R.R. George	Presiding Member
R.D. Vergette	Member
A. Scott	Member

Appearances

Participants

Witnesses

S. Duncanson	NOVA Gas Transmission Ltd.	D. Schultz D. Madden A. Parise H. Bishop W. Lewis A. Lees M. Preston M. Scoular
J. Tate	Fort Nelson First Nation	K. Dickie L. Lower A. MacDonald
R. Reiter	Acho Dene Koe First Nation	Chief Harry Deneron
M. Haug P. Johnston	National Energy Board	

HEARD in Calgary, Alberta on 15, 16, 17, 18, 19, 22, 23 and 24 October 2012;

BEFORE:

R.R. George	Presiding Member
R.D. Vergette	Member
A. Scott	Member

Appearances

Participants

Witnesses

S. Denstedt
S. Duncanson

NOVA Gas Transmission Ltd.

S. Clark
D. Murray
M. Ritsch
D. Schutlz

N. Schultz

Canadian Association of Petroleum Producers

R. Fairbairn

K. Johnston

BP Canada Energy Company

F. Weisberg
S. Merrick

Export Users Group

R. Cox
W. Donahue
P. Pyron

J. Smellie

FortisBC Energy Inc.

C. Des Brisay
C. Johnson
J. Makhholm

B. Roth

Quicksilver Resources Canada Inc.

D. Burnie

Shell Canada Energy

D. Davies
R. Kolber

Westcoast Energy Inc., carrying on business
as Spectra Energy Transmission

D. Rae
B. Bissett
C. Cicchetti
R. Priddle

D. Rae

Acho Dene Koe First Nation

C. King

Alberta Department of Energy

M. Haug
P. Johnston

National Energy Board

Chapter 1

Summary of Recommendation

1.1 The Recommendation

The National Energy Board (Board or NEB) recommends that a Certificate of Public Convenience and Necessity (Certificate) should be issued for the Chinchaga Section of the Northwest Mainline Komie North Extension (Project). The Board recommends that a Certificate should not be issued for the Komie North Section. The *National Energy Board Report* (NEB Report or Report) sets out the reasons for this recommendation.

1.2 Section 52 of the National Energy Board Act

Subsection 52(1) of the *National Energy Board Act* (NEB Act or Act) states that the Board shall prepare a report setting out the Board's recommendation, and the Board's reasons for that recommendation, as to whether or not a certificate of public convenience and necessity should be issued for all or any portion of a pipeline.

Regardless of the recommendation that the Board makes, the Board's report must set out all the terms and conditions considered necessary or desirable in the public interest to which the certificate will be subject if the Governor in Council were to direct the Board to issue the certificate. The Board's recommendation may include terms and conditions relating to when the certificate or portions or provisions of it are to come into force.

Subsection 52(2) of the NEB Act sets out the considerations the Board may have regard to in making its recommendation. It reads:

In making its recommendation, the Board shall have regard to all considerations that appear to it to be directly related to the pipeline and to be relevant, and may have regard to the following:

- a) the availability of oil, gas or any other commodity to the pipeline;
- b) the existence of markets, actual or potential;
- c) the economic feasibility of the pipeline;
- d) the financial responsibility and financial structure of the applicant, the methods of financing the pipeline and the extent to which Canadians will have an opportunity to participate in the financing, engineering and construction of the pipeline; and
- e) any public interest that in the Board's opinion may be affected by the issuance of the certificate or the dismissal of the application.

1.3 Key Conclusions in the Board’s Recommendation

Table 1-1 summarizes the Board’s conclusions with respect to the issues that it assessed. Where the Board has reached a conclusion of Acceptable, that conclusion is based upon the implementation of the recommended terms and conditions that are described in the various chapters of this Report and set out in Appendices III, IV, V and VI.

Appendix IV contains the Board’s recommended terms and conditions with respect to the Komie North Section. Condition 17 is about the Board’s conclusions of Inappropriate and Unacceptable for the appropriateness of NGTL’s proposed toll treatment, economic feasibility and commercial impacts to others. This condition is discussed in the Views of the Board in Chapter 4. Should the Governor in Council direct the Board to issue a Certificate with respect to the Komie North Section, the Board considers it necessary for Condition 17 in Appendix IV to be satisfied.

The List of Issues for the hearing included the issue of the appropriateness of NOVA Gas Transmission Ltd.’s (the Applicant, NGTL or the Company) proposed toll treatment for the Project application. The Board concludes that although the proposed toll treatment is appropriate for the Chinchaga Section, the proposed toll treatment is inappropriate for the Komie North Section.

NGTL’s evidence did not provide any alternate toll treatment for the Board to consider. Given the Board’s conclusion with respect to the toll treatment proposed by NGTL for the Komie North Section, and that economic feasibility is based upon that toll treatment, the Board was not persuaded that the Komie North Section was economically feasible.

The Board also concluded that approval of the Komie North Section, as proposed, would have negative commercial impacts on other parties and the need for the Komie North Section is uncertain.

Given the Board’s conclusion that the proposed toll treatment is appropriate for the Chinchaga Section, the Board was able to assess economic feasibility for that Section, and concludes that it is acceptable.

Table 1-1 Summary of Conclusions

Assessed Issues	Chinchaga Section	Komie North Section
Need for the Facilities	Acceptable	Uncertain
Appropriateness of NGTL’s Proposed Toll Treatment	Appropriate	Inappropriate
Economic Feasibility	Acceptable	Unacceptable
Commercial Impacts to Others	Acceptable	Unacceptable
Facilities	Acceptable	Acceptable

Assessed Issues	Chinchaga Section	Komie North Section
Safety, Security and Emergency Preparedness and Response Programs	Acceptable	Acceptable
Public Consultation	Acceptable	Acceptable
Lands	Acceptable	Acceptable
Aboriginal Matters	Acceptable	Acceptable
Socio-Economic Matters	Acceptable	Acceptable
Environment	Acceptable	Acceptable

The Report constitutes our recommendation in respect of the application considered by the Board in the GH-001-2012 proceeding.



R.R. George
Presiding Member



R.D. Vergette
Member



A. Scott
Member

Calgary, Alberta
January 2013

Chapter 2

Introduction

2.1 The Application

NGTL requests a Certificate to construct and operate the Project pursuant to section 52 of the NEB Act. NGTL also requests an order under section 58 of the NEB Act exempting NGTL from the requirements of subsections 31(c), 31(d) and section 33 of the Act with respect to borrow pits for hydrostatic testing purposes, stockpile sites, contractor yards, construction camps and the Fortune Creek meter station and associated access road. The Project would extend and expand the Alberta System by approximately 130 kilometres (km) of pipeline at two locations in northwestern Alberta (AB) and northeastern British Columbia (BC). The Project would receive and transport natural gas supply from the Horn River Basin (HRB) and Cordova Embayment areas of BC. An estimated 79 km of the proposed route for the Project is located contiguous to or alongside existing pipeline right-of-way (RoW). Approximately 51 km of the pipeline is to be installed in non-contiguous RoW. Figure 2-1 illustrates the applied-for general route for the Project.

In its 14 October 2011 application, NGTL proposed to begin clearing of the RoW in January 2013, subject to regulatory approval. The temporary construction camps and stockpile sites were scheduled for construction beginning in August 2013 and construction of the Project would occur primarily in the winter of 2013/2014. The in-service date for the Project would be 1 April 2014.

On 23 July 2012, NGTL submitted a letter that informed the Board and all interested parties of a recent development in relation to the construction schedule for the Project. NGTL stated that the contracted shipper for the Komie North Section requested a delay which would see construction of that section delayed by one year. However, the in-service date for the Chinchaga Section would not change.

An update on NGTL's construction schedule provided by NGTL on 29 August 2012 stated that, subject to regulatory approval, the first of three phases of clearing for the Komie North Section would commence in November 2013. Construction of the temporary Komie North construction camp would commence April 2014, with pipeline construction beginning in November 2014. Construction for the borrow pits for the Chinchaga Section would begin in April 2013 and the construction of the Chinchaga pipeline would commence in November 2013.

2.1.1 Project Facilities and Location

The proposed Project is comprised of the following major components:

Horn River Mainline (Komie North Section)

The Komie North Section is an extension to the Horn River Mainline and includes approximately 97 km of 914 millimetres (mm) nominal pipe size (NPS 36) outside diameter (OD) pipe and related facilities. The route of this section would be from the Horn River Mainline (Cabin Section) at d-64-J/94-P-4 in BC to the proposed Fortune Creek meter station, which would be located at c-55-A/94-O-15.

The Chinchaga Lateral Loop No. 3 (Chinchaga Section)

The Chinchaga Section is a pipeline loop of approximately 33 km of 1 219 mm (NPS 48) pipe and related facilities between interconnections adjacent to both the Chinchaga meter station, located at NE 13-96-5 W6M and the Meikle River compressor station located at NE 26-94-2 W6M.

2.2 GH-001-2012 Hearing Process

2.2.1 NEB Hearing Order and Oral Hearing Process

On 24 January 2012, the Board issued the GH-001-2012 Hearing Order, which established part of the process for the Board's consideration of the application.

The Hearing Order included the List of Issues that the Board proposed for consideration during its assessment of NGTL's application. The Board issued a revised List of Issues on 20 March 2012. The revised List of Issues is included in Appendix II of the Report.

On 26 March 2012, the Board issued the Amended Hearing Order which provided additional information regarding the GH-001-2012 hearing process, including filing deadlines and the date for the commencement of the oral hearing. On 6 June 2012, the Board issued a letter regarding the location of the public hearing.

On 27 July 2012, in response to requests from several parties, the Board established a new schedule for the oral portion of the public hearing. The oral portion of the hearing began on 10 October 2012 in Fort Nelson, BC and ended on 24 October 2012 in Calgary, AB. The evidentiary portion of the GH-001-2012 proceeding closed on 24 October 2012.

2.2.2 Major Projects Management Office

In 2008, the federal government established the Major Projects Management Office (MPMO) to improve the performance of the Canadian regulatory system for major natural resource projects. An important part of the MPMO's work is to provide overarching project management and accountability for resource projects such as this Project. With respect to Aboriginal Crown consultation for the Project, the MPMO has indicated that the government will rely on the

Board's process, to the extent possible, to discharge any Crown duty to consult Aboriginal groups.

2.2.3 Participant Funding

The NEB administers a Participant Funding Program (PFP) which provides financial assistance to support the timely and meaningful engagement of individuals, Aboriginal groups, landowners, incorporated non-industry not-for-profit organizations, or other interest groups who seek to intervene in the NEB's oral hearing process for facilities applications.

On 25 May 2011, the NEB made available \$75 000 under its PFP in order to facilitate participation in the regulatory process for the Project. The deadline to submit an application for funding was 20 July 2011. By that deadline, one application was received and funding was awarded.

More details on the Board's allocation of funds under the PFP for the Project can be found at the following link:

<http://www.neb-one.gc.ca/clf-nsi/rthnb/pblcprtctn/prtcpntfndngprgrm/lctnfnvntg-eng.html>

2.3 NEB Report GH-001-2012

2.3.1 Jobs, Growth and Long-term Prosperity Act

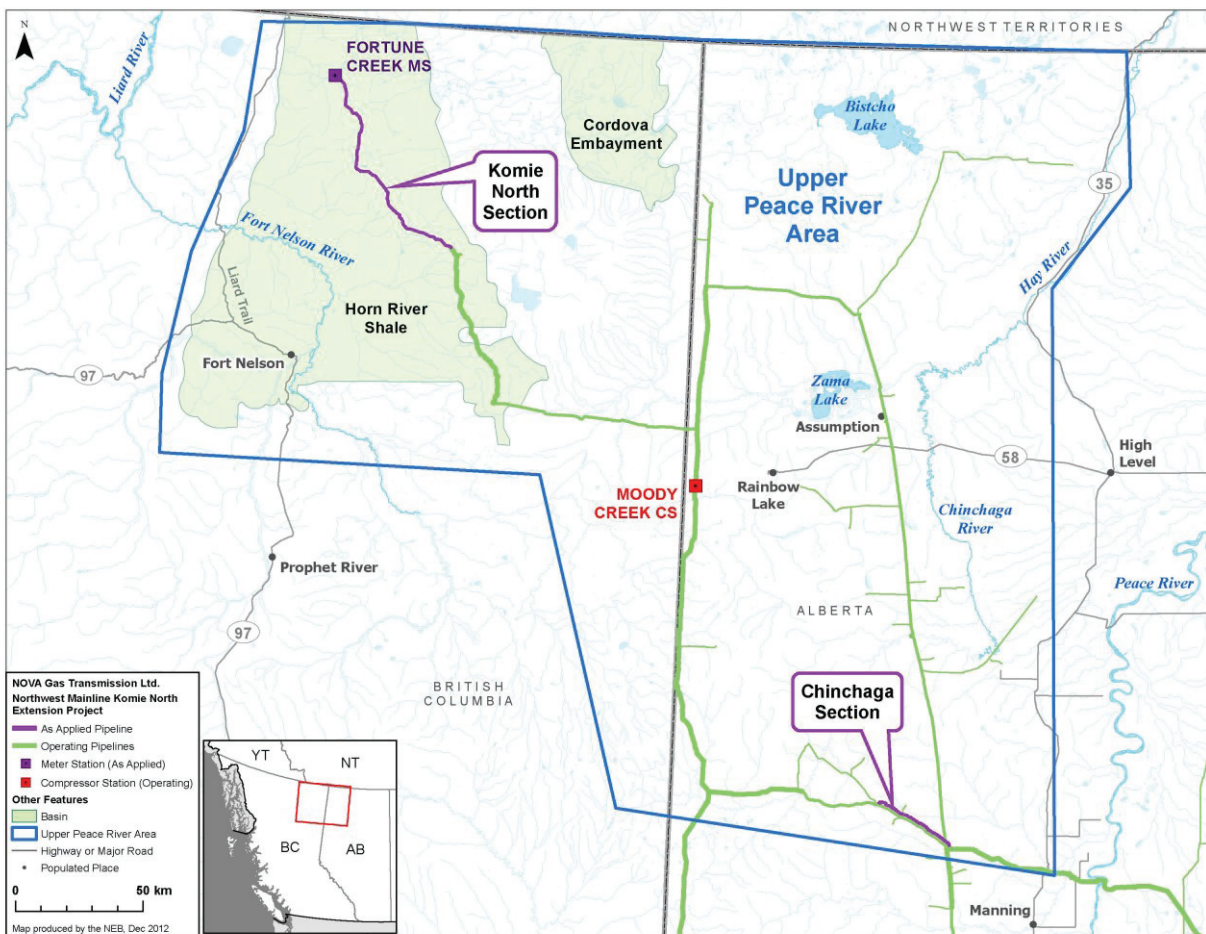
On 6 July 2012, portions of the *Jobs, Growth and Long-term Prosperity Act* (JGLP Act) came into force, including legislative changes to the NEB Act and enacting the *Canadian Environmental Assessment Act 2012* (CEA Act 2012).

2.3.2 Environmental Assessment

On 8 April 2011, NGTL filed a Project Description with the NEB regarding the proposed Project. This action initiated the Environmental Assessment (EA) process under the former *Canadian Environmental Assessment Act 1992* (CEA Act 1992), including the registration of the Project on the Canadian Environmental Assessment Registry on 20 April 2011 (former registry number 11-01-61860).

Following the repeal of the CEA Act 1992 on 6 July 2012, the Project is not a designated project under the CEA Act 2012. Notwithstanding this substantive change to legislation, the Board proceeded with fulfilling its environmental assessment duties for the Project under the NEB Act. Under the NEB Act, the Board is required to consider matters of public interest as they may be affected by the granting of an application. The Board has assumed a mandate for environmental protection as a component of the public interest and assesses applications based on environmental information requirements specified in Chapter 4 of the NEB Filing Manual. The Environmental Assessment Report (EA Report) is included in Appendix VII.

Figure 2-1 Northwest Mainline Komie North Extension – Proposed General Route Map



Source: NGTL Northwest Mainline Komie North Extension Application, [A2F4J3](#)

Chapter 3

Need for the Facilities

In Chapter 1, the Summary of Recommendation sets out the considerations the Board may have regard to in making its recommendation.

In making its assessment on the economic feasibility of the Project, the Board assessed the need for the Project. As a first step, the Board considered the supply of natural gas that will be available for transportation on the Project, and the availability of adequate markets to receive natural gas delivered by the Project.

The Board also considered the appropriateness of NGTL's proposed toll treatment for the Project. This is addressed in Chapter 4, NGTL's Proposed Toll Treatment.

The Board then considered the likelihood of the facilities being used at a reasonable level over the Project's economic life and the likelihood of tolls being paid, taking into account transportation contracts, the selection of design capacity and the Applicant's ability to finance the construction and ongoing operation and maintenance of the pipeline and facilities in Chapter 5. Additional commercial matters relevant to the Board's public interest determination are set out in Chapter 6.

This approach to assessing economic feasibility is consistent with the Board's long standing practice as set in Maritimes and Northeast Pipeline Management, GH-4-99 at page 10. In that decision, the Board stated:

The Board evaluates the economic feasibility of gas pipeline facilities by determining the likelihood of the facilities being used at a reasonable level over their economic life and the likelihood of demand charges being paid.

A determination of economic feasibility normally includes, among other factors, the availability of long-term gas supply, the long-term outlook for gas demand in the markets to be served and the contractual commitments underpinning the proposal.

3.1 Supply

Views of NGTL

NGTL submitted that the proposed facilities would be supported by three sources of supply:

- shale gas from the HRB in BC;
- shale gas from the Cordova Embayment in BC; and
- conventional gas from the Upper Peace River area in BC and Alberta.

The three supply areas and their location relative to the proposed facilities are identified in Figure 2-1, which is found at the end of the previous chapter.

NGTL stated that volumes expected to flow on the Komie North Section would be sourced from the HRB. Volumes from the Cordova Embayment would be allocated to the existing Bootis Hill meter station in northwest Alberta. Conventional production would be sourced in the Upper Peace River Area and transported on existing Alberta System infrastructure. Volumes from all three production regions are expected flow on the Chinchaga Section.

Resource Potential and Marketable Gas Assessment

Table 3-1 summarizes NGTL’s estimates of the original gas in place (OGIP) and marketable gas volumes associated with the HRB and Cordova Embayment.

Table 3-1 Estimated Unconventional Natural Gas Potential in the HRB and Cordova Embayment

Undiscovered shale gas		OGIP		Marketable gas	
		10 ¹² m ³	Tcf	10 ¹² m ³	Tcf
	Horn River Basin	13.9	490	2.9	104
	Cordova Embayment	2.2	77.0	0.5	17.5

NGTL submitted that there was an enormous amount of gas in the HRB. This was a widely-held opinion, including commercial intervenor witnesses that opposed the Komie North Section. NGTL noted that its estimate of 13.9 10¹²m³ (490 Tcf) of OGIP compares closely with the NEB’s most recent estimate of between 10.4 10¹²m³ (372 Tcf) and 14.9 10¹²m³ (529 Tcf) of OGIP.

The conventional reserves and undiscovered conventional resources associated with the Upper Peace River area are summarized in Table 3-2.

Table 3-2 Estimated Conventional Gas Potential – Upper Peace River Area

Source	Remaining Gas In Place		Marketable Gas	
	10 ¹² m ³	Tcf	10 ¹² m ³	Tcf
Discovered	0.116	4.1	0.071	2.5
Undiscovered	0.328	11.6	0.201	7.1
Total	0.445	15.7	0.275	9.7

*Volumes converted to m³ by dividing by the Tcf total by 35.301; numbers may not add up to total due to rounding

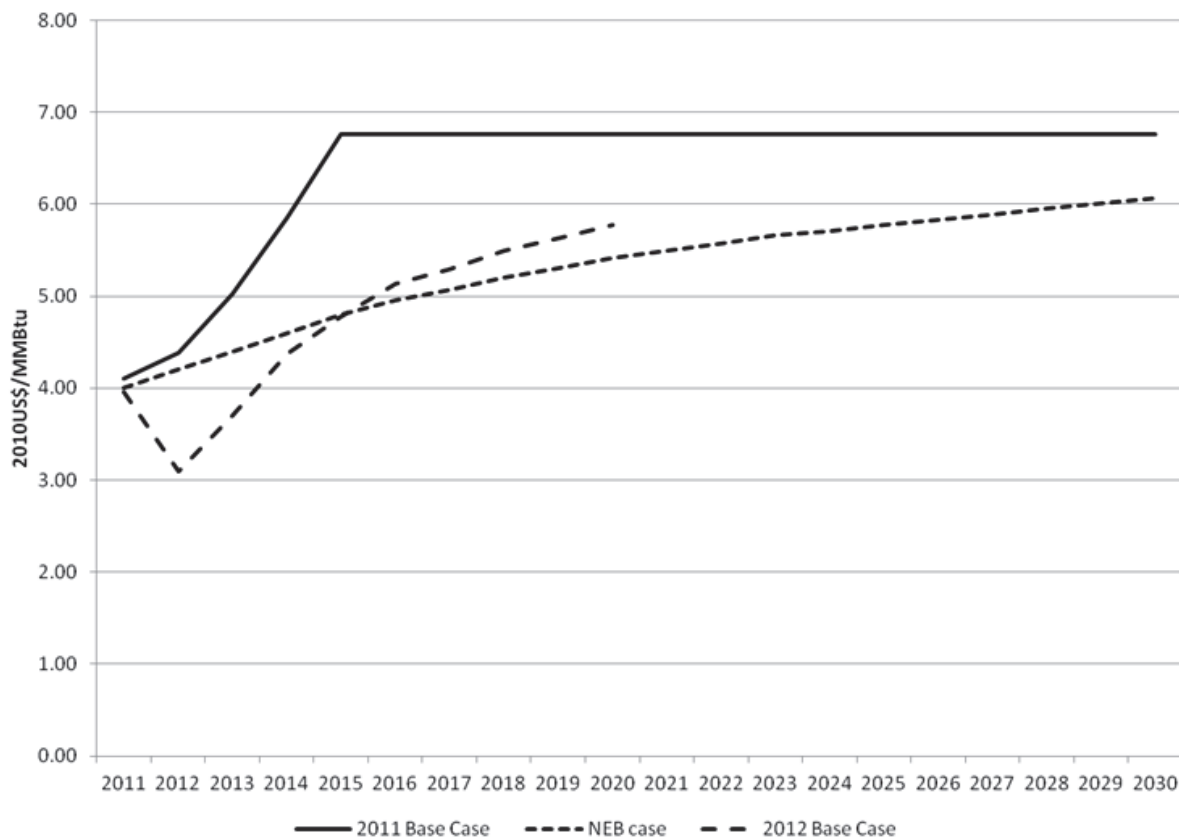
Horn River Basin Productive Capacity

Over the course of the proceeding, NGTL submitted three production forecasts for the HRB based on, in addition to other factors, three NYMEX natural gas price forecasts. These price forecasts were:

- the TransCanada PipeLines Limited (TransCanada) forecast submitted by NGTL in the original application (the 2011 Base Case);
- the 2011 NEB Energy Futures Report low price case (the NEB Case); and
- the TransCanada updated price forecast (the 2012 Base Case).

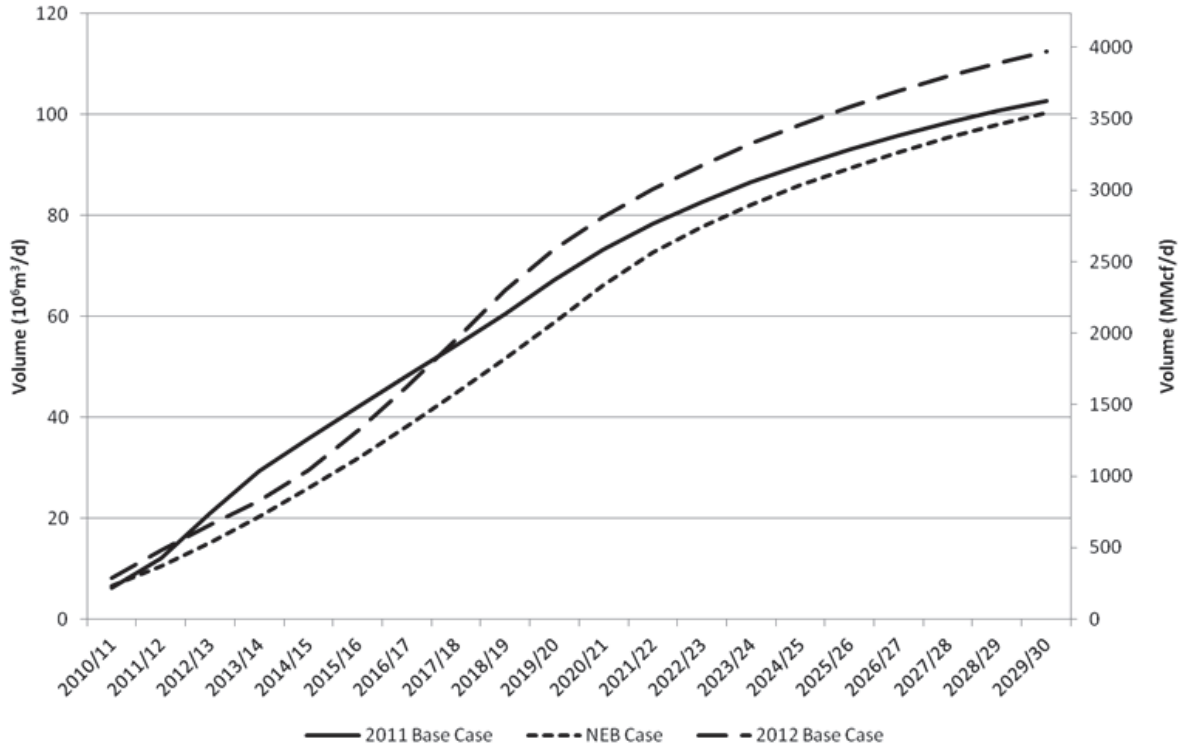
Figure 3-1 depicts the three price forecasts.

Figure 3-1 NYMEX Natural Gas Price Forecasts



NGTL submitted that TransCanada's price forecasts were determined by taking into account North American gas supply and demand, inter-fuel competition, gas supply costs by basin, and other factors. NGTL also submitted that the low gas price environment in 2012 was a result of the warm weather in the preceding winter, which was one of the warmest on record in North America. NGTL stated the 2012 gas market was a very low probability event and not representative of a balanced gas market. NGTL submitted that as the market rebalances, the gas price will increase. The three resulting production forecasts are depicted in Figure 3-2.

Figure 3-2 HRB Shale Gas Production Forecasts



In the 2011 Base Case, NGTL’s shale gas production forecast for the HRB grows from 6.1 10⁶m³/d (217 MMcf/d) in the 2010/11 gas year to 102.7 10⁶m³/d (3.62 Bcf/d) by 2029/30. In the NEB Case, production reaches 100.2 10⁶m³/d (3.54 Bcf/d) while the 2012 Base Case reaches 112.5 10⁶m³/d (3.97 Bcf/d) by 2029/30. NGTL was of the view that the HRB is a core, strategic and long life play for producers and will continue to get preferential allocation of capital in the producers’ portfolio of opportunities.

Pace of development

NGTL stated that it expects the pace of development in the HRB to gradually increase as infrastructure is developed in the area and as gas prices improve.

NGTL stated that drilling activity in the HRB has recently slowed due to the current low gas prices. However, NGTL pointed to other considerations that could mitigate the extent of the slowdown in drilling such as producer agreements with joint venture partners, a realization of higher prices due to hedging contracts, and continued experimentation related to optimizing development plans and increasing efficiencies.

NGTL noted that liquefied natural gas (LNG) development is a factor that could increase the pace of development in the HRB. The higher netbacks for producers shipping to the Asia Pacific markets, as well as a higher degree of price certainty associated with LNG supplier contracts, are expected to reduce the development risk and incent the producers to increase the pace of development and production levels.

Supply Costs of the HRB

NGTL suggested that the long-run supply costs of the HRB will fall from approximately CDN\$3.50/Mcf (plant gate costs) in 2010 to approximately CDN\$2.20/Mcf in 2030.

NGTL submitted that the long-run supply costs, the 2011 Base Case and the NEB Case price forecasts suggest that the economics of the Horn River supply development are robust under both price cases. According to NGTL, the economics of the Horn River supply under the NEB Case become increasingly attractive in the longer term; by 2020/21, the rate of return would be approximately 60 per cent. NGTL stated that the HRB was one of the most economic plays relative to other production areas in North America.

Cordova Embayment Supply

NGTL noted that production from the Cordova Embayment shale play is early in its development. NGTL forecasted production from the Cordova Embayment in its 2011 Base Case to increase from $0.5 \times 10^6 \text{m}^3/\text{d}$ (19 MMcf/d) in 2010/11 to $13.1 \times 10^6 \text{m}^3/\text{d}$ (463 MMcf/d) in 2029/30.

NGTL noted that it expects development costs will continue to decrease such that in the NEB Case, development of the Cordova Embayment will be economic and will approach the NGTL forecast after a short-term slowdown in activity, similar to the expectations for the HRB.

Upper Peace River Conventional Supply

NGTL provided a forecast of conventional production expected to flow to the Alberta System from the Upper Peace River area. Production for the area is expected to remain relatively flat, exhibiting a slight increase from $13.8 \times 10^6 \text{m}^3/\text{d}$ (487 MMcf/d) in 2010/11 to $15.5 \times 10^6 \text{m}^3/\text{d}$ (547 MMcf/d) by 2029/30.

Views of Parties

Export Users Group/Pacific Northwest Group (EUG/PNG) and Fortis Energy BC Inc. (FEI) pointed to a number of factors that created uncertainty regarding the expected timing and pace of development of the resource, such as persistent low gas prices and the discovery of significant new supplies across North America.

Views of the Board

The Board accepts that NGTL's estimates of resource potential and productive capacity are based on widely-used methodologies. The Board notes that other commercial parties acknowledged the significant size of the gas resource in the HRB.

The Board recognizes that some intervenors highlighted a number of circumstances (such as low gas prices and competition from other supply basins in North America) that could limit drilling activity and production in the HRB. The Board agrees that these factors could result in near and medium term production growth that is slower than contemplated in any of NGTL's production forecasts. The Board also observes that supply costs of the HRB are low although its future relative cost compared to other basins remains fairly

uncertain given the early stage of development. The extent and pace of development in the HRB remains an open question in the near to medium term. While the eventual timing is uncertain, given the resource size and potential low cost of the HRB, the Board is confident, however, that in the longer term, the production levels contemplated in NGTL's forecast are plausible.

3.2 Markets

Views of NGTL

NGTL submitted that the Project would be an extension and expansion of the Alberta System that links growing supplies in the Upper Peace River area with growing markets in Alberta and North America. Natural gas received on the Alberta System would be available for purchase and sale in the NOVA Inventory Transfer system (NIT) commercial hub. Once received on the Alberta System, the gas could be delivered to intra-Alberta markets or to other North American markets via interconnecting pipelines.

NGTL stated that gas throughput on the Project would be readily absorbed as it expects gas demand in North America to grow from approximately $2.3 \times 10^9 \text{ m}^3/\text{d}$ (80 Bcf/d) in 2010 to approximately $2.9 \times 10^9 \text{ m}^3/\text{d}$ (101 Bcf/d) by 2030. This expected growth is primarily a result of increased use of natural gas for electricity generation. In addition, greater gas consumption by the industrial markets in Alberta, including oil sands related projects north and east of Edmonton, and petrochemical, fertilizer and refinery demand within the Edmonton area is also expected to increase gas demand.

NGTL noted that LNG exports from the west coast of BC to Asia Pacific markets represented another potential market. Future markets in the Asia Pacific region would represent an incremental demand not included in NGTL's demand forecast and would provide producers with an additional incentive to grow supply.

Views of Parties

No Intervenor questioned NGTL's evidence regarding the adequacy of markets to receive and consume the gas to be transported on the Pipeline.

Views of the Board

Given the integrated nature of the North American natural gas market, the Board finds NGTL's analysis of the continental supply/demand balance to be reasonable. The Board accepts NGTL's conclusion that the gas throughput on the Project would be readily absorbed into the North American market. The Board also recognizes the potential for LNG exports to increase the likelihood that the markets for proposed volumes are likely to exist. Accordingly, the Board is satisfied that sufficient markets exist.

3.3 Transportation Volumes

Views of NGTL

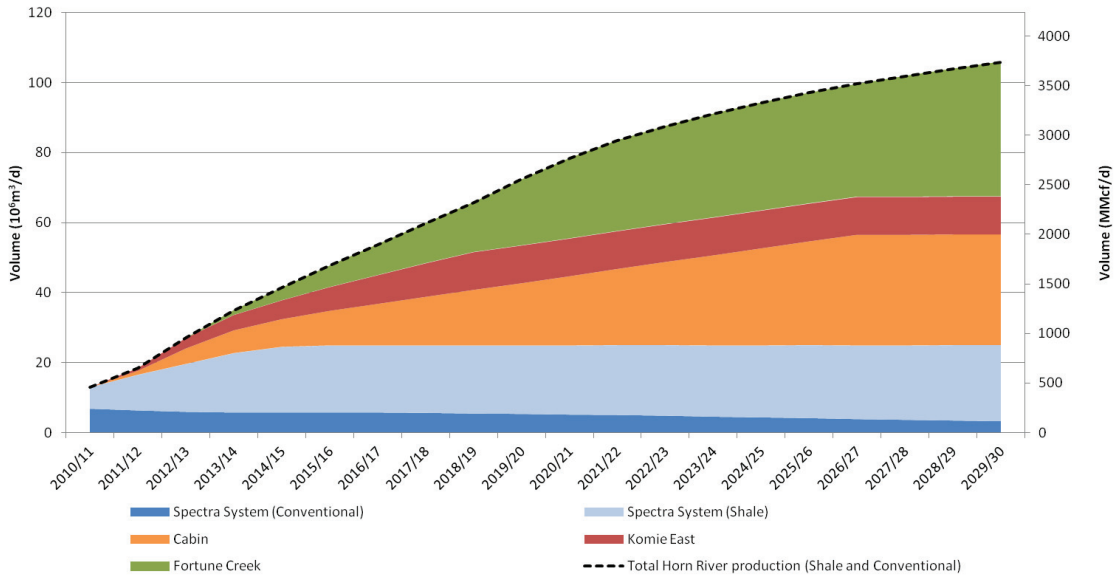
Sources of Gas for the Project

In its application, NGTL identified production from three supply sources that demonstrated the need for the proposed facilities: unconventional gas from the HRB and Cordova Embayment as well as conventional production in the Upper Peace River area. Volumes from all three production areas are expected to flow on the Chinchaga Section while only volumes from the HRB are expected to flow on the Komie North Section. Details of the production forecasts are discussed in Section 3.1.

Allocation of HRB volumes

NGTL stated that future Horn River shale gas production could be physically connected to either the Westcoast System or the Alberta System based on producer choice. Figure 3-3 demonstrates NGTL's allocation of the HRB 2011 Base Case volumes, both conventional and unconventional, to its receipt stations in the area, as well as to the Westcoast System. As stated in NGTL's application, all conventional production in the area is assumed to be shipped via the Westcoast System and processed at the Fort Nelson gas plant. NGTL's forecast allocated shale gas volumes to the Westcoast System, the Cabin and Komie East meter stations on the Horn River Mainline, and the proposed Fortune Creek meter station at the northern terminus of the Komie North Section. Due to increased shale volumes, NGTL assumed flows on the Westcoast System increase until 2015/16, at which point the assumed capacity of the Fort Nelson gas plant of $24.9 \times 10^6 \text{ m}^3/\text{d}$ (880 MMcf/d) is reached. After 2015/16, the Fort Nelson gas plant continues to run at full capacity for the remainder of the forecast period. Remaining gas from the total HRB shale forecast is assumed to flow on the Alberta System. The remaining gas was divided amongst the existing Cabin and Komie East meter stations as well as the proposed Fortune Creek meter station. HRB production allocated to the Fortune Creek meter station reaches $18.8 \times 10^6 \text{ m}^3/\text{d}$ (665 MMcf/d) by 2019/20 and $38.5 \times 10^6 \text{ m}^3/\text{d}$ (1358 MMcf/d) by 2029/30.

Figure 3-3 Allocation of Horn River Sales Gas Production (2011 Base Case)



Source: NGTL Northwest Mainline Komie North Extension Application, [A2F4J3](#)

NGTL acknowledged that the allocation of throughput to the Project was an assumption and not based on analysis. Responding to a question about possible impact of a higher Firm Transportation - Receipts (FT-R) rate on its forecast throughput, NGTL indicated that it could only say that directionally the throughput would be reduced, as their customers are very sensitive to changes in tolls.

Future upstream and downstream facilities

NGTL assumes that upstream processing capacity would be constructed to receive volumes on the various Alberta System meter stations. NGTL noted that a gas processing plant upstream of the Fortune Creek meter station would be in-service by 2014 with an initial sales gas capacity of 7.1 10⁶m³/d (250 MMcf/d). As the HRB develops, NGTL expected that additional processing would be added.

NGTL noted that additional looping and compression facilities would be needed to allow the volumes indicated in the design forecast to physically reach downstream markets. This included a number of compressor units and segments of looping along the existing Horn River Mainline and Northwest Mainline. NGTL noted there was a lack of certainty regarding the timing and scope of future facility additions, which was related to the pace of future development for producers. Subject to this uncertainty, NGTL estimated that the additional facilities downstream of the Komie North Section required to transport the projected volumes to the North Central Corridor (NCC) could cost \$858.2 million by 2019. After 2019, additional facilities would also be required.

Views of Parties

Westcoast Energy Inc., carrying on business as Spectra Energy Transmission (Westcoast)

Westcoast stated that NGTL provided no economic assessment of the assumption that the Fort Nelson plant will operate at full capacity even after the Komie North Section goes into service. In Westcoast's view, there is no economic evidence that would support the assumption. Westcoast submitted that it would not be able to compete for HRB gas supply against NGTL with its rolled-in cost of service (COS) and zero incremental toll.

Views of the Board

The Board recognizes that NGTL needs to make assumptions in order to prepare a reasonable forecast for its design purposes. However, the Board finds that there is a lack of evidence with respect to NGTL's assumption that the allocation of volumes to the Fort Nelson plant is reasonable. The Board is of the view that these eventual flows on facilities in the HRB will be determined, in part, by the tolls for the pipelines in the area. In addition, NGTL stated that its customers are very sensitive to changes in tolls and directionally higher tolls will reduce throughput. As a result, the Board finds that the likelihood of the Komie North Section being utilized at a reasonable level is dependent on the Board's determination on the appropriateness of the proposed toll treatment, discussed in Chapter 4. In the case of the Chinchaga Section, the Board is satisfied that NGTL's forecast throughput is reasonable.

The Board expects that connecting this large supply area to existing Alberta System infrastructure will require debottlenecking downstream. NGTL described future facilities, primarily additional compression and looping, that would be needed on the Komie North Section and downstream to transport the supply. The Board notes that without these future facilities, most of the volumes contemplated to flow on the Komie North Section would not be able to reach market. In this case, the number and cost of required future facilities identified by NGTL is relatively large. The Board is concerned about the degree to which the throughput forecast underpinning the Project is dependent on the unstated assumptions regarding the Board's potential approval of these facility additions and their associated costs in the future. While the Board notes this as a concern, it was not given significant weight in the Board's recommendation whether a Certificate should be issued for the Komie North Section.

Chapter 4

NGTL's Proposed Toll Treatment

Guidance in the NEB's Filing Manual indicates that toll treatment is relevant to assess Part III facility applications, especially with respect to financial feasibility. Further, the Filing Manual cites the potential for cross-subsidization as a relevant matter.

Matters relating to toll treatment fall under Part IV of the NEB Act, including the Board's broad authority in respect of traffic, tolls or tariffs.

Regarding the issue of whether Part III and Part IV proceedings should be held at the same time, the Board has in the past expressed the view that, where possible, Part III and Part IV proceedings should either be held at the same time or Part IV matters should precede Part III proceedings.¹ This is because the Board's decision regarding toll treatment can impact the financial feasibility of a project applied for under Part III.

Initially, the List of Issues for the Application did not explicitly reference NGTL's proposed toll treatment. Westcoast submitted that the appropriateness of NGTL's rolled-in tolls is integral to several of the issues on the Proposed List of Issues, including the Project's need, economic feasibility and potential commercial impacts. FEI and the EUG, who ship on both NGTL's Alberta System and the Westcoast System, as well as Northwest Industrial Gas Users and Northwest Pipeline GP, agreed with Westcoast's submission. Westcoast pointed out that it had previously raised concerns about NGTL's business model for new pipelines in northeast BC. While the Board had denied Westcoast's request for an inquiry, the Board's letter of 2 October 2011 stated that Westcoast may actively participate in any future Part III or Part IV applications to express its concerns.

In reply to parties requesting an expansion of the List of Issues, NGTL opposed including tolling methodology in the List of Issues in Appendix II, explaining that while the Board had the ability to include Part IV (tolling) matters when considering a Part III (facilities) application, the Board should only do so if the tolling matter were relevant to the need and public interest.

On 20 March 2012, the Board issued a letter indicating that the appropriateness of the NGTL toll treatment proposed in the application was relevant to its determination of whether approval of the Project would be in the public interest. This ruling also indicated that the Board would consider the proposed toll treatment, including its impacts on the need for the Project, economic feasibility of the Project, commercial transportation commitments and other commercial interests. For clarity, the Board added the following issue to the List of Issues: the appropriateness of the proposed NGTL toll treatment for the Project application.

¹ Reasons for Decision, RH-4-86, Interprovincial Pipe Line Limited at page 50 (PDF page 70).

4.1 Competitive Nature of the Market

Parties extensively discussed the nature of the market for transmission services in northeast BC. The nature of this market forms the context for some of the Board's findings and recommendation for the Komie North Section.

Views of NGTL

In response to concerns from other parties that the Komie North Section would impact competition in northeast BC, NGTL submitted that the Alberta System is used to transport sweet natural gas, commonly referred to as sales gas. NGTL noted the distinction between raw and sales quality gas by describing the difference in function between the Alberta System and Westcoast's gathering and processing (G&P) facilities. NGTL submitted that it is not in the business of raw gas gathering and processing and that it only competes with sales gas transmission lines. NGTL indicated that it is positioning itself to compete for further sales gas transmission and that sales gas transmission in BC does not have sufficient alternatives for a competitive playing field.

NGTL noted that the shipper requesting service will construct and pay for its own raw gas gathering pipelines and gas processing plant in the vicinity of the Fortune Creek meter station. In NGTL's view, additional sales gas pipelines are required to reach this plant.

NGTL stated that Westcoast is not prohibited from extending its sales gas facilities utilizing a rolled-in, postage stamp toll treatment, to new raw gas gathering and processing facilities if Westcoast chose to do so. NGTL submitted that producers have expressed support for alternatives in northeast BC and that the Project provides one alternative.

NGTL used the term gas value chain to describe the producers' decision-making as encompassing a combination of alternatives that offer them the best value, taking into account all components of the value chain, such as alternatives for the raw gas system, alternatives for gas processing and alternatives for sales gas transmission.

Views of Parties

Canadian Association of Petroleum Producers (CAPP)

CAPP submitted that NGTL does not provide raw gas gathering and processing service, which is provided in a highly competitive market in both Alberta and northeast BC.

Quicksilver Resources Canada Inc. (Quicksilver)

During the oral hearing, Quicksilver was identified as the producer seeking access to the Alberta System at Fortune Creek. Quicksilver did not submit evidence but it did cross-examine parties and provided final argument where it argued in support of NGTL's proposed toll treatment.

Westcoast

Westcoast provided a description of the history of gas industry development in BC and Alberta, including how gas transported by Westcoast is processed at centralized gas plants owned by Westcoast. Westcoast stated that in general, gas transported by NGTL is processed at decentralized gas plants owned by producers under provincial jurisdiction that are typically located at or close to the gas fields. However, Westcoast pointed out that the function of both pipeline systems is to transport gas and this transmission service is the focus of the competition.

Westcoast contended that whether the pipelines serve raw or residue gas is irrelevant. The purpose of the Komie North Section is to transport gas from the same supply area served by Westcoast's raw gas pipelines. Therefore, the two pipelines are in direct competition for gas supply. Westcoast stated that while NGTL claimed not to be in competition with Westcoast, NGTL had negotiated commitments from Quicksilver to extend its contracts on the Komie North Section beyond 2025, if it continued to hold contracts on third party systems. Westcoast argued this commitment would be totally unnecessary if the two were not competing for gas supply. Westcoast also argued that NGTL's witnesses referred repeatedly to Westcoast as a competitor.

Dr. Cicchetti, on behalf of Westcoast, described NGTL's narrow definition of competition solely focused on sales gas pipelines as self-serving and not realistic because it ignores that the two systems would compete for the same gas supplies. In his view, there is no doubt that the two choices are close substitutes and compete with each other.

EUG/PNG

EUG/PNG provided similar evidence to Westcoast about raw and sales gas pipelines.

FEI

FEI submitted that a competitive environment already exists in northeast BC for the provision of gas infrastructure and that this competition should continue. Dr. Makhholm, on behalf of FEI, submitted that allowing the Project as proposed would give NGTL an unfair commercial advantage that neither competitive markets nor consistently regulated markets would allow.

Views of the Board

The Board found the distinction between transportation of raw gas as opposed to sales gas to not be helpful to its assessment. In NGTL's own words, the Project offers an alternative that producers in the HRB could choose.

The Board accepts Westcoast's submission that the commitments between NGTL and Quicksilver, as well as NGTL's oral evidence, show that NGTL viewed Westcoast as a competitor for gas supply. The Board also finds persuasive the expert evidence of Dr. Cicchetti, on behalf of Westcoast, that the Komie North Section is a close substitute for other facilities in northeast BC. The Board is satisfied that the evidence on this topic established that the Project facilities would be part of competition in northeast BC.

NGTL describes the Project as a link in an alternative value chain. In this context, the Board agrees producers will make choices based on available or proposed capacity, netbacks, and terms and conditions of service. Fully regulated undertakings can be effective links in alternative value chains serving competitive markets. However, in the context of this competition and the choices that producers will make in northeast BC, the Board's public interest responsibility requires heightened care in order that Canadians benefit from efficient infrastructure and markets.

The Board considered, based on the facts of this application, whether the proposed toll treatment is appropriate. The competitive context impacts the Board's finding on whether the Komie North and Chinchaga Sections are economically feasible in Chapter 5, and its view of affected commercial third parties and its public interest finding in Chapter 6.

4.2 Proposed Toll Treatment

The views of NGTL below first describe some features of the toll treatment, and then present NGTL's views on the merits of the toll treatment.

Views of NGTL

In its Application, NGTL proposed to determine its rates for service in accordance with the Alberta System rate design methodology and approved rates in effect at any given time. NGTL also proposed to treat the costs for the Project on a rolled-in basis.

NGTL's current rate design was approved by the Board in RHW-1-2010.² The rate design methodology is based on a settlement negotiated between NGTL and its shippers. Current rates were approved under NEB Letter and Toll Order TG-05-2010 in response to a Revenue Requirement Settlement Agreement Application from NGTL.

In its evidence, NGTL stated that it defined the term "rolled-in" as meaning the capital associated with the Project would be added to the rate base of the system. That rate base in its entirety is used as the basis for setting the revenue requirement and then for determining tolls over the entire system in a manner consistent with the existing rate design.

Rate Design Features

NGTL develops its rates from its cost of providing service. Generally when capital is invested, it is added to rate base, then an annual COS or revenue requirement is developed as a foundation for rates or tolls.

The current NGTL rate design allocates transmission-related costs on the Alberta System equally (50/50 allocation) between receipt and delivery services. These receipt and delivery costs (or revenue requirements) are the basis for determining receipt and delivery rates respectively.

² Reasons for Decision, RHW-1-2010, Rate Design Methodology and Integration Application. The NGTL rate design is applicable to the "Integrated Alberta System", which includes the facilities on Alberta System owned by NGTL, and the ATCO Pipelines physical facilities owned by ATCO Gas and Pipelines Limited.

Receipt revenue is allocated to rates at each receipt point using a methodology that takes into account distance and capacity at the receipt point using a cost index. The cost index takes into account the pipe diameter in the flow path to allocate NGTL’s receipt revenue to individual meter station FT-R rates. Rates are defined for various types of services, including FT-R, and are available to shippers who contract for firm transportation.

The current rate design includes a ceiling and floor for FT-R rates that are eight cents per Mcf above and below the average receipt rate. NGTL stated that under this rate design, the new volumes received at the Fortune Creek meter station would pay the ceiling rate.

Table 4-1 shows the constrained (with the ceiling) and unconstrained (without a ceiling) rates at some meter stations on the Alberta System in northeast BC.

Table 4-1 Comparison of FT-R Rates on the Horn River Mainline of the Alberta System

Meter Station	FT-R Rate based on 2012 Interim Rates ³			
	Unconstrained		Constrained	
	10 ¹² m ³	cents/Mcf	10 ¹² m ³	cents/Mcf
Fortune Creek	12.13	34.0	8.94	25.3
Komie East	11.49	32.2	8.94	25.3
Cabin	11.49	32.2	8.94	25.3
Sierra	10.92	30.6	8.94	25.3
Little Hay Creek	9.99	28.0	8.94	25.3

Based on NGTL’s 2012 Interim Rate assumptions, NGTL estimated that the reduction in revenue from Alberta System customers whose rates are priced at the ceiling is approximately three per cent of the total Alberta System revenue requirement. On similar assumptions, NGTL submitted that the unconstrained FT-R rates for points in northeast BC are within the range of those observed at other locations across the Alberta System. Further information on cost allocation is due to be submitted in 2015 using the changing design and operation in this area of the Alberta System.

NGTL stated that the initial rates when the Komie North Section is expected to come into service would be higher than those in 2012. NGTL also noted that in any given year, the actual receipt rates and the volumes subject to the ceiling rate would depend on the actual Alberta System revenue requirement and the total throughput, as well as the distribution of volume among receipt points.

³ The Fortune Creek unconstrained rate is from NGTL Response to NEB IR 5.2, page 3, [PDF page 7 of 40, [A2U6X3](#)]. Rates for other meter stations are drawn from the 29 June 2012 filing, NGTL Alberta System FT-R Floor And Ceiling Rates Phase 1 Report, Table 3, page 10 [PDF page 12 of 40, [A2U4X6](#).]

Appropriateness of Rate Design

NGTL added that there is an inherent level of cross-subsidization in any rate design for an integrated system, due to the fact that costs are averaged and allocated across the system. NGTL cited the overall three per cent of total revenue mentioned above as evidence that any cross-subsidization was modest and not inappropriate.

In response to FEI and Westcoast's assertion that NGTL would be effectively charging a zero incremental toll and providing free service on the Komie North Section, NGTL stated that all Alberta System shippers pay the applicable rates for service received on the Alberta System and make appropriate revenue contributions.

In response to FEI and Westcoast submissions that meter stations on larger diameter pipe attract lower unconstrained tolls, NGTL confirmed that the larger pipe sizes in the flow path will directionally reduce tolls.

NGTL also submitted that the pricing structure, including the FT-R rate ceiling, was implemented to provide a reasonable range of receipt rates for the system that would not adversely affect supply in the long term. NGTL suggested that subsidization from the rate design and from building for the 2030 forecast flow was justified as a basin opening toll. NGTL submitted that the modest level of cross-subsidization reduces the hurdles to develop the basin and is a short-term catalyst to help producers overcome a potentially uneconomic circumstance. If a shipper were required to cover the additional costs of getting to the Alberta System, as well as the cost once on the Alberta System, NGTL would consider that as an increase in the economic barrier to reach NIT.

NGTL submitted that a further merit of the proposed toll treatment is that it would increase the volumes on the NIT commercial system, increasing its liquidity and transparency. However, NGTL acknowledged that benefit could be achieved also if the producer built and paid for the Komie North Section themselves.

Risk Allocation and Rolled-in Treatment

NGTL used the term rolled-in for aspects of its proposed toll treatment. NGTL explained that, due to the nature of rolled-in tolling, all shippers on the Alberta System bear the costs (including the short and medium term risk of underutilization) and realize the benefits associated with the Project. NGTL submitted that, if its forecast throughput did not materialize, the costs of the Project would still be rolled-into the rate base and become part of its revenue requirement shared amongst all of its shippers.

NGTL was asked about a scenario of NGTL being expressly at risk for the costs of Komie North Section. NGTL responded that in this instance, it would probably suspend the Project and not proceed. NGTL also indicated that if it received approval based on the Komie North Section being tolled on an at risk basis, that this could upset the existing settlement on the Alberta System.

NGTL indicated that its Report of Guidelines for New Facilities Task Force, Version 2-18 October 2011 (Guidelines) provides guidance as to what facilities NGTL does or does not build.

These Guidelines were initially developed in a stakeholder forum while under Alberta regulation. To the extent that a proposed facility complies with these Guidelines, in NGTL's view, the shippers accept that those facilities would be rolled-in. Further, NGTL submitted that there may also be other circumstances, even when a project is not squarely within its Guidelines, when the costs are fully rolled-in.

NGTL clarified that it considered the term rolled-in to be a concept or business practice, not a rate design principle. In contrast, the rate design features included parameters such as distance, diameter, volume and pressure. NGTL acknowledged that the term rolled-in had not been used in the Board's decision RHW-1-2010, but considered that rolled-in was a foundational concept underlying all the settlement discussions that led to that rate design filing. NGTL submitted that it would be inequitable and discriminatory to treat the capital for some customers in a different fashion.

NGTL stated that it considers a number of factors when determining the appropriate toll treatment for a project, mentioning in particular:

- the degree of integration of the proposed expansions or extensions with the existing Alberta System;
- the type of service to be provided through the proposed expansion or extension;
- the impacts on Alberta System customers;
- economic efficiency; and
- consistent, predictable and equitable toll treatment.

NGTL submitted that the Board had used these criteria in the past.

To support a conclusion that the Project meets these criteria, NGTL presented evidence that the facilities are integrated and would provide the same service as elsewhere on the Alberta System.

Equitable Treatment and Practical Considerations

NGTL submitted that the costs associated with three major extensions recently approved and constructed in northeast BC were treated on a rolled-in basis. NGTL argued that, assessing the Project facilities in the same manner as other Alberta System expansions and extensions creates toll consistency and predictability for Alberta System customers. NGTL submitted that treating this Project any differently from past similar expansions and extensions of the Alberta System would result in unjust discrimination for certain shippers on the system.

NGTL submitted that the rates for the Komie North Extension could not be analyzed in isolation. Any potential changes to rate design and the use of the floor and ceiling rates would need to consider the entire Alberta System to ensure fair and consistent treatment for all Alberta System customers. At the same time, NGTL also stated the hearing was not about the merits of NGTL's approved rate design for the entire Alberta system.

NGTL said that it had not evaluated the impact of other toll treatments for the Project because the proposed toll treatment is appropriate in these circumstances.

Views of Parties

CAPP

CAPP's comments on the proposed toll treatment focused on the rolled-in aspect. CAPP used the term rolled-in as part of the rate design methodology, which it indicated was a different meaning than that of NGTL. CAPP supported the continued use of rolled-in tolling on NGTL and on the Komie North Section.

Quicksilver

Quicksilver supported rolling the capital into the rate base, and submitted that incremental tolls are not necessary. In support of this position, Quicksilver pointed to the Alberta regulator's handling of a sales gas facility near Fort McMurray.⁴ In Quicksilver's view, that case was very similar to the current Application with its concerns regarding competition, cost accountability and a zero cent delivery charge. According to Quicksilver, in that 2002 case, the Alberta regulator found that the shipper was entitled to service on a rolled-in basis, even though there were continuing matters to address on rate design and floor or ceiling rates.

Westcoast

Westcoast stated that three aspects of NGTL's toll treatment (which it described as a utility pricing model) would give NGTL an unfair advantage competing for gas supplies:

- use of rolled-in tolling, which puts the utilization risk on shippers and not NGTL;
- a toll ceiling; and
- an investment policy of building for NGTL's own assessment of supply potential, and not contracts (discussed further in Chapter 5).

Westcoast suggested that rolled-in tolling is the root of the problem, noting that NGTL's investment policy could not reasonably exist without rolled-in tolling as the investment policy leads to capacity and costs that are not linked to contracts.

Westcoast also submitted that under NGTL's toll design with its FT-R ceiling, a shipper on the Komie North Section would effectively pay a zero incremental toll and receive free transportation service from Fortune Creek, notwithstanding that the pipeline has an estimated annual COS of about \$24 million.

According to Westcoast, removing the FT-R ceiling would not mitigate the problem with utility pricing in the region as rolled-in tolling would still facilitate the investment policy and construction of more capacity than needed. Using an NGTL 2004 filing which explained NGTL's unit cost index, Westcoast illustrated that gas flowing through large pipes would attract a significantly lower NGTL rate, even when the large facilities have low utilization. Westcoast submitted that NGTL's investment policy, supported by rolled-in tolling, gives NGTL an unfair advantage.

⁴ Alberta Energy and Utilities Board (AEUB) Decision 2002-16 (Feb 5, 2002), Nova Gas Transmission Ltd.

Westcoast discussed a variety of mitigation options. However, Westcoast contended that even with incremental tolls for the Komie North Section, NGTL would bear no financial or utilization risk for the pipeline.

Dr. Cicchetti raised concerns regarding the impact of the proposed toll treatment on existing natural gas infrastructure serving the HRB.

Westcoast recommended that the Board should favour competitive outcomes and conclude that NGTL's proposed toll treatment is not appropriate for the Komie North Section.

EUG/PNG

EUG/PNG echoed Westcoast's arguments that NGTL's proposed rolled-in toll treatment would give the company an unfair advantage in northeast BC.

EUG/PNG proposed three ways by which NGTL could bear the utilization risk for the Komie North Section.

One proposal was for NGTL to have fully contracted capacity effective on the in-service date of the Komie North Section. Another proposal would be to apply the principles of the Framework for Light Handed Regulation (Framework) to the Komie North Section. The remaining proposal was to restrict costs allowed into its rate base and COS to the costs associated with the contracted portion. However, with this proposal, EUG/PNG argued that NGTL's potential competitive advantage would still exist with rolled-in tolling.

FEI

FEI indicated it did not oppose the toll treatment for the Chinchaga Section, but strongly opposed the rate design and rolled-in tolling for the Komie North Section.

FEI submitted that, given the rate ceiling, shippers at new meter stations would pay nothing for the costs of transportation to existing points being charged at the ceiling FT-R rate. In FEI's view, offering potential shippers this zero incremental toll on the proposed Komie North Section would be sending inappropriate price signals. These improper price signals would draw natural gas produced in northeast BC to the NGTL system.

According to FEI, the rate methodology NGTL negotiated with its shippers provides NGTL with a competitive advantage against other pipelines competing in northeast BC. FEI submitted that the Board should not, through the approval of a toll treatment, provide one participant in a market with an advantage that is not available to others.

On the rolled-in aspect, FEI submitted that the central issue is the allocation among parties of the financial risk associated with the proposed Komie North Section. FEI contended that NGTL's approach requires all of its shippers to bear the risk associated with the potential underutilization of expansion facilities.

FEI disputed NGTL's claim that the facilities are integrated and explained that to be integral, a section must be necessary to complete or to efficiently operate the existing NGTL facilities.

FEI submitted that there is no proper matching of risk and reward between new and existing shippers on NGTL, and that NGTL's gas supply forecasting and proposed rolled-in toll treatment encourages the overbuilding of facilities.

Dr. Makholm submitted that NGTL's proposed toll treatment is anti-competitive and would shift costs away from shippers most closely connected to new infrastructure and toward those who obtain no tangible or practical benefit from it. Dr. Makholm recommended applying regulatory principles designed to present the pipeline company and the relevant shippers with the price signals that will promote competition and economic efficiency.

Views of the Board

The Board considers use of the proposed toll treatment appropriate for the Chinchaga Section, but inappropriate for the Komie North Section. The Board's reasons for these findings are set out below. In assessing the evidence on the appropriateness of the proposed toll treatment, the Board was concerned about the consistency with the user-pay criteria. The Board has described the importance of this criteria in past Board decisions, such as the following:

[I]n order to set just and reasonable tolls for [Interprovincial Pipe Line Inc.] the principles of cost-based/user-pay tolls and no unjust discrimination should be respected. If possible, the objectives of simplicity, stability and predictability should be met, but not at the expense of the principles. Further, tolls should ideally be set in order to promote economic efficiency. However, when there is a conflict between adherence to the principles of cost-based/user-pay tolls and setting tolls to promote economic efficiency, there would need to be strong reasons before the Board would depart from adherence to cost-based/user-pay tolls. Finally, consideration should be given to fairness for all of the parties affected by the decision.⁵

In the context of the current Application, user-pay has the same meaning as the term cost causation. The term cross-subsidization is used to denote a departure from cost causation. Basing pricing for transportation on cost causation promotes economic efficiency through proper price signals to the market.

Basis for the Proposed Toll Treatment

Natural gas tolls in any given year are determined by a revenue requirement that sets the costs to be included and a rate design that allocates those costs among services. For some companies, the revenue requirement can determine the risks faced by the pipeline company.

The Board dealt with NGTL's rate design in RHW-1-2010, and commented on concerns about the closely linked issues of possible NGTL extensions into BC and the appropriateness of the ceiling rate and floor rate. Some parties asked that time or geographic limits be put on the methodology. The Board declined to set time or

⁵ Reasons for Decision, RH-2-91 Decision, Interprovincial Pipe Line Inc. June 1992 page 62 pdf 78, as cited in [OH-2-97](#) 1997, page 57 (pdf 73).

geographic limits on the methodology at that time but indicated that the Board would need sufficient information to assess the continued appropriateness of the ceiling and floor rates.⁶

Although RHW-1-2010 required follow-up information on cost allocation in 2012 and 2015, the Board's reasons in RHW-1-2010 do not make a finding that consideration of the appropriateness of the toll treatment should await the filing of the follow-up information. In this Report, the Board is not making any determinations about the entire Alberta System, only regarding the appropriateness of the proposed NGTL toll treatment for the Project.

Cost Causation or User-Pay

The Board acknowledges NGTL's view that there is some inherent cross-subsidization in many rate designs. However, the Board considers the extent and impact of the cross-subsidization as important factors in its decision making. For example, the higher the cross-subsidization, the further tolls are from cost causation and the more the risk of underutilization is borne by other shippers.

NGTL asserts that the toll ceiling is justified because only three per cent of the entire Alberta System revenue is impacted by the rate ceiling. In the case of the Komie North Section, the Board finds this observation unpersuasive. Differences in rates or prices that are small relative to NGTL's large system and large revenue can still have a significantly disruptive impact on choices made in specific locations. As a result, cost causation for the Komie North Section remains an important consideration for the Board.

All parties submitted that netbacks (market prices less the rates charged for transportation) will determine the choices made by producers in northeast BC. In this context, the Board finds user-pay to be particularly important.

Portions of NGTL's rate design methodology are distance-based, which normally would take into account user-pay or cost causation to a significant degree. However, the ceiling on receipt rates limits the cost causation reflected in the rate design. The evidence shows that any shipper on the Komie North Section would be receiving a significant subsidy. This cross-subsidization exceeds the Board's tolerance for departures from the user-pay principle. Therefore, the Board finds that NGTL's proposed toll treatment for the Komie North Section would not produce just and reasonable tolls.

FEI and Westcoast submitted that the rate ceiling gives shippers at Fortune Creek a zero toll to get to downstream points that are also eligible for the rate ceiling. The Board finds that there would be zero additional revenue from contracts at Fortune Creek relative to comparable contracts at points downstream on the system, despite the extra costs required to build the Project facilities. As a result, the Board does not find the ceiling rate appropriate for use on the Komie North Section.

⁶ NEB - RHW-1-2010 Reasons for Decision - NOVA Gas Transmission Ltd. – Toll Methodology and Integration Application, Reasons for Decision [[A1T9X8](#)] - pages 3-6

If the FT-R ceiling rate were removed, the unconstrained FT-R would apply. This unconstrained rate has been described as allocating total costs based on a capacity distance factor. NGTL acknowledged that the larger the pipe, the lower the unconstrained toll. The Board finds that this methodology further inhibits accountability for investment decisions when there is a significant difference between contract support and the capacity selected for the Komie North Section.

The features discussed above were known conceptually since the RHW-1-2010 proceeding. However, details on the relative magnitude of costs and rates were not available until the evidence related to this Project and the 29 June 2012 Floor and Ceiling report filed by NGTL.

NGTL's Concern Regarding Unjust Discrimination

NGTL contended that, if not given the same access to a ceiling rate, a shipper could complain of unjust discrimination. NGTL appeared to be referring to potential shippers on the Komie North Section. The only initial proposed shipper for the Komie North Section was Quicksilver and it did not provide evidence.

The Board notes that claims of unjust discrimination could involve charging different prices for services of similarly situated customers. Customers at different distances to market are not necessarily similarly situated. Here, given the limited evidence, the Board was not persuaded by NGTL's argument.

Rolled-in Treatment and Risk Allocation

In RH-1-2007, the Board defined rolled-in tolls, including the phrase 'one cost pool for all facilities', distinct from incremental tolls (with costs of new facilities in a separate cost pool from existing facilities) and stand-alone (on geographically distinguishable facilities).⁷ The parties, including NGTL, did not always use the term rolled-in tolls consistently, however NGTL clarified how it defined rolled-in tolls during the oral hearing.

The parties' evidence used the term rolled-in with two different interpretations. In at least some of its evidence, NGTL used the term to mean that costs of an expansion are entirely included in its regulated rate base, forming a basis for rates. Elsewhere it appeared to mean rolled-in tolling as distinct from incremental tolling. For example, in support of rolling in the costs, NGTL also cited criteria (for example, providing the same service and integrated with the rest of the system) that the Board has previously considered in determining whether specific facilities are assigned to a separate cost pool or tolled based on one combined cost pool. In the current case, the Board is not considering incremental tolling as no alternative rate methodology has been presented. As a result, the Board is not making a determination regarding the integration of the Komie North Section with the Alberta System. The appropriate toll treatment may involve separate or combined

⁷ Reasons for Decision, RH-1-2007, Gros Cacouna Receipt Point Application, Glossary of Terms page v [pdf 9 at [A0Z7D1](#)]

cost pools. The Board does however, require consistency with the principles of user-pay and appropriate allocation of risks.

For this Project, NGTL's proposal to roll-in all costs of the Project to the rate base shifts the cost or risk of unused capacity to other NGTL shippers in the short and long term. NGTL provided little evidence to indicate the willingness of those shippers to carry these costs. This was particularly apparent for the Komie North Section, where there were some Alberta shippers that were opposed. Further, shifting the risk of underutilization of the selected pipe investment reduces NGTL's incentives for prudently sizing capacity of the Komie North Section, as discussed in Chapter 5. This effect could be mitigated by some form of risk sharing. However, NGTL has indicated that it has not considered alternative toll treatments, or any other basis on which it would undertake the Project. Since, the Board is not determining the appropriate toll treatment, only determining whether NGTL's proposal is appropriate or not, the Board cannot resolve this aspect of the risk allocation or cost causation issue in this Application for the Komie North Section.

Price Signals and Economic Efficiency

NGTL argued that any subsidization is justified as a basin opening toll. The Board did not find this argument persuasive. The Board notes that infrastructure already exists in this basin. From that perspective, the Board does not consider NGTL's proposed toll treatment to be a basin opening toll. In the current circumstance, a basin opening argument does not justify a departure from user-pay.

NGTL submitted that the price structure including the ceiling was implemented to provide a reasonable range of receipt tolls for the system but that would not adversely affect supply in the long term. The goal of not affecting supply could be reasonable where a rate design changes netbacks for supplies already connected to a system, as was the case in RHW-1-2010. However, the Board is not persuaded of the merit of this goal for rates applicable for major new extensions. Efficient resource development in this circumstance requires transportation price signals that reflect the true costs of sourcing distant supplies.

As traditional supply sources are depleted, new supplies are needed. Prices that are consistent with user-pay and appropriate risk allocation help economic efficiency in the development of supply. The Board finds no reason to weaken such price signals in the current circumstances.

Other Considerations

NGTL also cited toll stability in support of its proposed toll treatment. Administrative simplicity and rate stability can be criteria for toll design. As the Board has previously stated, administrative simplicity is relevant but not as important as cost causation.

On the matter of rate stability, the Board observes that once facilities are built, transition to a new rate design is difficult as the pipeline owner would have invested in fixed facilities and producers would have invested capital upstream of the pipeline. For this

reason, the Board is of the view that the sequence is important. Where possible, it is desirable that the Part III and Part IV proceedings either be held together or that the toll methodology precedes the Part III proceedings. In this instance, while the Board added a Part IV matter to the revised List of Issues, the topic was limited to the appropriateness of the proposed toll treatment. NGTL did not provide the Board with an alternate toll treatment to consider in the event that the Board found NGTL's proposed toll treatment to be inappropriate.

The objective of rate stability for shippers on the Komie North Section can be best served by NGTL having a toll treatment approved as appropriate prior to the construction of the Komie North Section. For this reason, should a Certificate for the Komie North Section be issued, the Board considers it necessary for the following condition to be satisfied:

Prior to the commencement of construction of the Komie North Section, NGTL shall file, and obtain Board approval for, a proposed toll treatment for the Komie North Section facilities (Condition 17, Appendix IV).

NGTL suggested that it would have difficulty implementing different rates in this area without revisiting the entire system rate design, which would be a time-consuming endeavor. NGTL's evidence is insufficient to persuade the Board that this is the case. The Board will leave to NGTL whether localized solutions can be developed separate from a new system-wide rate design.

At this point, obtaining toll approval could cause some delay in providing service. However, NGTL chose to apply for these facilities using its existing rate design, despite being aware that its application could be contentious. NGTL could have chosen to seek Part IV approval of its proposed toll treatment first, but did not choose to do so. NGTL would also have been aware of the Board's direction in recent NGTL facility hearings⁸ that approval of a project does not automatically mean endorsement by the Board of a proposed rolled-in toll treatment.

Conclusion Regarding Appropriateness of the Proposed Toll Treatment for the Komie North Section

The Board finds NGTL's proposed toll treatment inappropriate for the Komie North Section. The proposed rate design would unreasonably subsidize the extension of the NGTL Alberta System into an area where it would compete with infrastructure already in place. Basing pricing for transportation on cost causation promotes economic efficiency through proper price signals to the market. In this context, the Board is of the view that the tolls for NGTL's transmission service must have an appropriate allocation of cost and risks.

Some of the parties suggested that only incremental tolling would be appropriate for the Komie North Section. Others suggested that the only solution was for NGTL to use the principles of the Framework, accepting financial risk for part of the investment. The

⁸ For example, Reasons for Decision, GH-4-2011, Leismer to Kettle River, where no Part IV approvals were requested.

Board is of the view that tolling based on COS could well be compatible with market-based tolling, as long as there is an appropriate allocation of costs and risks, respecting the user-pay principle. At this time, the Board is not restricting the revised toll treatment that NGTL may develop for the Komie North Section.

Conclusion Regarding Appropriateness of the Proposed Toll Treatment for the Chinchaga Section

There was no evidence that raised concerns for the Board at this time regarding the consistency with the user-pay principle for the Chinchaga Section. Further, no parties raised concerns about the appropriateness of the proposed toll treatment for the Chinchaga Section.

The Board finds that NGTL's proposed toll treatment for the Chinchaga Section to be appropriate.

Chapter 5

Economic Feasibility

As explained at the beginning of Chapter 3, in assessing the economic feasibility of the Project, the Board considered the need for the Project, the likelihood of it being used at a reasonable level over its economic life and the likelihood of tolls being paid. These considerations are affected by the toll treatment. The Board evaluated these aspects on their own merit, and in light of the finding in Chapter 4 that the proposed toll treatment is inappropriate for the Komie North Section.

5.1 Komie North Section

5.1.1 Shipper Support

In evaluating the shipper support for the Project, the Board considered the contractual support, whether NGTL could recover the costs of the Project from users of the Project and the support from other NGTL shippers.

Transportation volumes were discussed in Chapter 3. However, these volumes are also relevant to the Board's decision of economic feasibility.

Views of NGTL

NGTL submitted that the primary driver behind the Komie North Section is a binding commitment negotiated with Quicksilver for FT-R service at the proposed Fortune Creek meter station. Initially the contracts were to commence in May 2014, May 2018 and May 2020. In August 2012, NGTL informed the Board of a delay in the contract dates. With this delay the contracts start in August 2015 for ten years, and August 2018 for seven years and in August 2020 for five years. Each of the three contracts is for $2\,832.8\ 10^3\text{m}^3/\text{d}$ (100 MMcf/d), is primary term, and is not eligible to expire prior to 31 July 2025.

Shipper support for the development and construction phase of the Komie North Section is in the form of a Project Expenditure Authorization (PEA). The executed PEA for the Komie North Section is subject to satisfaction of the Alberta System financial assurance requirements. NGTL submitted that Quicksilver has provided a letter of credit to underpin the costs of the Project to date and will increase that coverage as further construction commitments are made.

Once the pipeline goes into service, a standard financial assurance is required from shippers to backstop their credit obligations. In the NGTL Gas Transportation Tariff, shippers are required to provide financial assurances for 70 days of the aggregate of all rates, tolls, charges or other amounts payable to NGTL. This assurance is independent of the term of the contract and limits the assurances NGTL may request.

NGTL acknowledged that if the transportation contracts underpinning the Project were held by multiple customers, it would likely result in lower counterparty risk compared to a single

customer project. Responding to questions about Quicksilver's financial situation, NGTL stated that it conducted a high level review of Quicksilver in September 2012. NGTL said there had been a marginal reduction in Quicksilver's debt ratings and that NGTL is of the view that Quicksilver will be able to comply with the required financial assurances.

NGTL also indicated that under certain conditions set out in a Commitment Letter, the shipper had agreed to recontract $3.0 \times 10^6 \text{m}^3/\text{d}$ (106 MMcf/d) of FT-R beginning in 2025. In response to an information request from the Board, NGTL stated that the conditions include recontracting until such time as either the FT-R revenue on the extension matches the capital cost of the extension, or 1 Tcf of natural gas has been transported on the Komie North Section. At the oral hearing NGTL clarified that if the shipper does not have contracts on other transportation systems, there is no minimum volume commitment to NGTL. In response to Intervenor questions at the hearing, NGTL acknowledged that Quicksilver's recontracting commitment was conditional on it holding contracts with third-party pipelines and that NGTL's written evidence needed to be modified to accurately characterize the arrangements with Quicksilver.

NGTL submitted that there was no reason to file the contracts with the Board as NGTL had laid out the germane terms of the commitments made by the shipper. NGTL also stated that it holds customer information confidential, regardless of the actions by the customer that make it public.

In NGTL's view, both the total amount of capacity under contract at the time of the Application and the percentage of capital cost covered by contracts for the Komie North Section are well within the typical range for NGTL projects that have been approved by the Board, particularly when compared to extensions into new supply areas.

NGTL indicated that the receipt contract revenue from the Fortune Creek, Cabin and Komie East meter stations would cover 17 per cent of the cumulative COS and 34 per cent on a present value basis.

NGTL submitted that the Project contribution to total COS would increase the full path toll by 30 cents/ 10^3m^3 (0.8 cents/Mcf). However, the contract commitments at the Fortune Creek, Cabin and Komie East meter stations would add revenue, accounting for an offset of 18 cents/ 10^3m^3 (0.5 cents/Mcf) and resulting in a net increase, in the first year of operation, of 12 cents/ 10^3m^3 (0.3 cents/Mcf). NGTL provided a forecast comparison of system receipt tolls that showed the average FT-R rate would be approximately 8 cents/ 10^3m^3 (0.2 cents/Mcf) higher throughout the forecast period if the contracts were the only new volumes following from the Project.

According to NGTL, in addition to the revenue from the FT-R contracts, there will also be indirect delivery revenue associated with these volumes. This revenue would be in the range of 36 cents/ 10^3m^3 to 72 cents/ 10^3m^3 (1-2 cents/Mcf) on a full-path toll basis.

NGTL submitted that an alternative toll treatment may require transportation service that is different than the FT-R service executed by the contract shipper. In that event, according to NGTL, the transportation service agreement may need to be renegotiated. As mentioned in Chapter 4, NGTL stated that a significant increase in Project tolls would "have the potential to challenge the feasibility". NGTL added that without knowing the amount of an increase in tolls,

it would not be able to reach any sort of certainty about the Project feasibility. NGTL also said that if the proposed toll treatment was found to be inappropriate, without further clarity, it would not be able to determine what revenues would result from the flow on the Komie North Section.

Views of Parties

Westcoast

According to Westcoast, if the Board were to determine that the proposed NGTL toll treatment is not appropriate for the Komie North Section, there is no basis on which to conclude that the pipeline is needed or is likely to be used at a reasonable level over its economic life. In that case, Westcoast submitted that the Board would have no alternative but to deny NGTL's application.

Westcoast noted that, through an information request, it requested NGTL to file the contracts, and NGTL declined on the basis that the contracts were confidential. Later in the proceeding, Westcoast presented a United States Securities Exchange Commission (US SEC) filing by Quicksilver, which contained the PEA and Commitment Letter, and argued that this information had already been filed publicly and was easily found.

Westcoast then questioned NGTL's motivation in not providing the documents to the Board, and asserted that NGTL had mischaracterized the nature of the contractual arrangement in the Commitment Letter.

EUG/PNG

EUG/PNG noted that the relatively meagre transportation contracts underlying the Project suggest that producers in the area have questionable confidence in the supply forecasts and/or lack the ability or willingness to bring on production within the next eight years. EUG/PNG submitted that given NGTL's apparent confidence there will be significant production in the near term, bearing the utilization risk for the Komie North Section should be acceptable.

EUG/PNG stated that CAPP's evidence was extremely narrow in scope and that its witnesses did not include a single producer active in the HRB proposed to be served by the Komie North Section.

EUG/PNG suggested that NGTL withheld information that was already publicly available by not providing the Commitment Letter and PEA to the Board. EUG/PNG submitted that it appears unlikely that NGTL did not know that Quicksilver's filings with the US SEC would be public as Quicksilver requested NGTL's waiver of confidentiality of these documents. In EUG/PNG's view, the Board and parties would have been denied essential facts in this case if Westcoast had not produced these documents.

FEI

FEI submitted that the lack of contractual support for the Komie North Section demonstrates significant long-term risk relating to utilization of the pipeline over its lifetime and that the contractual support for the proposed new pipeline is less than for new facilities of other pipeline companies. FEI further submitted that there is no proper matching of risk and reward between new and existing shippers and NGTL.

Dr. Makhholm, on behalf of FEI, indicated that the incremental toll revenues from the Komie North Section have no practical ability to countervail the incremental cost of the Project because the Komie North Section is only partially subscribed with contracts.

FEI stated that Quicksilver appears to be facing financial issues.

5.1.2 Proposed Project Design

The Board assesses the proposed project design of proposed facilities to ensure the facilities are appropriately sized.

Views of NGTL

NGTL submitted that it believes it is appropriate to continue to rely on existing practices, policies and past regulatory precedent when considering new projects or facilities that are comparable in scope and purpose to those facilities already in service on the Alberta System.

NGTL stated that it looks at the required in-service dates of new contracts combined with existing contracts to determine when the total quantity of contractual obligations will exceed the available capacity. If NGTL decides to build, it then determines the appropriate size of facilities relying on its forecast of supply and demand.

NGTL’s Guidelines, which include Extension Facilities Criteria, were originally developed as a result of EUB Decision 2000-6⁹ in which the EUB approved NGTL’s proposal that it would not construct, own or operate lateral facilities. NGTL submitted that the Guidelines assist NGTL in assessing the circumstances in which it will extend or expand the Alberta System.

Facilities that are most likely to meet future gas flows and minimize the long-term COS are considered. The best alternatives are selected for analysis using cumulative present value of the estimated future cost of service (CPVCOS). The proposed facilities are usually selected on the basis of the lowest CPVCOS and the lowest first-year capital cost. NGTL stated that it uses the CPVCOS values to compare alternative facility solutions and not as a test of project viability.

Design Basis for the Komie North Section

NGTL estimated the capital cost of the Project to be \$333.2 million as show below:

Table 5-1 Estimated Capital Costs

Component	Capital Cost (\$ millions)
Komie North Section	227.3
Fortune Creek meter station	2.5
Chinchaga Section	103.4
Total	333.2

⁹ EUB Decision 2000-6, page 62.

NGTL determined the design flow requirements for the Komie North Section based on the FT-R contracts, and the forecast of throughput, as well as an added 15 per cent peaking factor. The design flow reaches 26.4 10⁶m³/d (932 MMcf/d) in 2020 and 44.2 10⁶m³/d (1 562 MMcf/d) in 2030.

Alternatives Considered

NGTL stated that an extension of the Alberta System to Fortune Creek was the appropriate facility solution since there are no other sales gas transmission pipelines that could have been utilized in close proximity to the location.

NGTL identified two options for the Komie North Section, a 762 mm (NPS 30) pipe and a 914 mm (NPS 36) pipe. NGTL stated that the 762 mm (NPS 30) would have the higher cumulative total cost by 2020 due to the need for compression. Also, the 914 mm (NPS 36) option would avoid additional construction and decommissioning costs compared to looping a 762 mm (NPS 30) line.

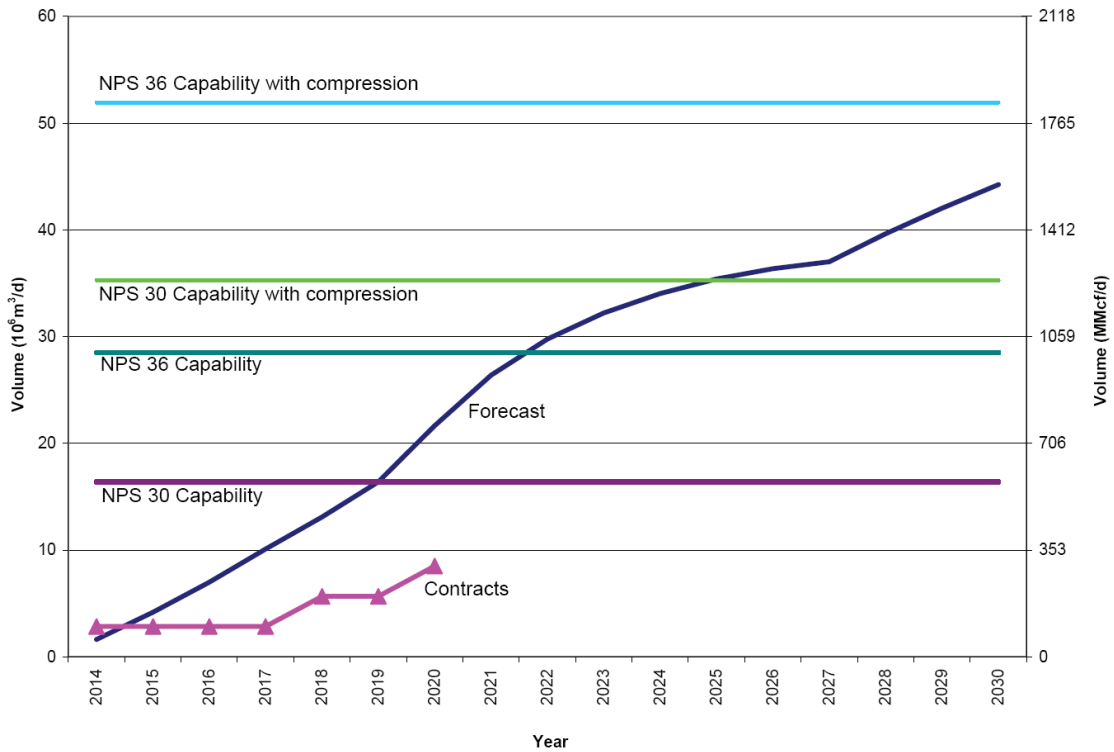
Table 5-2 provides the CPVCOS comparison for the Komie North alternatives.

Table 5-2 Cost Comparison of the Komie North Section Alternatives (\$ million)

Facility Alternatives	914 mm (NPS 36)	762 mm (NPS 30)
Initial Cost	227.3	189.4
Incremental Long-term Cost	900.5	1017.1
CPVCOS	600.8	617.2
CPVCOS difference		+16.4

Figure 5-1 shows the pipeline capabilities for the alternatives for the Komie North Section.

Figure 5-1 Komie North Section Capabilities and Supply Forecast



Source: NGTL Northwest Mainline Komie North Extension, [A2F4J4](#)

Views of Parties

CAPP

Although not commenting on the specific facilities in the Application, CAPP supported the methodology of sizing pipeline expansion to a reasonable forecast of production.

Westcoast

Westcoast submitted that building sequentially, as opposed to the large pipeline in the first place, would mean that there is no restriction to use the same route in the future. Any economies of scale with one large diameter pipeline could be wasted if the line is not located in the optimal location.

EUG/PNG

EUG/PNG submitted that NGTL’s usual and historic practices and policies are not suitable for unlimited application. These practices were developed in very different circumstances in Alberta for regulation with a different definition of the public interest.

EUG/PNG noted that uncontracted capacity of the Komie North Section is simply a no-risk option for producers in the area.

FEI

FEI submitted that it is not appropriate to indiscriminately apply the Guidelines (and therefore the associated Extension Facilities Criteria) in northeast BC where NGTL is a new entrant and where there is existing infrastructure that cannot compete on the same basis.

FEI stated that the Project, in its scope and size, is not meant to serve the needs of shippers in Alberta as they have expressed those needs. Rather, the Project is sized to meet NGTL's internal forecasts. FEI indicated that the proposed Project shifts the responsibility for decisions about the potential for long-term use of the pipeline from NGTL to the Board due to the low amount of contractual commitments compared to the pipe size.

5.2 Chinchaga Section

5.2.1 Shipper Support

Views of NGTL

NGTL originally submitted that the drivers for the Chinchaga Section are the sum of the upstream FT-R service, including the Fortune Creek meter station and incremental contract volumes with two different shippers at the Cabin and Komie East meter stations.

Given the contract delay for the Komie North Section, as well as lower contracts at the remaining receipt stations in the Upper Peace River area, total Upper Peace River area contracts reach $32.8 \times 10^6 \text{ m}^3/\text{d}$ (1 158 MMcf/d) by August 2015, approximately the same capacity as the existing Chinchaga lateral. However, NGTL also advised that, as a result of updates to its annual design forecast, the flow on the Chinchaga Section now needs to be determined considering the entire Peace River Design area as opposed to just the Upper Peace River design sub area. NGTL stated that the capacity of the Peace River Design area without the Chinchaga Section for the summer of 2014 is $177.6 \times 10^6 \text{ m}^3/\text{d}$ (6.3 Bcf/d). NGTL has contractual obligations of $185.8 \times 10^6 \text{ m}^3/\text{d}$ (6.6 Bcf/d) for that timeframe which would result in a shortfall of $8.2 \times 10^6 \text{ m}^3/\text{d}$ (289 MMcf/d) without the Chinchaga Section. Based on the change in flow, NGTL submitted that the Chinchaga Section is needed in the same time frame as originally proposed, with an in-service date in 2014.

Views of Parties

No parties raised concerns about the Chinchaga Section.

5.2.2 Project Design

Views of NGTL

NGTL stated that the existing system capability in the area of the Chinchaga Section is $32.7 \times 10^6 \text{ m}^3/\text{d}$ (1 154 MMcf/d). The total contractual commitments flowing through the Chinchaga lateral increase to $36.1 \times 10^6 \text{ m}^3/\text{d}$ (1 275 MMcf/d) as of March 2015, resulting in a system shortfall of $3.4 \times 10^6 \text{ m}^3/\text{d}$ (121 MMcf/d).

NGTL submitted that the entire Upper Peace River area capability was currently $35.3 \times 10^6 \text{m}^3/\text{d}$ (1 246 MMcf/d) and with the addition of the Chinchaga Section, this would increase to $39.1 \times 10^6 \text{m}^3/\text{d}$ (1 379 MMcf/d).

In its planning process, NGTL identified two possible flow path solutions. The South Path alternative involved flowing gas south of Hidden Lake compressor station and toward the Grand Prairie Mainline, while the East Path alternative involves flowing gas eastward toward the NCC, requiring looping of the Chinchaga Section.

NGTL submitted that the East Path has a lower initial capital cost compared to the South Path alternative and results in a capital cost saving of \$25.4 million.

Views of Parties

No parties raised concerns about the Chinchaga Section.

5.3 Ability to Finance

Views of NGTL

NGTL submitted that the estimated cost of the Project is \$333 million. NGTL intends to obtain the funds for the construction of the Project from its parent TransCanada Corporation. TransCanada Corporation would in turn fund this Project with a combination of internally-generated cash flow and funds obtained from Canadian and US capital markets.

TransCanada Corporation is rated at the “A” level by major Canadian and US credit rating agencies.

Views of the Parties

No intervenors provided comments on NGTL’s ability to finance the Project.

Views of the Board

Ability to Finance

The Board is satisfied that NGTL, through TransCanada Corporation, is capable of financing the Project.

Komie North Section

Transportation Volume

The Board found in Chapter 3 that the likelihood of the Komie North Section being utilized at a reasonable level is dependent on the Board’s determination on the appropriateness of the proposed toll treatment. The Board found in Chapter 4 that the proposed toll treatment is inappropriate. The pricing of FT-R services offered into an area of competition raises considerable uncertainty about the timing and amount of throughput

that is likely to flow on the Komie North Section. NGTL indicated that it had not assessed the forecast throughput under any other pricing assumptions. NGTL conceded that a scenario in which there is a significant increase in tolls has the potential to challenge the economic feasibility of the Komie North Section. In view of this, the Board finds that the throughput forecast provided by NGTL does not represent a solid basis for the Board to conclude that the Komie North facilities will be used and useful over its economic life.

Shipper Support

Under the proposed toll treatment, NGTL would rely on all shippers on the Alberta System to pay for the costs of the Project. The FT-R revenue under the proposed toll treatment from the signed contracts alone is insufficient to reduce future receipt tolls on the Alberta System. As such, other NGTL shippers would likely bear part of the incremental COS in the near term, and may experience later savings. With increases in delivery revenues and/or increases in throughput beyond the contract levels, shippers would receive a toll reduction sooner.

The Board finds significant risk associated with the contractual support. The three contracts for the Komie North Section are with only one shipper, which increases the risk compared to having multiple shippers.

Once the pipeline goes into service, the financial assurances NGTL can request are small compared to the cost of the Project, putting the recovery of the capital costs from users of the Komie North Section at increased risk. The delay of the first contract by 15 months also adds to the uncertainty about the contracts.

The finding in Chapter 4 that the toll treatment for the Komie North Section is inappropriate further puts the contract support at risk. Without certainty about the toll treatment, the Board has insufficient evidence to conclude that the level of contract support is appropriate.

As evidence of other shipper support, NGTL stated that shippers in the HRB support the Project, that NGTL's Tolls, Tariff, Facilities & Procedures Committee did not object and that CAPP provided support for the rolled-in methodology. Nevertheless, no potential shipper provided direct evidence in support of the Komie North Section but some NGTL/Westcoast shippers presented evidence in opposition. The Board finds that shipper support for the Project is weak.

NGTL's evidence indicated that the shipper had agreed to re-contract beginning in 2025, under certain conditions. The Board notes that this agreement was contained within a Commitment Letter that NGTL had not filed with the Board and was part of a suite of information that NGTL asserted was confidential and, when requested by Intervenors, had declined to file. This information came to light during the oral hearing when Westcoast questioned NGTL about a publicly available US SEC filing by Quicksilver, which contained the PEA and Commitment Letter. The Board is of the view that NGTL's written evidence about the conditions of shipper recontracting differed from in its

responses to Intervenor's questions at the oral hearing. The shipper's recontracting commitment in 2025 appears more certain in NGTL's written evidence than in NGTL's responses when questioned at the oral hearing.

In light of the Board's finding that the proposed toll treatment is inappropriate; the uncertainty related to throughput volumes, contractual support and recovery of costs; and the weak shipper support, there is insufficient evidence for the Board to conclude that there is a likelihood of the tolls paid by the users on the Komie North Section covering the costs in a reasonable time frame. The Board finds that the application for the Komie North Section is premature.

The Board is aware that NGTL has a policy of keeping certain information confidential. The evidence shows that in this instance, the information had not been consistently treated as confidential and the PEA and Commitment Letter were publicly available. The Board reminds NGTL that it has an obligation to provide the Board with information that will assist the Board in assessing the application before it. The integrity of the Board's processes relies on trust that the information provided by companies is accurate and complete. The Board is not prepared to find in this case that NGTL deliberately withheld such information. However, the Board expects companies to verify that the confidentiality provisions of the NEB Act are likely to apply before claiming that information is confidential. In this instance, NGTL does not appear to have taken that step.

Project Design

The Board has discretion to consider any public interest that in the Board's opinion may be affected by the issuance of a certificate or the dismissal of an application. A company's policies and practices are a public interest consideration for the Board. NGTL's historic policies and practices, including the Guidelines, the Extension Facilities Criteria, the design philosophy and the design criteria may be useful to NGTL in making decisions. However, the Board did not consider NGTL's application of these policies as determinative when assessing the Application.

With the uncertainty in both throughput volumes and contract support, the Board finds that NGTL has provided insufficient justification for the size of the pipeline. The Board notes that the contract revenues would only cover 17 per cent (34 per cent on a present value basis) of the cumulative COS. Based on the facts in this case, the Board finds this amount to be inadequate support for the pipe sizing. NGTL also justified the size of the pipe with forecasts. While building according to forecasts may be an appropriate methodology for NGTL in some situations, the Board finds NGTL did not demonstrate that it is appropriate in this case.

NGTL has not established the need for a pipeline of the proposed size to go to Fortune Creek at this time. The proposed pipeline route is to serve the needs of one specific shipper. Other potential shippers could choose to tie into a pipeline in a number of locations. According to NGTL, the timing, scope and location of future producer developments in the area are uncertain. Further, as noted by Westcoast, future capacity

for other shippers might not be needed in exactly the same location as proposed. This uncertainty supports the conclusion that the Komie North Section is premature.

Conclusion

Based on the significant uncertainty outlined above, NGTL has not satisfied the Board that the Komie North Section is likely to be used at a reasonable level over its economic life.

In Chapter 4 of this Report, the Board found the proposed toll treatment inappropriate for the Komie North Section. In this chapter the Board noted uncertainties about the economic feasibility, some of which result from the Board's finding on toll treatment. These include uncertainty about forecast throughput volumes, shipper support (including contracts) and recovery of costs. In light of these uncertainties, the Board finds that NGTL has not established that the Komie North Section is economically feasible.

The Board considered whether it could recommend approval of the Komie North Section based on NGTL expressly accepting the risk that the amount of capital cost that would be permitted in rate base would be determined in a future proceeding. This would have allowed NGTL, not its shippers, to take the risks associated with the timing and capacity of the Komie North Section. However, NGTL did not support an approach wherein it might be expressly at risk for some of the capital cost.

Also, both NGTL and Westcoast submitted that without certainty on the toll treatment, it would be challenging or even impossible for the Board to find the Komie North Section economically feasible.

The Board is of the view that there is long term potential for development of the supply in the HRB. The Board's recommendation that a certificate not be issued for the Komie North Section should not be interpreted as a reflection of the Board's opinion about the potential for the development of HRB supply.

Chinchaga Section

Shipper Support

No parties objected to the Chinchaga Section. While there is still a possibility that the Chinchaga Section may not be as well used as forecast, especially if the volumes from the Komie North Section do not materialize, the Board considers it likely that NGTL will recover the costs and that the facilities will be used at a reasonable level over their economic life.

Project Design

The Board finds that the East Path alternative is the appropriate solution to expand capacity on the Chinchaga Section.

Conclusion

The Board is satisfied the Chinchaga Section is economically feasible.

Chapter 6

Commercial Impacts to Others

The Filing Manual notes that in Part III applications the Board may take into account information about the impact on third parties, for example considering throughput volumes and financial impact on competing pipelines systems. As set out in subsection 52(2)(e) of the NEB Act, the Board may have regard to any public interest that in the Board's opinion may be affected by the issuance of the certificate or the dismissal of the application.

Views of NGTL

NGTL submitted that gas plants, existing and currently under construction in the HRB, are either fully or substantially contracted, and that Westcoast's T-North system is fully contracted at the outlet of the Fort Nelson gas plant. Based on this, NGTL stated that it does not believe there is any duplication of facilities. Further, according to NGTL, underutilization of Westcoast's existing facilities would be highly unlikely in light of the significant resource potential in northeast BC.

In addition to this lack of harm to competing parties, NGTL contended that the one contracted shipper would be a beneficiary, and that all NGTL shippers would benefit as the Project would bring new volumes to the Alberta System, and increase the liquidity and transparency of the NIT commercial hub. NGTL also suggested that bringing sales gas service into the HRB would increase competition in the gathering and processing sector.

NGTL suggested that parties such as FEI and EUG/PNG were intervening in order to protect their access to cheap supplies of natural gas.

Views of Parties

Westcoast

Westcoast submitted that the Komie North Section as proposed would virtually eliminate any competition for incremental gas supply. Westcoast submitted that while its G&P assets are long life facilities, its service agreements with producers are shorter term in nature, which gives the producers the option to leave the system to pursue other options when the agreements expire. Westcoast characterized NGTL's proposed toll treatment as being a "zero incremental toll" and stated that a zero incremental toll on the Komie North Section will attract all gas to NGTL's system as Westcoast's service agreements expire.

Dr. Cicchetti's evidence was that negotiated, competitive and market-based pipeline development in northeast BC has historically provided economic transportation services on a timely basis. Dr. Cicchetti concluded that if NGTL is permitted to introduce its regulated utility pricing model into the HRB, then existing natural gas infrastructure serving that region will likely be underutilized or even become unused and stranded.

EUG/PNG

EUG/PNG submitted that its members rely on supplies from both Westcoast and NGTL. EUG/PNG argued that gas shipped via Westcoast's system is crucially important to Pacific Northwest markets because of capacity limitations affecting alternative supply sources. However, EUG/ PNG submitted their concerns are not about the price of gas, but related to inefficient additions of infrastructure. EUG/PNG submitted that allowing the Komie North Section to proceed as proposed by NGTL would subvert meaningful competition for pipeline development in northeast BC. It described the likely short and long-term market results with potential decontracting and underutilization of existing facilities.

EUG/PNG submitted that if gas on the Westcoast system were to become more expensive, the market would pay the price to obtain the gas supplies in the short-term. In the medium to long term, EUG/PNG claimed that Westcoast's existing shippers would pursue costly alternate supply options to circumvent underutilized Zone 3 and 4 facilities. EUG/PNG noted that increasing supply from Alberta into the Pacific Northwest markets by expanding alternative existing systems would be inefficient relative to utilizing Westcoast's existing infrastructure.

According to EUG/PNG, if a level playing field was created by applying the principles of the Framework to NGTL's proposed new facilities in northeast BC, Westcoast would have no assurance of supply. However, Westcoast would have a fair opportunity to compete and to avoid the harmful effects on utilization and contracting on its system in the medium to long term.

FEI

As shippers on the Westcoast system, FEI expressed concerns about access to adequate supply and the liquidity of future commodity markets on the Westcoast system. Such access and liquidity would be harmed if, as producing gas reserves connected to Westcoast are depleted, significant new gas production in northeast BC were to by-pass the Westcoast system and connect directly to NGTL.

FEI stated that due to the relative size of the two systems, the gas moving away from the Westcoast system, resulting in lower utilization of existing T-North and T-South, would have a more significant impact on Westcoast's unit tolls than any reduction to the Alberta System tolls as a result of the Project. On behalf of FEI, Dr. Makhholm submitted that approving NGTL's application, as it stands, would go against the public interest and jeopardize economic efficiency in the area by preventing market forces from working.

Views of the Board

In making its recommendation under section 52 of the NEB Act, the Board had regard to the commercial impacts to others.

No parties expressed concern about negative commercial impact from the Chinchaga Section. Taking this into account along with the economic feasibility, gas supplies upstream of the Chinchaga Section and other matters discussed later, the Board finds that the Chinchaga Section is in the public interest.

In recommending that a certificate should not be issued for the Komie North Section, the Board had regard for the evidence from parties such as Westcoast, EUG/PNG and FEI, as well as the perspective of the potential shipper on the Komie North Section. The Board also assessed the impacts in the context of its finding, made in Section 4.1 of this Report, that the Project facilities would be part of the competition in northeast BC.

The Board finds that the construction and operation of the Komie North Section on the basis proposed by NGTL would entice volumes away from Westcoast by offering an alternative path to market with service priced well below costs. Issuance of a certificate would negatively affect Westcoast transmission (T-North and T-South) and gathering and processing facilities, as well as Westcoast shippers such as EUG/PNG and FEI. The Board typically favours competitive outcomes. In the Board's view, healthy competition in northeast BC would be promoted by pricing consistent with user-pay, economic efficiency and proper price signals to the market.

In Chapter 4 of this Report, the Board found that the proposed toll treatment is not appropriate for the Komie North Section. The Board's finding addresses a significant part of the concerns of Westcoast, EUG/PNG and FEI. The Board had regard to NGTL's intent to provide timely services to the contract shipper at Fortune Creek. However, at this time only one producer is prepared to sign firm service contracts. The first receipt contract for $2.8 \times 10^6 \text{ m}^3/\text{d}$ (100 MMcf/d) has been delayed once to August 2015. Capacity for the second contract is not needed until August 2018. Additionally, there is no evidence that any producer would contract for volume at a significantly higher toll. Consequently, the Board finds that there is no evidence that HRB producers would be negatively affected to a great degree if a certificate is not issued for the Komie North Section while the toll treatment is unresolved.

Overall, in assessing the impacts of recommending denial, and the impacts if the Komie North Section were approved as proposed, the Board finds the Komie North Section as proposed would not be in the public interest at this time.

Chapter 7

Facilities

The Board uses a risk-informed life cycle approach to ensure that NEB-regulated facilities and activities are safe and secure from their initial construction through to their abandonment. In consideration of the safety and security of proposed facilities, the Board assesses, at a conceptual level, whether the facilities are appropriately designed for the properties of the product being transported, the range of operating conditions, and the human and natural environment where the facilities would be located. Specific considerations include the company's approach to engineering design, integrity management, security, emergency preparedness, and health and safety.

When a company designs, constructs, operates or abandons a pipeline, it must do so in accordance with the NEB's *Onshore Pipeline Regulations, 1999* (OPR-99), the commitments made during the hearing, and the conditions attached to any approval. The OPR-99 references applicable engineering standards. Pertinent to this project is the Canadian Standards Association *Z662-11 Oil and Gas Pipeline Systems* (CSA Z662-11). The company is responsible for ensuring that the design, specifications, programs, manuals, procedures, measures and plans developed and implemented by the company are in accordance with the OPR-99 which includes by reference CSA Z662-11.

7.1 Description of Facilities

The Northwest Mainline Komie North Extension Project includes the Komie North Section, the Chinchaga Section, and the Fortune Creek meter station.

The Komie North Section includes approximately 97 km of new pipeline, along with a proposed meter station located at Fortune Creek. The pipeline diameter would be 914 mm (NPS 36) with the minimum wall thickness of 11.8 and 15.7 mm. This section would have a maximum operating pressure (MOP) of 9 930 kPa.

The buried pipe material for the Komie North Section would be Canadian Standards Association Z245.1, Steel Pipe (CSA Z245.1) Grade 483. The pipeline in this section would generally have a minimum depth of cover of 0.9 m. For watercourse crossings, foreign pipeline and utility crossings, and road crossings, the minimum depth would be 1.5 m.

The Chinchaga Section includes approximately 33 km of new pipeline. The pipeline diameter would be 1 219 mm (NPS 48) with the minimum wall thickness of 13.4, 12.4 and 17.8 mm. This section would have a MOP of 8 450 kPa. The buried pipe material would be CSA Z245.1 Grade 483 and Grade 690 Category II.

7.2 Design, Construction, and Operation

In discharging its regulatory oversight responsibilities, the Board uses a risk-informed compliance verification approach so that companies identify and manage integrity-related hazards that may impact safety and the environment throughout the life cycle of a project. This life cycle approach follows the project from design through construction and operation, until the pipe is abandoned.

The adequacy, implementation and effectiveness of a company's commitments are typically verified by the Board through audits, inspections and meetings. In addition, the Board performs ongoing monitoring of a company's compliance and incidents. This compliance approach is an integral part of the Board's continuous oversight of a company's pipeline and facilities. Accordingly, the Board would employ its normal compliance verification approach as a means of verifying that the company is meeting the commitments outlined in the GH-001-2012 proceeding.

7.2.1 Design

Codes and Standards

NGTL submitted that the Project would be designed, constructed and operated in accordance with OPR-99, CSA Z662.11 and all other applicable acts, codes and regulations. Programs and procedures for the Project, such as the joining program and non-destructive examination of welds, would comply with these standards.

Pipe Grade

NGTL proposed to install up to 5 km of high yield strength CSA Grade 690 (X100) for the Chinchaga Section. NGTL stated that the remainder of the Project will use CSA Grade 483 (X70) pipe.

NGTL submitted that TransCanada's proprietary Quality Management System (QMS) would be used for design, procurement and material supply.

7.2.2 Construction

NGTL indicated that it will develop and implement a construction safety program for the construction of the Project. A qualified construction manager will be appointed to fulfill the requirements of the construction safety program. The construction manager will be authorized to halt any construction activity if the work is not being performed in a manner that meets all applicable safety policies and standards. Construction will be supervised and inspected to ensure compliance with all applicable regulations, standards and codes. NGTL submitted that TransCanada's proprietary QMS would be used for construction activities.

7.2.3 Operation

NGTL stated that health, safety and environmental performance would be addressed using TransCanada's Health, Safety & Environment Management System, which would apply to the entire life cycle of the Project.

To address both routine and non-routine pipeline system maintenance, NGTL proposed the use of the applicable TransCanada Operating Procedures. The procedures describe how the work is to be accomplished, identify competency and documentation requirements, and provide references to applicable health, safety, and environmental requirements.

NGTL stated that the facilities would be monitored and controlled through the TransCanada Operations Control Centre (OCC), located in Calgary, AB. The OCC uses a computer-based supervisory control and data acquisition system to continuously monitor and control pipeline operation, including valves, compressor and metering facilities. The OCC is staffed 24 hours a day, but if it becomes unavailable, a Backup Control Centre is available at all times.

Overpressure Protection (OPP)

NGTL stated that it relies on the customer's upstream meter station OPP system. NGTL ensures the OPP system is adequate and reliable. NGTL stated that the customer's OPP system is required to be automatic and continuously operating without reliance on manual intervention. The facility will not be placed in-service until the customer OPP information is checked and verified by a professional engineer.

NGTL submitted that it ensures that the maintenance programs and their frequency meet the requirements of CSA-Z662. In addition, NGTL has the ability to audit the maintenance records and conduct site visits, if necessary, to confirm compliance.

Views of the Board

The Board is satisfied that the general design of the Project is appropriate for the intended use, and that the facilities would be constructed in accordance with the widely accepted standards for design, construction, and operation, including the OPR-99 and CSA Z662-11. The Board recommends that in any Certificate issued, that NGTL be required to design, locate, construct, install and operate the Project in accordance with the specifications, standards, and other information referred to in its Application or as otherwise agreed to in its related submissions (Condition 2, Appendix III and IV). In addition, the Board recommends that NGTL be required to update its Commitments Tracking Table (Conditions 14 and 16, Appendices III and IV, respectively) to reflect commitments made throughout this proceeding.

The Board is satisfied that the selected pipe grades and TransCanada's QMS, including the purchasing of the pipe for the Project, are appropriate. The Board recommends that any Certificate issued for the Komie North Section should include a condition that NGTL file with the Board a field joining program at least 14 days prior to start of any joining activity on that section (Condition 19, Appendix IV).

The Board recommends that the joining program for the Chinchaga Section be submitted 21 days prior to any joining activity on that section so that Board has adequate time to review the joining program for the high yield strength CSA Grade 690 (X100) pipe (Condition 16, Appendix III). Additionally, NGTL's pressure testing program must comply with CSA Z662 requirements for the grades of the pipe selected. The Board also recommends that NGTL be required to submit a field pressure testing program 14 days prior to pressure test (Condition 5d, Appendices III and IV).

The Board is of the view that construction practices must address safety considerations. To facilitate the ongoing review by the NEB of NGTL's safety plans and performance, the Board recommends that NGTL should be required to submit a construction safety manual 14 days prior to construction (Condition 5a, Appendices III and IV). Additionally, the Board recommends that NGTL should be required to submit a construction schedule, as well as construction progress reports (Condition 4, Appendices III and IV, and Conditions 15 and 18, Appendices III and IV, respectively).

Because NGTL relies upon the customer's upstream meter station OPP system, the Board recommends that any Certificate issued include a condition requiring NGTL to file with the Board, at least 14 days prior to commencement of operation, a statement by a professional engineer that the OPP system complies with CSA Z662-11 Section 4.18.1.2 (Conditions 23 and 26, Appendices III and IV, respectively).

7.3 Pipeline Integrity

A management system, in general, is a framework of processes and procedures used by an organization to fulfill its objectives. It would normally contain elements such as accountabilities, procedures for tasks and tools for auditing and continuous improvement. Programs for integrity management may be part of a company's overall management system, or may be one of a series of independent programs. The primary goal of an Integrity Management Program (IMP) is to prevent leaks and ruptures caused by in-service degradation of the pipeline.

NGTL submitted that TransCanada's IMP would be used to monitor and ensure the integrity of the Project. The principal objectives of the IMP are to:

- ensure the safety of the public and employees;
- reduce environmental impacts;
- protect the installed pipelines and facilities; and
- maintain reliability.

NGTL submitted that it employs a regular preventative maintenance program, which includes aerial patrols, in-line inspection (ILI), monitoring of cathodic protection (CP), and installation of pipeline markers at road and watercourse crossings. Mitigation activities, if necessary, are initiated based on results of risk assessments of this information.

Geotechnical Permafrost

The Komie North Section is located within the sporadic discontinuous permafrost (SDP) zone. The independent consulting engineer's geotechnical assessment report shows that there are nine individual locations of known permafrost occurrences along the Komie North Section of the proposed Project. The lateral extent of the permafrost occurrence was estimated to range from 10 to 170 m in length and range from 1.8 to 8 m in thickness. NGTL will consider the recommendations for additional characterization measures for the Komie North Section, as described in the geotechnical reports. There is no sign of permafrost along the Chinchaga Section. There is no evidence of slope instability of any watercourse crossing locations for either section of the Project.

NGTL identified several design techniques that it would employ to mitigate the potential effects on the integrity of the Komie North Section of the pipeline: heavy wall pipe to reduce stresses caused by potential thaw settlement; greater burial depth or sand padding of the pipeline trench to address the larger magnitude of estimated thaw settlement at that location; and screw anchors to control pipeline buoyancy.

NGTL stated it will implement the following measures in order to address any integrity concerns related to additional stress induced by excessive thaw settlement in the operation of the pipeline:

- as-built surveys will be conducted to establish the initial pipeline profiles at the identified locations of the permafrost;
- visual inspections will be carried out regularly at the permafrost locations in the early years of the operation. The frequency of the inspection will be determined based on the observed amount of settlement;
- topographic and depth of cover surveys would be conducted at locations where significant amounts of settlement (i.e., greater than 60 per cent of the "order of magnitude" allowable settlement) are observed;
- ILI may be triggered if the observed settlements are confirmed; and
- stress analyses will be performed based on the settlement profiles (i.e., changes from the as-built profile to that from subsequent surveys and possibly ILI) and site specific soil parameters.

NGTL advised that ILI is one of a suite of tools that can be used to assess the pipeline for changes related to number of threats. NGTL further advised that if changes are observed to the pipeline or the RoW, and ILI is the optimal assessment approach, the appropriate ILI tool will be run.

When the Board released for comment a draft condition regarding an ILI program and baseline assessment of the pipeline, NGTL advised that the draft condition was unnecessary. NGTL submitted that it would implement a variety of measures prior to implementing ILI and that implementing ILI within a year of the Project being placed into service would be unnecessary in light of the other measures proposed by NGTL.

The Board questioned NGTL at the hearing about the role of ILI within integrity management of a pipeline. NGTL advised that its integrity management team would determine whether ILI was appropriate.

7.3.1 Corrosion Prevention

NGTL submitted that corrosion prevention would involve three main components: pipe coatings, CP, and design for ILI.

The pipe would be externally coated with fusion-bonded epoxy or abrasion-resistant coating where the pipe is to be installed using boring or drilling methods. Above-ground assemblies would be primed and painted.

In addition to the pipe coating, an impressed current CP system would be installed. The system would include ground beds and rectifiers. Deep groundbeds are preferred, to minimize surface ground disturbance and to locate the groundbed in a more stable operating environment where it would not be subject to surface environmental conditions.

CP test points would be installed, where required, along the pipeline and at road, foreign pipeline and utility crossings. These would allow the effectiveness of the operation of the CP system to be monitored.

The Chinchaga Section will share the same CP system as the Chinchaga Lateral Loop No. 2, Tanghe Creek Lateral and Tanghe Creek Lateral Loop. NGTL submitted that no new dedicated CP systems are required for the protection of the Chinchaga Section.

New CP systems will be required for the Komie North Section. A CP system has been constructed at the existing Cabin Receipt meter station kilometre post (KP) 97, which has enough capacity to support the southern part of the Komie North Section. NGTL is proposing a secondary CP system at the Fortune Creek meter station. If a third CP system is found to be required, thermal electrical generation units could be installed at the block valves at the 31.8 km and/or 64 km chainage of the pipeline. Post-construction CP surveys would dictate future CP requirements.

Views of the Board

The OPR-99 requires companies to develop and implement an IMP. NGTL's evidence is that ILI is one of a suite of tools within its IMP. However, NGTL does not have firm timelines to do ILI and would not commit to doing an ILI. The Board is of the view that NGTL's IMP should include the use of ILI to provide information related to dents, wrinkles, ovality, bends, cracking, metal loss and other threats to the integrity of the pipe for both the Chinchaga and Komie North Sections, and also include the use of ILI for the prevention of deleterious effects due to SDP for the Komie North Section. The Board recommends that any Certificate issued should include the following condition regarding the IMP and ILI:

Within 90 days of the date that the approved [Chinchaga Section or Komie North Section] is placed in service, NGTL shall file with the Board for approval its

Integrity Management Program. NGTL shall develop an In Line Inspection (ILI) Program for continual assessment for the Project and shall include the ILI Program in the IMP. The ILI program shall include the type of tools to be run and the frequency in which inspections will be conducted (Conditions 24 and 27a, Appendices III and IV, respectively).

The Board is satisfied with NGTL's proposed mitigation measures in the design of the pipeline in the SDP zone. However, the Board is of the view that in the early stage of the pipeline operation, ILI of the pipe in the SDP zone provides important data on the integrity status of the pipeline. The baseline data can be compared to the data from subsequent ILI runs, thereby enhancing NGTL's ability to identify potentially threatening changes to the integrity of the pipeline, including relative pipe movement. The Board is of the view that any Certificate issued for the Komie North Section should include the following condition:

Within 365 days of the date that the approved Komie North Section is placed in service, NGTL shall conduct an In Line Inspection using high resolution caliper and inertial tools as a baseline for Komie North Section. NGTL shall file with the Board as soon as available, summaries of the baseline assessment that must include dents, wrinkles, buckles and pipe movement anomalies (Condition 27b, Appendix IV).

The Board is satisfied that NGTL's corrosion prevention measures are appropriate for the Project.

Chapter 8

Safety, Security and Emergency Preparedness and Response Programs

8.1 Safety and Security Programs

In accordance with the OPR-99, regulated companies are required to implement mitigative and preventative measures for all risks posed by hazards and threats to the integrity of pipeline systems, the public and workers, and to the environment. The Board monitors a company's compliance with the conditions of approval and with legislation during all stages of the construction and operation of a project. The Board evaluates the need for specific compliance verification activities and determines whether an on-site inspection or review of the company's management systems (audit) is necessary. This includes an evaluation of company programs to address safety and security.

As mentioned in Section 7.2.2, NGTL will develop and implement a construction safety program for the Project. In addition, NGTL stated that the construction manager will coordinate obtaining all safe work permits, and all personnel will be required to complete a contractor safety orientation before working on the worksite. Safety requirements will include a daily safety meeting (or meetings), led and documented by the prime contractor, as well as the use of incident reporting forms and procedures that will include near hit reporting.

The security management during construction and operation of the Project would be governed by TransCanada's overarching corporate security policy and any related operating procedures, as amended from time to time. Consistent with this standard, a security assessment would be conducted and documented, and a security management plan will be developed and implemented for the Project.

Views of the Board

The Board is of the view that construction practices must address safety and security considerations. In any Certificate issued, NGTL should be required to file the following manual and reports with the Board, prior to the commencement of construction:

- a construction safety manual for the Project (Condition 5a, Appendices III and IV); and
- semi-monthly construction progress reports (Conditions 15 and 18, Appendices III and IV, respectively), which includes information on environmental, safety and security issues; issues of non-compliance; and measures undertaken for their resolution.

The construction safety manual and semi-monthly construction progress reports would facilitate the ongoing review by the NEB of NGTL's safety plans and performance.

Should a certificate be issued, the Board recommends that NGTL be required to submit a project specific Security Management Plan (Condition 5c, Appendices III and IV). The Security Management Plan would facilitate the Board's review of NGTL's security management approach with respect to the Project.

8.2 Emergency Preparedness and Response (EPR) Program

On 24 April 2002, the NEB issued a letter to all oil and gas companies under the jurisdiction of the Board entitled "Security and Emergency Preparedness and Response Programs". The letter set out the NEB's expectations for appropriate and effective EPR programs. In addition to the Board's 24 April 2002 letter and, in accordance with the OPR-99, the Board's guidance under OPR-99 Sections 32-34, indicates that a company should develop and implement EPR programs for all aspects of their operations.

NGTL stated in its application that emergency management during construction and operation of the pipeline would be governed by TransCanada's overarching corporate Emergency Management System.

NGTL noted that coordination with emergency response agencies would be undertaken to ensure that appropriate communications, understanding and cooperation are in place in case of an emergency. NGTL also stated that TransCanada's Integrated Public Awareness (IPA) Program, which provides information to the public including the location of facilities and steps to be taken in the event of an emergency, would be adopted for the Project. NGTL further stated that the IPA program would take effect once the Project is in operation.

Views of the Board

The Board is of the view that the measures proposed by NGTL to address emergency preparedness and response are appropriate. The Board reminds NGTL that it must submit updates to its EPR program as required by section 32 of the OPR-99, if a Certificate is issued.

In any Certificate that is issued, the Board recommends that NGTL submit a project specific Field Emergency Response Plan (Condition 5b, Appendices III and IV) to be implemented should an emergency occur during construction activities.

Chapter 9

Public Consultation

The Board's expectations for an applicant regarding public consultation are set out in the Board's Filing Manual. Companies are expected to undertake an appropriate level of public involvement, commensurate with the setting, nature and magnitude of a project. The Board considers public involvement to be a fundamental component during each phase in the lifecycle of a project (that is, project design, construction, operation and maintenance, and abandonment) in order to address potential impacts of that project. This chapter addresses NGTL's public consultation program. NGTL's Aboriginal engagement and consultation are discussed in Chapter 11, Aboriginal Matters.

9.1 NGTL's Public Consultation Program

9.1.1 Consultation with Landowners, Residents, and Other Potentially Affected People

Views of NGTL

NGTL designed and conducted its public consultation program, referred to as its "stakeholder engagement program", in accordance with the principles of TransCanada's community relations best practices.

NGTL's stakeholder engagement program consisted of four phases:

1. Stakeholder Identification and Material Development: focused on the identification of potentially interested and affected stakeholders in the Project area and the development of engagement materials including letters, maps, and informational fact sheets to be used for Project notification purposes.
2. Stakeholder Notification: focused on the initial public disclosure of the Project and solicitation of stakeholder input with activities such as local advertising, mail-outs, and responding to inquiries and follow up with stakeholders.
3. Ongoing Stakeholder Engagement and Regulatory Filings: involves outreach and ongoing stakeholder communication and engagement to continue to provide status updates of the Project, solicit input on potential effects and benefits, address and resolve issues and advise stakeholders about the process to provide comment to the Board.
4. Post Filing through Construction: continues through the regulatory review process and the completion of construction of the facility and includes regular updates and ongoing communication with all stakeholders, and responding to inquiries and emerging issues. When operations commence, stakeholder engagement activities are transitioned to TransCanada's regional office in Fort St. John, BC and the Wildrose operating region in northern Alberta.

NGTL's stakeholder engagement program usually identifies the following stakeholder groups as potentially interested or affected parties:

- landowners (private and crown), occupants and other land users;
- elected officials and staffing communities in the vicinity of the proposed pipeline route;
- emergency responders;
- Aboriginal communities;
- federal and provincial government officials;
- non-governmental organizations; and
- environmental non-government organizations.

NGTL implemented its stakeholder engagement program in August 2010 with a mail-out regarding the potential Project and its plans for related engagement and environmental activities. NGTL indicated that those stakeholders and Aboriginal communities that potentially would have been affected by the Townsoitoi and Pyramid pipeline sections were included in the program. NGTL noted that with the removal of the two lines from the Project Application, these stakeholders are no longer on the Project notification distribution list.

NGTL provided to the Board a stakeholder list with communication materials used, and a summary log of engagement activities implemented throughout the stakeholder engagement program.

NGTL indicated it sought to provide a comprehensive understanding of NGTL's potential expansion plans to local and regional stakeholders. NGTL pointed out that information was provided on all potential projects in the region to all stakeholders on the list.

NGTL indicated that through its stakeholder engagement program the activities undertaken included public notification of the Project, identification of stakeholders, community meetings and open houses, ongoing stakeholder engagement and dialogue, distributing Project updates and communication materials and responding to inquiries and emerging issues.

In October 2010, NGTL commenced its broad stakeholder engagement activities, which included face to face meetings with elected officials and their staff, and with community representatives; telephone calls; Project advertising; multiple mail-outs; and an open house in Fort Nelson, BC. Public notices were published in November 2010 in Fort Nelson, as well as in local newspapers in northwestern Alberta.

In November 2010, an informational open house was held in Fort Nelson. Approximately 30 community members attended and spoke with Project team members about the proposed Project. Attendees indicated there were no outstanding questions that required follow-up after the open house. NGTL noted that discussions focused largely on local contracting and business opportunities, and Aboriginal engagement activities. The latter is discussed in more detail in Chapter 11 of this Report.

In September 2011, NGTL published notices in local newspapers, providing an update regarding change in customer requirements and the anticipated application filing date. NGTL confirmed no inquiries had been received from stakeholders as a result of either the mail-out update or public notices.

Throughout the course of the stakeholder engagement program, the Project team monitored and responded to inquiries received via email or telephone. NGTL submitted in its application that there are no outstanding questions remaining from those email/telephone inquiries. Inquiries were generally related to continued interest in receiving Project updates and vendor/service provider-related questions.

NGTL noted that there was input and inquiries from stakeholders with regard to local contracting opportunities, economic benefits and tax benefits of the proposed Project. No issues with respect to the methods of construction or ongoing operation of the Project were raised throughout the course of the stakeholder engagement.

9.1.2 Consultation with Government Stakeholders

NGTL held meetings with municipal stakeholders, including the Northern Rockies Regional Municipality (NRRM) and all northwestern Alberta municipalities potentially interested in the Project, to see if they had received the mail-outs and whether they had any issues, questions or concerns with the Project. NGTL indicated that none of the municipalities indicated that they had issues or questions at that time but requested to be kept informed as the Project progressed.

NGTL noted a presentation held in October 2010 with the NRRM and Fort Nelson Chamber of Commerce regarding the Project. NGTL confirmed that no outstanding concerns resulted from this presentation.

In November 2010, NGTL held discussions with municipalities at which time there was no indication that informational open houses in Alberta were required. NGTL continued consultation activities during the Board's regulatory process, and committed to making itself available to host public open houses in the event municipal staff or elected officials thought these would be worthwhile.

In January through May 2011, NGTL met with all potentially affected municipalities to understand the Project's potential socio-economic impacts on and benefits for these communities. Specifically, NGTL met with representatives from the following communities and municipalities: NRRM, Town of Manning, County of Northern Lights, Clear Hills County; Peace River Regional District and the City of Fort St. John. NGTL submitted that while no specific concerns were identified about the Project during these discussions, the communities were interested in learning about the possible local benefits and economic opportunities that may result from the Project. NGTL noted that NRRM expressed interest in the tracking and reporting of local contracting, Aboriginal engagement activities and the NEB regulatory review process.

In July 2011, NGTL held telephone discussions with all potentially affected municipalities to confirm they received updates, and to determine whether they had any outstanding questions.

NGTL indicated that no concerns were raised at this time. NGTL submitted that questions focused on economic benefits associated with the proposed Project.

Views of the Board

The Board is satisfied that NGTL's public consultation program for the proposed Project has met the objectives set out in the Board's Filing Manual.

The Board acknowledges NGTL's efforts to identify and consult with potentially affected and interested stakeholders, and its commitment to continuing public consultation throughout the life of the Project.

The Board finds NGTL's consultation program to have been appropriate given the nature and scope of the Project.

Chapter 10

Lands

The Board's Filing Manual sets out the Board's expectations for lands information to support an application for a Certificate under section 52 of the NEB Act. Applicants provide a description and rationale for the proposed route of the pipeline, the location of associated facilities, and the permanent and temporary lands required for the Project. Applicants also provide a description of the land rights proposed to be acquired and the land acquisition process, including the status of land acquisition activities.

10.1 Routing

A number of high level routing approaches were provided to the Board during the proceeding. These approaches are referred to in Chapter 11, Aboriginal Matters. Table 11-2 provides a list of routes discussed and conditions 13 and 14 (Appendix IV) relate to the concerns raised by parties with respect to this matter. This chapter focuses on NGTL's applied-for preferred route.

Views of NGTL

The total length of the pipeline RoW required for the Project is approximately 130 km. The Komie North Section is approximately 97 km long from the Horn River Mainline in BC to the proposed Fortune Creek meter station. The Chinchaga Section is approximately 33 km between the Chinchaga meter station and the Meikle River compressor station. Section 2.1.1 and Figure 2-1 in Chapter 2, Introduction, provide an overview of the location of major project components.

NGTL submitted that it used the following criteria to determine its preferred route:

- paralleling existing linear disturbances to the extent possible to:
 - reduce the potential fragmentation of wildlife habitat;
 - maximize the amount of temporary work space (TWS) located on existing RoWs or other disturbances;
 - reduce the amount of new non-contiguous RoW required; and
 - reduce the development of new access into remote areas.
- reducing the number of watercourse crossings;
- avoiding or reducing effects on identified environmentally sensitive areas;
- avoiding areas of unstable terrain;
- avoiding lands of designated status such as parks, cemeteries, Indian Reserves, and known historic sites;
- ensuring the facilities are economical to construct and operate;
- consulting with regulatory agencies to understand issues that may need to be addressed in the routing process;

- avoiding routing in close proximity to urban development and residences where practical;
- reducing the number of road crossings, particularly highways and paved roads, where practical;
- ensuring construction feasibility of watercourse, rail and road crossings along selected route; and
- minimizing the effects on water supply systems and groundwater resources.

NGTL submitted that potential route options were initially identified and evaluated using: available topographic maps, aerial photographs and satellite imagery; aerial and ground reconnaissance of the route options to consider terrain and geotechnical conditions; local information gathering; and land and resource ownership and use data.

NGTL chose existing pipeline corridors as the preferred alignment for the Chinchaga Section. The proposed route for this section is parallel to and contiguous with existing NGTL RoW for the majority of its length. NGTL submitted that it did not consider route alternatives for this pipeline section because 94 per cent was looping.

NGTL submitted that where looping was not an available option, it considered route alternatives, and when evaluating possible route alternatives, it considered a number of constraints such as: tie-in locations and primary control points, potential project effects, terrain influences, current and future land uses, existing corridors, crossings of natural and man-made obstacles, environmentally or culturally significant areas, historical resources, intermediate valve sites, access development, construction time frame, future system expansion, costs, and external and internal stakeholder participation.

NGTL took into account two primary tie-in control points at the western and eastern edges of the Komie North Section: the proposed Fortune Creek meter station and the approved Horn River Mainline (Cabin Section). NGTL stated that it attempts to choose a pipeline route that minimizes the distance between tie-in points as much as feasible to ensure the facility is economical to construct and operate.

NGTL presented evidence comparing its preferred route with two route alternatives for the Komie North Section. The route alternatives were developed taking into consideration the tie-in control points and the routing constraints listed above.

NGTL submitted that it selected the preferred route because it satisfied the routing considerations, minimized potential effects on caribou habitat and reduced the overall length of the pipeline.

Views of Fort Nelson First Nation (FNFN)

FNFN raised concerns about NGTL's preferred route and routing matters, as discussed in Chapter 11, Aboriginal Matters.

10.2 Land Requirements

Views of NGTL

NGTL submitted that the entire general route of the Project is located on provincial Crown land in BC and Alberta. NGTL determined there were no private land owners affected by the Project.

NGTL submitted that the Project requires a minimum construction RoW width of 32 m. NGTL noted that it would make use of existing disturbances where possible to reduce the amount of new disturbance. NGTL stated that in addition to the minimum construction RoW width, further land would be required to accommodate construction activities. The new land required for the construction RoW would vary in width from approximately 18 to 47 m. NGTL provided drawings of the varying and TWS dispositions in Appendix 9-1 of its Application.

NGTL stated that the construction RoW will be made up of both TWS and permanent RoW. TWS would be required for staging, constructability, safety and access within the Project area. The extent and locations of the TWS would be identified prior to and during construction as required. NGTL does not require TWS lands for operational needs, so those lands would be returned to the provincial Crown after construction, cleanup, and reclamation.

Three mainline block valve sites would be required on the Komie North Section and one on the Chinchaga Section. The valve sites would be located within the boundaries of the permanent pipeline RoW. NGTL submitted that the land rights would be acquired from the Crown.

The pipeline would cross other existing linear facilities and require road access. NGTL submitted that it would obtain the necessary agreements and approvals from each third-party owner.

10.3 Land Rights and Land Acquisition

Views of NGTL

NGTL commenced its land acquisition process in the fourth quarter of 2011. NGTL provided sample documentation for land acquisition pursuant to sections 86 and 87 of the NEB Act with its Application. In its additional evidence, NGTL indicated it had received the necessary land rights from the Province of Alberta and that the acquisition of lands from the Province of BC was in progress.

Views of the Board

Chinchaga Section and Komie North Section

The Board finds that NGTL's anticipated requirements for permanent and temporary land rights, including the varied width of RoW and the process for the acquisition of these land rights, are acceptable.

The Board finds that the route evaluation criteria applied by NGTL are appropriate. The Board is of the view that the proposed preferred route looping the Chinchaga Section, which is parallel to and contiguous to existing NGTL RoW for the majority of its length,

is acceptable. The Board also finds that NGTL's proposed preferred route for the Komie North Section is acceptable and notes that it minimizes the distance between the control tie-in points, and reduces overall social and environmental impacts.

However, the Board's finding that the proposed preferred route is acceptable is not a determination as to the best detailed route of the pipeline. The Board determines the best detailed route of the pipeline during the detailed route approval process, as set out in sections 31 to 39 of the NEB Act.

Komie North Section

NGTL's preferred route for the Komie North Section traverses lands in the Two Island Lake area. FNFN raised concerns about routing in the Two Island Lake area. The potential impacts associated with pipeline routing to traditional land and resource use, and a proposed condition to address re-routing in the Two Island Lake area are discussed in Chapter 11, Aboriginal Matters.

Chapter 11

Aboriginal Matters

The Board takes Aboriginal interests and concerns into consideration before it makes any recommendation that could have an impact on those interests. Whenever a project has the potential to impact the rights or interests of Aboriginal groups, the Board obtains as much evidence as possible in that regard so that it may assess and consider the potential impacts in its recommendation. The Board relies on its Enhanced Aboriginal Engagement (EAE) initiative, as described below, and its hearing process, so that its records are as complete as possible.

Before filing a project application, proponents are required by the Board's Filing Manual to identify, engage and consult with potentially affected Aboriginal groups. The Board's Filing Manual requires applicants to consult with potentially impacted Aboriginal groups early on in the project planning and report on these activities to the Board. Further, the Filing Manual requires that an application include detailed information on any issues or concerns raised by Aboriginal groups or that are otherwise identified by the applicant.

Aboriginal groups are encouraged to engage with proponents so that their concerns are identified early, considered by the proponent, and potentially resolved before the application is filed. The Board also encourages Aboriginal groups with an interest in a project to participate in the hearing process in order to make the Board aware of their views and concerns. There are various ways for Aboriginal groups to participate. These can include letters of comment, oral statements, written evidence, oral testimony by elders and members of Aboriginal groups, cross-examination of the project proponent and other parties, and final argument.

11.1 The NEB's Enhanced Aboriginal Engagement Process for the Komie North Expansion

The Board's EAE initiative aims to provide proactive contact with Aboriginal groups that may be affected by a proposed project, and to help Aboriginal groups understand the Board's regulatory process and how to participate in that process. The Board reviews the completeness of the list of potentially affected Aboriginal groups identified in the proponent's Project Description filed with the MPMO. The Board may suggest to the proponent any necessary revisions. The Board then sends letters to each potentially impacted Aboriginal group on the revised list, informing them of the project as well as the Board's regulatory role in respect of the project, and offers to provide further information on the hearing process. Following issuance of these letters, Board staff follow up, respond to questions or conduct information meetings, where requested.

The NEB carried out its EAE activities for the Project between the receipt of the Project Description in May 2011 and the receipt of the Project Application in October 2011. Duncan's First Nation (DFN), Doig River First Nation (DRFN), the Métis Nation of BC (MNBC) and Métis Nation of BC Northeast Region (MNBC NE) requested additional information about the Board's hearing process. Information sessions were held in July 2011.

11.2 Participation of Aboriginal Groups in the Regulatory Process

As set out in Table 11-1, two Aboriginal groups registered as Intervenor in the GH-001-2012 proceeding. No other Aboriginal groups expressed interest in becoming involved in the proceeding.

Table 11-1 Aboriginal Groups Registered as Intervenor

Intervenor	Intervenor Status Granted	Filed Evidence	Presented Witness(es)	Final Argument
Fort Nelson First Nation	•	•	•	•
Acho Dene Koe First Nation	•	•	•	•

11.3 Aboriginal Engagement and Consultation

NGTL's preferred route of the Komie North Section crosses lands located to the south and west of Two Island Lake. FNFN expressed concerns about the preferred route passing through the Two Island Lake area. Table 11-2 lists the route approaches that were raised during the proceedings regarding re-routing the Komie North Section to avoid the Two Island Lake area.

Table 11-2 Routing Approaches for Komie North Section

Date	Routing Approach	NEB Regulatory File ID
October 2011	NGTL Preferred Route, and Route Alternatives Option 1 and Option 2	<u>ADF4K9</u>
18 May 2012	FNFN letter to NGTL presenting the Two Island Lake area identified on a map for routing alternative to be considered	<u>A2T6T4</u>
28 June 2012	NGTL West Option 1 and East Option 2 of Two Island Lake area (Komie KP 35.5 to KP 55)	<u>A2Y1V9</u>
27 August 2012	FNFN Alternative 1 - approximately KP 18.6 to KP 57.7	<u>A2Y1W0</u>
13 September 2012	NGTL Response to FNFN Alternative 1	<u>A3A0H8</u>
4 October 2012	FNFN Alternative 2	<u>A3A8R8</u>
17 October 2012	FNFN/NGTL Alternative 3	<u>A3C4Z2</u>

Views of NGTL

NGTL's primary goals for its Aboriginal engagement process were to:

- determine potential effects on the current use of the lands for traditional purposes;
- identify sites of cultural and historical importance in the Project area;
- obtain local and traditional knowledge about the Project area;
- develop appropriate mitigation to reduce potential effects; and
- identify potential socio-economic effects and suitable opportunities.

NGTL indicated that it commenced its Aboriginal Engagement process for the Project in September 2010. The Project would not cross any reserves or lands that have been designated for reserve status.

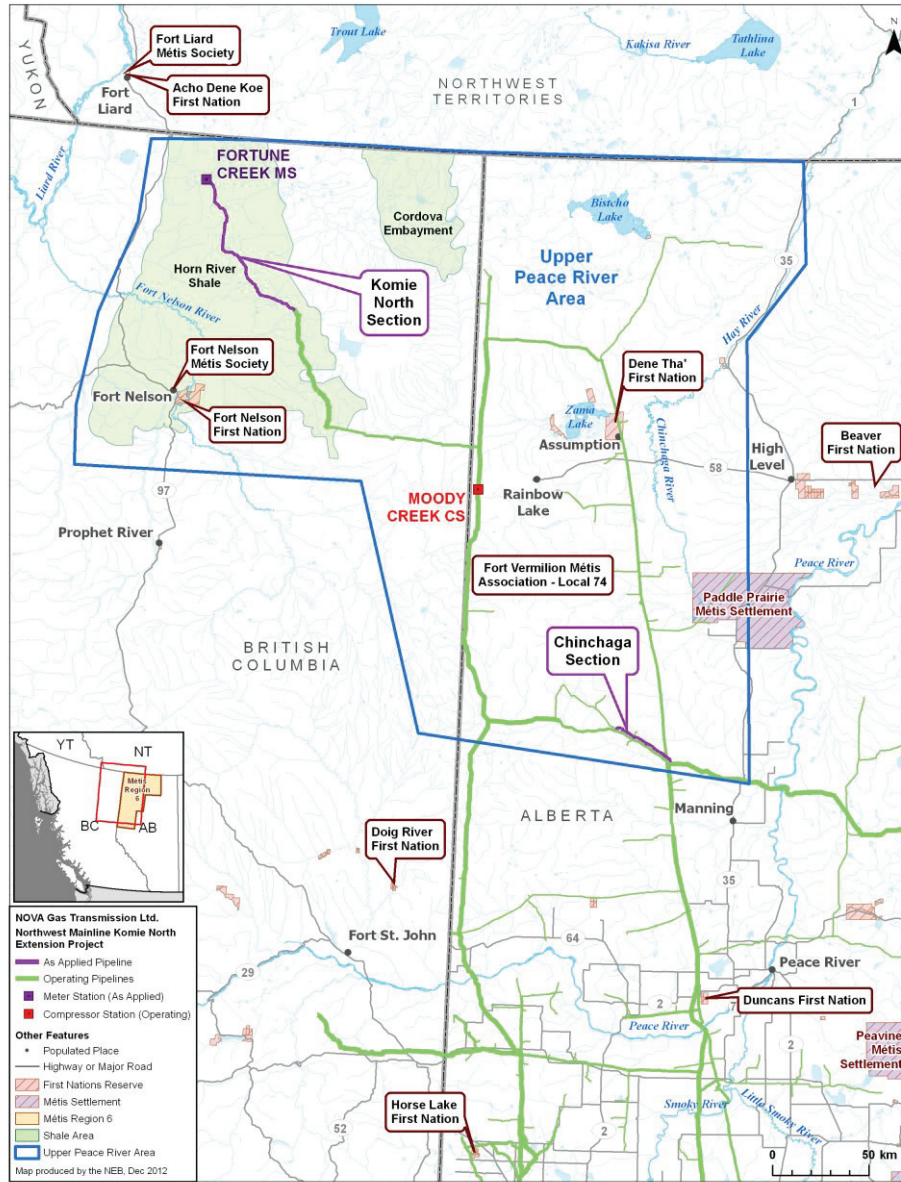
NGTL initially identified potentially affected Aboriginal groups for the Project based on whether Aboriginal communities' traditional territories, as Aboriginal communities defined them, were within 50 km of the Project. NGTL indicated it considered Project location relative to reserves under the *Indian Act*, First Nations' asserted traditional territories, Métis settlements and communities, and Métis harvesting and traditional use areas. NGTL identified potentially affected Aboriginal groups using publicly available information, its own operating experience and established network of contacts with Aboriginal and Métis communities and by consulting with appropriate government departments.

NGTL engaged in Project discussions with the following Aboriginal groups:

- Acho Dene Koe First Nation (ADKFN)
- Dene Tha' First Nation (DTFN)
- DFN
- FNFN
- Fort Vermilion Métis Settlement Local 74 (Fort Vermilion Local 74)
- Métis Nation of Alberta (MNA)
- MNBC
- Paddle Prairie Métis Settlement (PPMS)
- Beaver First Nation (BFN)
- DRFN
- Fort Liard Métis Society (FLMS)
- Fort Nelson Métis Society (FNMS)
- Métis Nation of Alberta – Region 6 (MNA Region 6)
- Horse Lake First Nation
- MNBC NE
- West Moberley First Nation

Figure 11-1 shows the location of the Aboriginal communities engaged on the Project.

Figure 11-1 Aboriginal Communities Engaged on the Project



Source: NGTL Northwest Mainline Komie North Extension Application, [A2F4K5](#)

NGTL’s Aboriginal engagement program involves activities which are reported on in Aboriginal engagement logs filed with NGTL’s evidence.

NGTL’s Aboriginal engagement program involved a number of activities including:

- mail-out of information including a summary of the Project scope, a map showing the Project area, proposed routes and site locations, and NGTL contact information;
- face to face meetings to discuss the mail out, including scope with pipeline corridor maps, various communication and engagement methods, initial feedback, methods to assess the potential effects of the Project (map review, field visits and participation in

environmental and traditional land use studies), timing of meetings for follow up, potential community investment opportunities and contracting and employment opportunities during construction; and

- follow up face to face meetings to obtain understanding of the interests and issues, if any and to coordinate the group participation in the Project-related field studies.

Views of FNFN

FNFN presented evidence with respect to the Komie North Section and the surrounding areas, which are encompassed by FNFN's traditional territory.

FNFN expressed concerns about the routing of the Komie North Section. They submitted that there is no evidence that the currently proposed route takes into account FNFN values, cultural priorities or traditional use and knowledge. FNFN stated that before NGTL filed its application with the Board, NGTL did not share alternative routes with FNFN or ask for any input on alternative routing. FNFN submitted that NGTL had not provided FNFN with a meaningful opportunity to discuss alternatives to NGTL's preferred route of the Project and that FNFN wanted to discuss routing with NGTL to avoid, or mitigate to the greatest degree possible, impacts to the area close to Two Island Lake.

Reply of NGTL

NGTL stated that it was made aware of FNFN's concerns regarding routing in the Two Island Lake area in May 2012. NGTL submitted that it shared proposed routing information for the Komie North Section with FNFN commencing August 2010 and consulted with FNFN regarding the Project for over two years.

NGTL submitted that FNFN has had numerous opportunities to identify potential Project impacts to traditional land and resource use along the proposed pipeline route, since FNFN participated in field surveys during the biophysical field programs for the Project from October 2010 to October 2011.

NGTL submitted that since it became aware of FNFN's concerns regarding routing in the Two Island Lake area, NGTL had communicated with FNFN about these concerns through emails, phone calls and meetings. NGTL and FNFN discussed alternative routing proposals between June 2012 and October 2012 when the oral hearing commenced. NGTL was clear, however, that it had not agreed to an alternative route.

NGTL committed to provide updates to the Board regarding NGTL's engagement with FNFN concerning NGTL's preferred route, potential new mitigation measures with respect to that route and whether there would be opportunities to deflect from that route. NGTL further committed to providing the Board an update regarding NGTL's engagement with FNFN concerning the potential alternative route shown in Exhibit C-21-20 and the issue overall.

11.4 Potential Impacts of the Project on Aboriginal People

Views of NGTL

As part of its Aboriginal engagement activities, NGTL undertook traditional ecological knowledge (TEK) and traditional land use (TLU) studies for the purposes of identifying traditional land and resource use issues or concerns relating to the Project. Other activities undertaken with Aboriginal communities engaged on the Project included discussions concerning supplemental TEK studies, TLU field work and report writing, and ongoing engagement about economic opportunities and community investment interests.

NGTL stated that it works with interested Aboriginal and Métis communities to integrate TLU and TEK into project planning and the design of mitigation measures, as appropriate and as available.

NGTL indicated that TEK is information collected along a proposed pipeline route and in the vicinity of proposed facilities. TEK is incorporated into the biophysical studies in NGTL's Environmental and Socio-Economic Assessment (ESA), and is used to assess the potential effects of a project on the environment and to design appropriate mitigation. TLU studies are undertaken on Crown land and the information that is gathered is used to determine the potential impacts a project may have on the identified TLU area and the ability of the users to maintain the current traditional use of the land.

NGTL submitted that each of the communities engaged on the Project was invited to provide TEK during the biophysical field studies and interest was high. Numerous communities participated. Certain communities preferred to collect TEK by conducting their own community-directed study. NGTL stated it supports these community-directed studies and continues to work with the communities. DRFN and FNFN field survey participants accompanied the environmental field study teams, but were directed to collect TEK for their own reporting and not to share TEK with NGTL for the purpose of NGTL's ESA.

NGTL stated that TLU studies were undertaken with the participation by Aboriginal groups, and were either community-led or community-directed (that is, through a third party consultant). The DTFN, DRFN, and FNFN elected to complete community-directed TLU studies for the Project, while ADKFN/FLMS, BFN, DFN, MNA/MNA Region 6/Fort Vermilion Local 74, and PPMS worked with NGTL and its consultants.

NGTL indicated that during the Aboriginal engagement and field program participants identified issues and interests that ranged from general to specific. The Board's EA Report discusses NGTL's evidence respecting Aboriginal groups' issues and interests about traditional land and resource use.

NGTL submitted that during the TEK and TLU field program, the community participants identified a site of cultural significance along the Komie North Section. NGTL stated that it participated with Aboriginal communities identifying mitigation measures that will avoid any disturbance to the site.

NGTL conducted wildlife, vegetation and wetlands realignment surveys in mid-September 2011. Three Aboriginal participants, ADKFN, DTFN, and FNFN, requested a minor realignment of the Komie North Section at KP 15 to accommodate TEK. NGTL stated that ADKFN and DTFN were satisfied with the minor route realignment and no site specific mitigation was identified at that time.

NGTL indicated that the general issues and interests raised included:

- effects on streams as a result of water crossings;
- effects on wildlife and wildlife habitat, including caribou;
- notification of and communication with trappers; and
- economic opportunities for local contractors.

DFN and FNFN have expressed interest in NGTL's monitoring program. NGTL stated that it continues to discuss with Aboriginal groups options to have an Aboriginal monitor on-site to observe any mitigation measures that are implemented, and if required, to report back to the Aboriginal group. Construction activities that could have an Aboriginal monitor on-site include watercourse crossings, beaver dam removals, and previously determined sites of interest.

Views of ADKFN

ADKFN presented evidence with respect to the Komie North Section and the surrounding area.

ADKFN participated in the TEK program studies and a TLU study for the Project. Through these studies, and written and oral evidence, ADKFN identified their issues and interests which are discussed in the EA Report.

Although ADKFN raised concerns about Crown consultation, their evidence is that they support NGTL's pipeline application. ADKFN also advised that upon being notified about the Project, they began to negotiate their relationship with NGTL, and had reached a long-term agreement with NGTL in this regard.

Views of FNFN

FNFN presented evidence with respect to the Komie North Section and the surrounding area.

FNFN participated in NGTL's TEK program studies, but directed its field survey participants to collect TEK for their own reporting and to not share TEK with NGTL for the purpose of NGTL's ESA for the Komie North Section.

FNFN conducted a third party TLU study for the Komie North Section. FNFN submitted that the TLU information in its Written Evidence and Supplementary Evidence represents the results of all the TLU information collected to date (end of August, 2012) by FNFN within the 5 km local study area that FNFN used for the Komie North Section.

FNFN expressed concerns that NGTL had reached conclusions about the potential impacts of the Komie North Section before FNFN had assembled the results of its TLU work.

FNFN identified their issues and interests through studies, and written and oral evidence. FNFN's issues and interest appear in the EA Report, and in Chapter 10, Lands, and Chapter 12, Environment and Socio-Economic Matters of this Report. FNFN also identified issues and interests with respect to NGTL's preferred route of the Komie North Section in the Two Island Lake area. FNFN's routing concerns, though briefly mentioned in Chapter 10, Lands, are primarily discussed here.

In late May 2012, FNFN filed written evidence indicating they have concerns about impacts to traditional land use in the Two Island Lake area. FNFN's written evidence included a map that showed a square box encompassing an area that FNFN identified as possible routing alternatives.

FNFN stated that on 15 June and 20 June 2012 representatives of the FNFN Lands Department met with representatives of NGTL to discuss the issue of routing. FNFN's view was that the purpose of the meetings was to provide NGTL with an opportunity to justify the original proposed pipeline route and that there was little or no discussion of the possibility of varying the route to accommodate FNFN concerns.

In August 2012, FNFN proposed an alternative route from approximately KP 18.6 to KP 57.7 on the Komie North Section. FNFN indicated that their suggested alternative route would satisfy their TLU concerns in the Two Island Lake area and would have less environmental impact than NGTL's preferred route. FNFN later submitted, after further consideration, that their August 2012 alternative route had a number of potential challenges in terms of viability and environmental impact.

In early October 2012, FNFN proposed a second alternative route which was intended to address concerns raised by NGTL with respect to FNFN's first alternative route. FNFN indicated that this option overlaps more extensively with a Lake and Riparian Zone contained in FNFN's Strategic Land Use Plan. FNFN stated that this proposed alternate route would have a lower impact than both previous alternatives and NGTL's proposed route but still required further review and analysis, with the assistance of NGTL.

At the oral portion of the hearing in October 2012, FNFN presented a document (Exhibit C-21-20) which contained a mark-up of a route map with alternatives being considered by NGTL in discussion with FNFN. NGTL agreed that the map was a hybrid of an alternative route provided by FNFN and then revised by NGTL.

Through an information request, the Board asked FNFN to identify how it would be directly affected by NGTL's proposed preferred route in the Two Island Lake area, to comment on NGTL's proposed mitigation measures and to indicate whether FNFN proposed any additional mitigation measures. The Board also asked FNFN to explain their view as to why it is necessary that the proposed route avoid the Two Island Lake area.

In response to the Board's request, FNFN asserted their traditional use in the Two Island Lake area. FNFN identified physical impacts resulting from land clearing and habitat removal which would affect boreal caribou, moose and trails. FNFN further identified increased risks in spills and incidents that would exacerbate existing fears amongst FNFN members of contamination of

wild foods and water. FNFN also identified concerns with respect to the withdrawal of water from Two Island Lake for hydrostatic testing purposes.

FNFN stated that NGTL's mitigation measures were marginal or vague, and did not address the impacts of the Komie North Section on the FNFN. FNFN submitted that the route should be altered so as to avoid the Two Island Lake area and that site-specific mitigation measures should apply to an alternative route to do everything possible to mitigate remaining effects.

Overall, FNFN was of the view that NGTL did not incorporate their concerns and remaining outstanding issues with routing in the Two Island Lake area.

Reply of NGTL

NGTL indicated that it applied its standard criteria for route selection when selecting its preferred route for the Komie North Section. NGTL submitted that its preferred route has been continually assessed and refined in NGTL's ESA and subsequent field studies. NGTL stated that FNFN had not presented evidence that affects NGTL's findings in its ESA.

In late June 2012, NGTL acknowledged FNFN's written evidence filed on 29 May 2012 that FNFN has traditional land use concerns in the Two Island Lake area. NGTL indicated that in mid-June 2012 it met with FNFN and soon after followed up by a conference call to discuss concerns. NGTL indicated it continues to engage with FNFN to discuss their concerns and develop mitigation measures to resolve the identified issues.

NGTL indicated that when discussing routing concerns with FNFN, NGTL acknowledged the concerns of FNFN regarding their traditional use of the Two Island Lake area. Additionally, NGTL submitted that it agreed to provide additional information and confirmed that NGTL would also consider additional mitigation measures in this area to reduce potential effects on FNFN land and resource use. NGTL indicated that on 28 June 2012, it provided FNFN with a supporting map and written discussion regarding routing of the Komie North Section in the Two Island Lake area.

In its response to FNFN's August 2012 proposal, NGTL stated that it was unwilling to adopt FNFN's proposed route for a number of reasons, including environmental and engineering concerns. NGTL provided further analysis comparing its preferred route to the FNFN's August 2012 proposal in response to the Board's requested desktop study. NGTL concluded that FNFN's August 2012 route may not be feasible from a geotechnical perspective, and would likely result in "worse" environmental impacts than NGTL's preferred route.

As described under Reply of NGTL in Section 11.3, NGTL made commitments regarding consultation related to routing and mitigation measures.

During final argument, NGTL indicated it would continue to consult with the FNFN and that NGTL would report to the Board about these consultations and on any proposed re-route on the Komie North Section in the Two Island Lake area. NGTL submitted, however, that at present the only routing option before the Board is NGTL's applied-for preferred route.

Views of the Board

The Board's Filing Manual requires applicants to initiate early discussions and consultation with Aboriginal groups potentially affected by a proposed project. This allows for early exchange of information and for matters of concern to be considered at the onset of the project and through the design phase. The extent of the consultation that needs to be carried out is determined, to a large extent, by the nature, scope and setting of a project.

The Board considers that NGTL's Aboriginal engagement program, including NGTL's process to identify potentially affected Aboriginal groups was appropriate given the nature, scope and setting of the Project. The Board is satisfied that all Aboriginal groups potentially affected by the Project were provided with sufficient information about the Project, and had an opportunity to make their views known to NGTL and the Board.

The Board is of the view that it is appropriate to facilitate continued discussions concerning routing alternatives for the Komie North Section in the Two Island Lake area. However, changes in routing that may be satisfactory to FNFN may not be satisfactory to other affected parties. As well, to the extent that environmental and socio-economic impacts have not been assessed in the EA Report, NGTL must provide information that supports any re-routing in the Two Island Lake area. Consequently, the Board recommends that any Certificate issued with respect to the Komie North Section include a re-routing condition that provides a mechanism for NGTL to propose re-routing in the Two Island Lake area and to provide the necessary supporting environmental, socio-economic and consultation information (Condition 14, Appendix IV). Further to the Board's discretion associated with detailed route approval under sections 31 to 39 of the NEB Act, the Board will consider and evaluate the appropriateness of the detailed route to be proposed by NGTL.

As discussed in the EA Report, the Board recommends that any Certificate issued with respect to the Komie North and Chinchaga Sections include a condition requiring NGTL to file Aboriginal Consultation Reports for five years to inform the Board about its ongoing consultation with Aboriginal groups (Condition 12, Appendices III and IV). In addition, as discussed in the EA Report, the Board recommends that any Certificate issued with respect to the Komie North Section include an Access Management Plan Condition (Condition 13, Appendix IV).

The Board notes that potential impacts of the Project and all known environmental and socio-economic effects caused by a change in the environment are assessed in the Board's EA Report (Appendix VII). Matters assessed in the Board's EA Report include but are not limited to effects on current traditional uses by Aboriginal people, wildlife, fish, vegetation and water resources, which in turn include issues identified by ADKFN and FNFN through studies, and oral and written evidence.

NGTL used a number of tools to identify potential impacts of the Project on the interests of Aboriginal groups. The Board notes NGTL's commitment to implementing measures to mitigate potential impacts on traditional land use. The Board also notes NGTL's

commitment to continuing to consult with interested Aboriginal groups and to consider any additional mitigation measures resulting from those consultations.

The Board is of the view that with the implementation of NGTL's environmental protection procedures and mitigation measures, and the conditions imposed by the Board in Appendix III and IV, any potential Project impacts on Aboriginal interests, are likely to be minimal and will be appropriately mitigated.

Chapter 12

Environment and Socio-Economic Matters

The Board requires applicants to identify the effects projects may have on bio-physical and socio-economic elements, to indicate the mitigation the applicant would implement to reduce those effects, and to assess the significance of any residual effects once the mitigation has been applied.

This chapter summarizes the EA process used by the NEB for the Project. It also addresses the socio-economic issues assessed under the legislation.

12.1 Environmental Assessment Process

The CEA Act 1992, which was in force at the time the Project application was filed, required a screening level EA to be conducted. Pursuant to the CEA Act 1992 *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements*, the NEB coordinated the involvement of responsible authorities (RAs) and federal authorities (FAs), as required by the CEA Act 1992. Transport Canada (TC) and the Department of Fisheries and Oceans were RAs and Environment Canada (EC), Health Canada and Natural Resources Canada were FAs.

The Board prepared a draft scope of the EA, which was attached to the 24 January 2012 GH-001-2012 Hearing Order and posted on the Canadian Environmental Assessment Registry on 3 February 2012. The Board requested comments on the draft scope of the EA of the Project from the public. No comments were received and the scope of the EA was determined on 26 March 2012.

On 26 April 2012, during the Board's assessment of the Project, the Government of Canada introduced the JGLP Act, which included the CEA Act 2012. Portions of the JGLP Act came into force on 6 July 2012, repealing the CEA Act 1992 and enacting the CEA Act 2012. The CEA Act 2012 applies to projects that are designated projects, as defined in the CEA Act 2012, filed after 6 July 2012 (the date the JGLP Act came into force).

The *Project List Regulations* do not require an assessment of the Project.¹⁰ The Minister of Environment did not designate the Project.¹¹ Therefore, the Project is not a designated project and does not require an assessment under the CEA Act 2012. However, pursuant to the CEA Act

¹⁰ A designated project is defined in the CEA Act 2012 as a physical activity that is designated by the *Project List Regulations* (Regulations) or in an order by the Minister of Environment. The Regulations pursuant to the CEA Act 2012 indicate that the proposed construction of an oil or gas pipeline more than 75 kilometres in length on a new right of way, as defined in those regulations, requires an assessment pursuant to the CEA Act 2012.

¹¹ Pursuant to subsection 14(2) of the CEA Act 2012, which is section 52 of the JGLP ACT, the Minister of Environment may, by order, designate a physical activity that is not prescribed by the Regulations if, in the Minister's opinion, either the carrying out of that physical activity may cause adverse environmental effects or public concerns related to those effect may warrant a designation.

1992, TC and EC did participate in the hearing process by submitting information requests to NGTL and filing letters of comment to the Board, in the case of the latter department.

The Board has considered all environmental and socio-economic matters under the NEB Act.

The Board issued a draft EA Report on 26 November 2012 for a 10 day public comment period. The Board received comments from FNFN on 6 December 2012, and reply comments from NGTL on 11 December 2012. The final EA Report reflects comments received during the public comment period. The EA Report includes the Board's assessment of the bio-physical and socio-economic effects of the Project and mitigation measures. It also includes an evaluation of the likelihood of significance for any adverse effects and recommended conditions to be included in any Board approvals.

For details regarding the Board's assessment of the environmental and socio-economic effects evaluated pursuant to the NEB Act, the reader is referred to the EA Report in Appendix VII.

12.2 Socio-Economic Matters considered under the NEB Act

The Board expects that companies identify and consider the impacts a project may have on socio-economic conditions including the mitigation of negative impacts and the enhancement of project benefits.

Socio-economic effects that are caused by changes to the environment are included in the EA Report in Appendix VII. Direct socio-economic effects caused by the existence of the Project itself are discussed below. Other economic effects are addressed in Chapter 5, Economic Feasibility, and Chapter 6, Commercial Impacts to Others.

Infrastructure and Services

Views of NGTL

NGTL submitted that the Project could result in changes to demand for regional and community infrastructure and services from temporary residents and Project activities. NGTL noted that Project construction-related activities would involve moving personnel, equipment and material. NGTL also noted that an increase in construction related traffic would affect regional transportation infrastructure, disrupt local traffic patterns and could result in an increased risk to public safety.

NGTL noted that local residents were concerned about the effects of how Project-related traffic would interact with communities and community residents. In response to issues and concerns raised, NGTL indicated NRRM would be conducting a transportation corridor study and, in addition, NGTL would implement a Traffic Control Management Plan.

NGTL submitted that the Liard Highway 77 and the Alaska Highway 97 are used by local residents and industry, as well as serving as tourism corridors and would also be used to transport equipment and personnel to the Komie North Section. In order to minimize the potential effects of the Project, NGTL indicated pre-clearing and construction timeframes would not overlap with the tourism season.

NGTL indicated recreational snowmobile users in Alberta present along the Chinchaga Section regional study area raised public safety concerns. To mitigate these concerns, NGTL committed to coordination with local authorities to provide flagging and signage at road crossings to alert the public about the construction activities in the area. NGTL also stated mitigation measures have been developed to address potential conflicts between the Project and recreational snowmobile activities during clearing and construction.

NGTL stated that the potential effects of the operation of camps would result in a potential change in the delivery of physical infrastructure and services, potentially disrupt local use of or access to existing infrastructure or services and increase road traffic.

NGTL noted that for the Komie North Section, NRRM indicated that industry was responsible for the high commercial accommodation occupation rates in Fort Nelson, leaving limited vacancy for other types of users. NGTL pointed out that there were hotels, motels, or inns in Fort Nelson with over 800 rooms and between 221 and 235 outdoor camping facilities and a temporary construction camp near Fort Nelson. NGTL also noted that Manning, AB officials indicated that the town welcomes the use of commercial accommodation for the Chinchaga Section. NGTL submitted there are hotels in Manning with over 100 rooms and approximately 70 campsites and a temporary construction camp will be located on an existing site near Manning. To mitigate commercial accommodation related concerns, NGTL stated that construction workers would be housed in temporary construction camps located near each pipeline section of the Project during construction. NGTL noted that commercial accommodation would be used by employees during planning and pre-construction only.

NGTL indicated in response to possible disruption of traffic to Highway 97 and 77, its Traffic Management Plan would be implemented before construction activities begin. NGTL also submitted it provides signage regarding labour, equipment, access route closures and activity schedules to municipal and provincial authorities before beginning work. At the hearing, NGTL agreed to provide similar notification to Aboriginal communities potentially affected by the possible disruption of traffic.

Employment and Economy

Views of NGTL

NGTL indicated the key Project-related economy and employment issues raised in its ESA are a provision of employment and contracting opportunities to local services and businesses, and benefits Aboriginal communities whose traditional territory is crossed by the Project.

The Project is expected to result in net positive impacts on employment and the economy. Construction of the Project is expected to result in expenditures of approximately \$342 million dollars spent in Canada on goods and services. Economic activity associated with Project construction is estimated to generate increased government revenue in Canada of approximately \$33.3 million, which would amount to an increase in revenue for municipal, provincial and federal governments. NGTL suggested that construction would result in an increase in Canadian employment of approximately 2 300 person-years for approximately \$155 million in increased labour income. NGTL also indicated that economic activity is estimated to generate increased tax

revenue for municipal governments in British Columbia and Alberta over the estimated 30 year operating life of the Pipeline.

NGTL submitted that Project-related local employment and economic benefits were identified as valued components during stakeholder engagement, meetings and discussions. NGTL indicated that the Project would enhance the local employment and the economy because of spending on labour, goods and services. NGTL's assessment of employment and the economy also considers employment and contracting potential for local and regional businesses, including Aboriginal communities. NGTL submitted that, where there are qualified local contractors, those contractors would have the opportunity to participate in the contracting process. NGTL anticipates that some local and regional businesses, including Aboriginal businesses, would realize economic benefits from the construction of the Project.

Local, regional and Aboriginal businesses would participate by providing goods, services, and technical expertise and would realize economic benefits from the construction. Pre-construction activities have already generated short term job opportunities and training for some Aboriginal community members, as well as local procurement in some of the municipalities.

In response to issues raised by Aboriginal communities and municipalities near the pipelines with regards to local opportunities and benefits, NGTL indicated it would continue to focus its community investment program on civic investment, education, environment, health and human services. NGTL stated it would continue to offer its Natural Resources Field Training Program for local youth to obtain general safety and industry skills.

NGTL submitted enhancement measures would be implemented to facilitate qualified Aboriginal and local businesses to obtain contracts, including: measures such as on-going discussions to better understand capabilities; provision of advance notice about contract and job opportunities and requirements; advance notice of sub-contracting tendering processes; and inclusion of Aboriginal participation component in subcontract bids would be considered in the bid evaluation.

NGTL senior management indicated its commitment to having Aboriginal participation in the Project. NGTL indicated that clauses relating to the use of Aboriginal businesses would be included in the prime contractor requests for proposal, including bid reviews to include how they intend to use Aboriginal businesses and report on this. NGTL also indicated that discussions have been held with Aboriginal groups about opportunities, and all Aboriginal groups have had the opportunity to participate in environmental field work.

NGTL submitted evidence that the Project would have a negative impact on local economies in the short term. In NGTL's view, given safety considerations, the construction activity will limit some hunting and trapping activities for short periods of time. Measures have been put into place to reduce interference of the Project with these activities. Furthermore, consideration of the results of the effects assessment for aquatics, wetlands, vegetation and wildlife demonstrate that equivalent land use capability will be maintained. Based on these considerations, NGTL determined the potential residual effects to be not significant.

NGTL indicated existing protocols between FNFN and TransCanada contain provisions that include economic participation throughout the project lifecycle by FNFN band members and contractors.

In response to FNFN concerns about community investment and support, NGTL provided an investment figure of \$23.7 million of most recent Project-related spending in the area by prime contractor, sub contracts and direct employment of First Nations businesses and community members. In addition, NGTL submitted for this Project, the various studies and ongoing community investments and TransCanada support of First Nation initiatives, FNFN being a key First Nation in the area of the Project footprint received more than \$12.5 million of benefit.

Views of FNFN

FNFN raised concerns about economic costs and benefits of the Project, including the extent of employment and contracting opportunities for FNFN.

Views of the Board

With respect to the potential socio-economic effects, the Board promotes the identification and consideration, by regulated companies, of the effects of projects on individuals, groups, communities and societies. This consideration includes a project's positive and negative socio-economic impacts and any proposed enhancement and mitigation measures.

The Board notes NGTL's evidence regarding the positive economic effects of the Project. The Board considered NGTL's intention and commitments to providing, where possible, opportunities for local employment and economic participation in the Project, including opportunities for interested local businesses and contractors and Aboriginal groups.

The Board recognizes the positive effects of employment and economy during construction and operation. The Board is satisfied with NGTL's efforts in responding to stakeholder concerns regarding employment and the economy and its commitment to ongoing discussions on these matters. The Board recommends that NGTL follow through on its commitment to working closely with the prime contractor to ensure local and Aboriginal groups have the opportunity for employment and the provision of services during the construction phase of the Project.

The Board notes NGTL's plans to address the Project's socio-economic impacts, and NGTL's commitment to adhere to the recommendations and mitigation measures identified during the proceedings. In any Certificate that is issued, the Board recommends that NGTL be required to file a Commitments Tracking Table (Conditions 14 and 16, Appendices III and IV, respectively) to reflect commitments made throughout this proceeding.

Chapter 13

Section 58 Facilities

13.1 Application for Section 58 Facilities

In its application for the Project, NGTL requested an exemption order under subsection 58(1) of the NEB Act for the Chinchaga and Komie North Sections. NGTL requested exemption from the requirements of subsections 31(c), 31(d) and section 33 of the NEB Act with respect to borrow pits for hydrostatic testing purposes, stockpile sites, contractor yards, construction camps and the Fortune Creek meter station and associated access road (collectively, the Section 58 Facilities).

The Board has discretion under section 58 of the NEB Act to make an exemption order, and to impose such terms and conditions as it considers proper.

To avoid duplication and promote efficiency, the Board has considered the potential environmental and related socio-economic effects of the Section 58 Facilities in the EA Report. The EA Report includes an evaluation of the likelihood of significance for any adverse effects of the Project, inclusive of the Section 58 Facilities.

Views of NGTL

NGTL submitted that temporary infrastructure such as construction camps, stockpile sites, contractor yards and borrow pits will be required during construction. NGTL indicated that the Section 58 Facilities related to the Chinchaga Section include borrow pits for hydrostatic testing purposes and stockpile sites while the Section 58 Facilities related to the Komie North Section include construction camps, stockpile sites and contractor yards, and the Fortune Creek meter station and associated access road.

NGTL submitted it would require permanent land rights from the Crown for the pipeline RoW and associated facilities; and TWS from the Crown for pipeline construction.

NGTL confirmed that a potential alternate Komie North Section camp site, contractor yard, some stockpile sites and access roads required for hydraulic testing are not finalized. NGTL committed to consult with and to provide the FNFN or any other impacted party with the locations of any additional ancillary sites that may be required, and to file this information with the Board. NGTL indicated its intention to reclaim temporary camps and return those lands to the provincial Crown.

NGTL is seeking an exemption from the detailed route provisions of the NEB Act for the Section 58 Facilities as all of the land required for these sites is provincially-owned Crown land.

Views of FNFN

FNFN raised concerns about the location of facilities subject to a section 58 exemption order, including construction camps, and the impacts of the location of those facilities on FNFN's traditional land and resource use. These impacts of those facilities are discussed in the EA Report.

Views of the Board

The Board's EA Report concludes that, with the implementation of the mitigation proposed by NGTL and the conditions recommended by the Board, the Project is not likely to have significant adverse effects. The Project considered in the EA Report includes the Section 58 Facilities.

The Board is satisfied that the land requirements for the Section 58 Facilities are appropriate.

The Board concludes that it would be in the public interest to grant NGTL the exemptions it requested under subsections 31(c), 31 (d), and section 33 of the NEB Act. As a result, NGTL will be exempt, pursuant to Section 58 of the NEB Act, from the requirement to file a plan, profile, and book of reference for the Section 58 Facilities. For administrative efficiency, the Section 58 Facilities for the Chinchaga Section and Komie North Section will be subject to separate exemption orders which will include the terms and conditions set out, respectively, in Appendices V and VI.

The Board is of the view that the Exemption Orders for the Chinchaga and Komie North Sections are necessary only if the Governor in Council directs the Board to issue Certificates in respect of those sections of the Project. Consequently, pursuant to subsection 19(1) of the NEB Act, the Board has decided that Exemption Orders for the Section 58 Facilities for the Chinchaga and Komie North Sections take effect only upon the issuance of a Certificate in respect of the corresponding section of the Project.

Appendix I

Glossary of Terms, Abbreviations and Units

AB	Alberta
ADKFN	Acho Dene Koe First Nation
Alberta System	the physical facilities owned by NGTL to provide gas transmission service in Alberta and beyond
Applicant, NGTL or the Company	NOVA Gas Transmission Ltd.
Application	Application to the Board, pursuant to section 52 of the <i>National Energy Board Act</i> for a Certificate of Public Convenience and Necessity for the Northwest Mainline Komie North Extension
BC	British Columbia
BFN	Beaver First Nation
Board or NEB	National Energy Board
CAPP	Canadian Association of Petroleum Producers
CEA Act 1992	<i>Canadian Environmental Assessment Act 1992</i>
CEA Act 2012	<i>Canadian Environmental Assessment Act 2012</i>
Certificate	Certificate of Public Convenience and Necessity issued under section 52 of the <i>National Energy Board Act</i> authorizing the construction and operation of a pipeline
COS	cost of service
cost index	the cost per km for a particular pipe diameter relative to the cost per km through NPS 48 pipe.
CP	cathodic protection
CPVCOS	Cumulative Present Value of the Estimated Future Cost of Service
CSA	Canadian Standards Association
CSA Z245.1	Canadian Standards Association Z245.1, Steel pipe
CSA Z662-11	Canadian Standards Association Z662-11, Oil and Gas Pipeline Systems
DFN	Duncan's First Nation

DRFN	Doig River First Nation
DTFN	Dene Tha' First Nation
EA	Environmental Assessment
EA Report	Environmental Assessment Report
EAE	Enhanced Aboriginal Engagement
EC	Environment Canada
EPP	Environmental Protection Plan
EPR	Emergency Preparedness and Response
ESA	Environmental and Socio-Economic Assessment
EUB	(Alberta) Energy and Utilities Board
EUG/PNG	Pacific Northwest Group, comprised of Export Users Group, Northwest Industrial Gas Users and Northwest Pipeline GP
Extension Facilities Criteria	four criteria that NGTL applies in making a decision regarding extension facilities to include in the Alberta System (see page 4 of NGTL's Guidelines)
FA(s)	Federal Authority(ies)
FEI	FortisBC Energy Inc.
FLMS	Fort Liard Métis Society
FNFN	Fort Nelson First Nation
FNMS	Fort Nelson Métis Society
Fort Vermilion Local 74	Fort Vermilion Métis Settlement Local 74
Framework	Framework for Light Handed Regulation
FT-R	Firm Transportation - Receipt
G&P	gathering and processing
Guidelines	Report of Guidelines for New Facilities Task Force, Version 2–18 October 2011
HRB	Horn River Basin
ILI	in-line inspection
IMP	Integrity Management Program
IPA	Integrated Public Awareness
JGLP Act	<i>Jobs, Growth and Long-term Prosperity Act</i>

KP	kilometer post
LNG	Liquefied Natural Gas
looping	when one pipeline is laid parallel to another, usually to increase capacity
MOP	maximum operating pressure
MNA	Métis Nation of Alberta
MNA Region 6	Métis Nation of Alberta – Region 6
MNBC	Métis Nation of British Columbia
MNBC NE	Métis Nation of BC Northeast Region
MPMO	Major Projects Management Office
NCC	North Central Corridor
NEB	National Energy Board
NEB Act or Act	<i>National Energy Board Act</i>
NEB Report or Report	<i>National Energy Board Report</i>
NGTL	NOVA Gas Transmission Ltd.
NGTL Base Case	a price forecast provided by NGTL
NIT	NOVA Inventory Transfer system
NPS	nominal pipe size (in inches)
NRRM	Northern Rockies Regional Municipality
OCC	Operations Control Centre
OD	outside diameter
OGIP	original gas in place
OPP	overpressure protection
OPR-99	<i>Onshore Pipeline Regulations, 1999</i>
Part III	NEB Act Sections dealing with facilities
Part IV	NEB Act Sections dealing with tolls
PEA	Project Expenditure Agreement
PFP	Participant Funding Program
Pipeline	the proposed Northwest Mainline Komie North Extension
PPBoR	Plan, Profile and Book of Reference

PPMS	Paddle Prairie Métis Settlement
Project	the proposed Northwest Mainline Komie North Extension
QMS	Quality Management System
Quicksilver	Quicksilver Resources Canada Inc.
RA(s)	Responsible Authority(ies)
rate base	the amount of investment on which a return is authorized to be earned, which typically includes net plant in service plus an allowance for working capital
RoW	right-of-way
SDP	sporadic discontinuous permafrost
Section 58 Facilities	the proposed borrow pits for hydrostatic testing purposes, stockpile sites, contractor yards, construction camps and the Fortune Creek meter station and associated access road with respect to the NGTL's requested exemption from the requirements of subsections 31(c), 31(d) and section 33 of the NEB Act
TC	Transport Canada
TEK	Traditional Ecological Knowledge
TLU	Traditional Land Use
TransCanada	TransCanada PipeLines Limited
TWS	temporary work space
US SEC	United States Securities Exchange Commission
Westcoast	Westcoast Energy Inc. carrying on business as Spectra Energy Transmission
Westcoast System	A natural gas pipeline system extending from points in the Yukon Territory, the Northwest Territories, Alberta and BC to a point on the international boundary between Canada and the US near Huntingdon, BC. The system includes residue or sales gas transmission pipelines, raw gas gathering pipelines and gas processing plants.
X70	CSA Grade 483 Pipe
X100	CSA Grade 690 Pipe
Zone 1	Westcoast Raw Gas Transmission Service
Zone 2	Westcoast Treatment Service
Zone 3 or T-North	Westcoast System Mainline Transportation Service Northern
Zone 4 or T-South	Westcoast System Mainline Transportation Service Southern

List of Units

10^3	thousand
10^6	million
10^9	billion
10^{12}	trillion
Bcf/d	billion cubic feet per day
CDN\$	Canadian dollars
GJ	gigajoule
km	kilometer
kPa	kiloPascals
m	metre
m^3	cubic metre
m^3/d	cubic metre per day
Mcf	thousand cubic feet
mm	millimetre
MMBtu	million British thermal units
MMcf/d	million cubic feet per day
Tcf	trillion cubic feet
US\$	US dollars

Conversion Factors

1 GJ = 0.95 Mcf
1 Mcf = 1 MMBtu

Appendix II

List of Issues

The Board has identified but does not limit itself to the following issues for discussion in the proceeding:

1. The need for the proposed facilities.
2. The economic feasibility of the proposed facilities.
3. The potential commercial impacts of the proposed project.
4. The appropriateness of the proposed NGTL toll treatment for the Project application.
5. The potential environmental and socio-economic effects of the proposed facilities, including those to be considered under *the Canadian Environmental Assessment Act*.
6. The appropriateness of the general route and land requirements for the pipeline.
7. The suitability of the design of the proposed facilities.
8. Potential impacts of the project on Aboriginal interests, including Aboriginal and treaty rights.
9. Consultation with the public and Aboriginal groups on the Project.
10. The terms and conditions to be included in any approval the Board may issue.

Appendix III

Certificate Conditions for the Chinchaga Section

In these conditions, the expression “commencing construction” means the clearing of vegetation, ground-breaking and other forms of right-of-way (RoW) preparation that may have an impact on the environment, but does not include activities associated with normal surveying activities. In these conditions, where any condition requires a filing with the National Energy Board (Board or NEB) “for approval”, NGTL must not commence that action until the approval is issued.

The terms below (in bold) have the following meanings:

Footprint – The area directly disturbed by the construction and clean-up activities associated with the Chinchaga Section, including associated physical works and activities (e.g., permanent RoW, temporary workspace for construction, tie-in facilities).

Project – The Project will extend and expand the Alberta System by approximately 130 km of pipeline at two locations in northwestern Alberta (AB) and northeastern British Columbia (BC). It is comprised of:

- the Komie North Section in northeast BC, which is an extension to the Horn River Mainline of approximately 97 km of 914 mm (NPS 36) outside diameter pipe and related facilities; and
- the Chinchaga Section in northwest Alberta, which is a pipeline loop of approximately 33 km of 1 219 mm (NPS 48) pipe and related facilities.

Certificate – The Certificate of Public Convenience and Necessity, pursuant to section 52 of the *National Energy Board Act* (NEB Act), authorizing the construction and operation of the Chinchaga Section facilities applied for under section 52 of the NEB Act.

General Conditions

1. Condition Compliance

NGTL shall comply with all of the conditions contained in this Certificate, unless the Board otherwise directs.

2. Project Design, Construction, and Operation

NGTL shall cause the approved Chinchaga Section to be designed, located, constructed, installed and operated in accordance with the specifications, standards and other information referred to in its application or as otherwise agreed to during questioning or in its related submissions.

3. Implementation of Environmental Protection

NGTL shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations and procedures for the protection

of the environment included in or referred to in its application or as otherwise agreed to during questioning or in its related submissions.

Prior to Construction (Including Clearing or Ground-Breaking Activities)

4. Construction Schedule

NGTL shall, at least 14 days prior to the commencement of construction for the Chinchaga Section, file with the Board a detailed construction schedule identifying major construction activities and shall notify the Board of any modifications to the schedule or schedules as they occur. The construction schedule shall identify the applicable provincial caribou restrictive activity period (RAP) and demonstrate how NGTL will avoid, unless the Board otherwise directs, construction activities during these periods.

5. Manuals and Programs

NGTL shall file with the Board the following programs and manuals within the time specified or as otherwise directed by the Board:

- a) Construction Safety Manual - 14 days prior to construction;
- b) Field Emergency Response Plan - 14 days prior to construction;
- c) Security Management Plan – 14 days prior to construction;
- d) Field Pressure Testing Program - 14 days prior to pressure test.

6. Environmental Protection Plan (EPP) and Environmental Alignment Sheets: Pipeline Facilities and Temporary Infrastructure

NGTL shall file with the Board for approval, at least 60 days prior to commencing construction of the Chinchaga Section, an updated EPP that includes, but is not limited to, the following:

- a) environmental procedures including site-specific plans, criteria for implementation of these procedures, mitigation measures and monitoring applicable to all Project phases and activities;
- b) a reclamation plan which includes a description of the condition to which NGTL intends to reclaim and maintain the RoW once construction has been completed, and a description of measurable goals for reclamation;
- c) all mitigation related to caribou and caribou habitat, placed in one chapter of the EPP, which includes:
 - i) NGTL's commitments to adhering to specific provincial and federal best practices, requirements and timing restrictions;
 - ii) a list of all measures to minimize disturbance to caribou habitat, and measures to be taken before and during construction to help accelerate the restoration of caribou habitat; and
 - iii) the locations where those measures will be taken.

- d) environmental alignment sheets, for the construction and operation of the pipeline facilities; and
- e) evidence demonstrating that:
 - i) there is a management system in place which ensures the updates of the environmental protection procedures, mitigation measures and monitoring are effectively communicated to employees, contractors and regulators; and
 - ii) consultation took place with relevant government authorities, where applicable.

The EPP shall include construction measures specific to the temporary infrastructure (borrow pits and stockpile sites). The EPP shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in NGTL's application for the Project, subsequent filings, evidence collected during the hearing process, or as otherwise agreed to during questioning or in its related submissions. The EPP shall describe the criteria for the implementation of all procedures and measures.

7. Pre-Construction Caribou Habitat Assessment

NGTL shall file with the Board a ground-based caribou habitat assessment at least 60 days prior to commencement of construction of the Chinchaga Section. The assessment will be done for areas of the Chinchaga Section RoW that are within a federally designated caribou range. The framework of the habitat assessment should use the components of critical habitat outlined in *Recovery Strategy for Woodland Caribou, Boreal population, in Canada (Recovery Strategy)*. The habitat assessment should include, but is not limited to:

- a) map(s) indicating the location of the habitat;
- b) a description of the amount, in hectares (ha), of habitat and the existing habitat alteration; and
- c) a description of the type of habitat characterized by the biophysical attributes as defined in the *Recovery Strategy*, Appendix H, Table H-3 Biophysical attributes for boreal caribou critical habitat in the Taiga Plain ecoregion and Table H-4 Biophysical attributes for boreal caribou critical habitat in the Boreal Plain ecozone.

8. Pre-Construction Grizzly Bear Den Sweep

If construction for the Chinchaga Section will occur on or after 15 November, NGTL shall file with the Board a grizzly bear report, at least 14 days prior to the commencement of construction. The report shall provide a summary of the results of the grizzly bear den sweeps to identify potential grizzly bear dens within 750 m of the Chinchaga Section. The report shall also include:

- a) if a grizzly bear den is found during the survey, any newly-developed or modified mitigation measures as well as evidence of consultation with the appropriate federal and provincial authorities regarding the proposed mitigation;

- b) confirmation that no changes to the EPP or Environmental Alignment Sheets are necessary, or if changes are necessary, provide the EPP pages or Environmental Alignment Sheets that have been amended as a result of the survey's findings or recommendations.

If no construction of the Chinchaga Section will occur on or after 15 November, NGTL shall file with the Board, at least 14 days prior to commencement of construction, a letter indicating that the grizzly bear den survey will not be required.

9. Breeding Bird Survey

In the event of clearing, construction or operations maintenance activities within restricted activity periods for all migratory birds, and non-migratory birds protected under provincial jurisdiction, NGTL shall retain a qualified avian biologist to carry out a pre-construction survey to identify any birds and active nests in areas immediately surrounding the site. Within 14 days of completion of the survey, NGTL shall file the results with the Board. The results shall include:

- a) if active nests are found:
 - i) mitigation, including monitoring, developed in consultation with Environment Canada, and Canadian Wildlife Service and the appropriate provincial government authorities, to protect any identified migratory and non-migratory birds and their nests; and
 - ii) mitigation, including monitoring, developed in consultation with Environment Canada and Canadian Wildlife Service to protect any identified *Species at Risk Act* birds and their nests.
- b) evidence to confirm that the appropriate provincial and federal government authorities were consulted, on the proposed methodology for the survey, the results from the survey and the mitigation and monitoring to be used, and a description of any outstanding concerns they may have.

10. Caribou Habitat Restoration Plan (CHRP)

NGTL shall file with the Board for approval, in accordance with the timelines below, preliminary and final versions of a CHRP for the Chinchaga Section. NGTL shall provide a copy of the filings to Environment Canada and the appropriate provincial authorities.

- a) Preliminary CHRP - to be submitted at least 180 days prior to the commencement of construction for the Chinchaga Section. This version of the CHRP shall include, but not be limited to:
 - i) the objectives of the CHRP;
 - ii) a decision tree(s) that will be used to (1) prioritize potential caribou habitat restoration sites and (2) prioritize mitigative actions to be used at different types of sites. The decision tree(s) should be based on a literature review identifying temporal and spatial caribou habitat restoration methodologies and their relative effectiveness, as well as based on typical site factors that may constrain implementation;

- iii) the quantifiable targets and performance measures that will be used to evaluate: (1) the extent of predicted, residual effects, (2) the extent to which the objectives have been met and the need for consequent compensation offsets;
 - iv) a schedule indicating when mitigation measures will start and the estimated completion date; and
 - v) evidence and a summary of consultation with Environment Canada and provincial authorities regarding the CHRP.
- b) Final CHRP - to be submitted on or before 1 November after the first complete growing season following the commencement of operation for the Chinchaga Section. This updated version of the CHRP shall include, but not be limited to:
- i) the preliminary CHRP, with any updates identified in a revision log that includes the rationale for any changes to decision making criteria;
 - ii) a complete table of caribou habitat restoration sites, including but not limited to location, spatial area, description of habitat quality, site-specific restoration activities and challenges;
 - iii) maps or Environmental Alignment Sheets showing the locations of the sites;
 - iv) evidence and summary of consultation with Environment Canada and provincial authorities regarding the Final CHRP; and
 - v) a quantitative and qualitative assessment of the total area of direct disturbance to caribou habitat that will be restored, the duration of spatial disturbance, and the aerial extent of the resulting residual effects to be offset, which also includes indirect disturbance.

11. Heritage Resources

NGTL shall file with the Board, at least 30 days prior to commencing construction of the Chinchaga Section:

- a) copies of all archeological and heritage resource permits and clearances obtained from the appropriate provincial authorities; and
- b) a statement on how NGTL intends to implement any recommendations contained in a) above.

12. Aboriginal Consultation Reports

NGTL shall file with the Board reports on consultation activities undertaken with Aboriginal groups. The reports shall include, at a minimum:

- a) a list of those Aboriginal groups included in consultation activities;
- b) summaries of any issues or concerns raised; and
- c) the measures taken, or that will be taken to address those issues or concerns; or
- d) an explanation of why no further action is required to address the issues or concerns.

During construction of the Chinchaga Section, NGTL shall file with the Board its Aboriginal Consultation Reports and provide a copy to Aboriginal groups listed in (a) on a quarterly basis. During operation of the Chinchaga Section, NGTL shall file with the Board its Aboriginal Consultation Reports and provide a copy to all Aboriginal groups listed in (a) annually for 5 years.

13. Post-Construction Monitoring Program

NGTL shall file with the Board for approval, at least 60 days prior to the commencement of construction for the Chinchaga Section, a preliminary detailed post-construction monitoring (PCM) program which:

- a) describes the methodology to be used for monitoring and the criteria established for evaluating success;
- b) identifies the issues to be monitored, including all valued ecosystem components contained in the PCM section of the draft EPP together with wetland habitat quality and function, wildlife, wildlife habitat and species at risk; and
- c) includes details of consultation undertaken with appropriate provincial and federal authorities.

14. Commitments Tracking Table

NGTL shall:

- a) file with the Board and post on its Company website at least 30 days prior to the commencement of construction, a table listing all commitments made by NGTL during GH-001-2012 proceeding in relation to the Northwest Mainline Komie North Extension project, conditions included in the Certificate, and the deadlines associated with each; and
- b) update the status of the commitments in a) on its website at least on a quarterly basis, advising the Board accordingly.

During Construction

15. Construction Progress Reports

NGTL shall file with the Board at the middle and end of each month, construction progress reports. The reports shall include information on the activities carried out during the reporting period; any environmental, socio-economic, safety and security issues and issues of non-compliance; and the measures undertaken for the resolution of each issue and non-compliance.

16. Field Joining Program

NGTL shall file with the Board a joining program for the Chinchaga Section at least 21 days prior to start of any joining activity on that section.

Post-Construction and Operations

17. Condition Compliance by a Company Officer

Within 30 days of the date that the approved Chinchaga Section is placed in service, NGTL shall file with the Board a confirmation, by an officer of the company, that the approved Chinchaga Section was completed and constructed in compliance with all applicable conditions in this Certificate. If compliance with any of these conditions cannot be confirmed, the officer of the company shall file with the Board details as to why compliance cannot be confirmed. The filing required by this condition shall include a statement confirming that the signatory to the filing is an officer of the company.

18. Post-Construction Monitoring Reports

On or before 31 January after each of the first, third, and fifth complete growing seasons following the commencement of operation of the Chinchaga Section, NGTL shall file with the Board a post-construction monitoring (PCM) report that:

- a) describes the methodology used for monitoring, the criteria established for evaluating success and the results found;
- b) identifies the issues to be monitored, including but not limited to unexpected issues that arose during construction, and their locations (e.g., on a map or diagram, in a table);
- c) describes the current status of the issues (resolved or unresolved), any deviations from plans and corrective actions undertaken;
- d) assesses the effectiveness of mitigation (planned and corrective) measures applied against the criteria for success;
- e) includes details of consultation undertaken with appropriate provincial and federal authorities;
- f) provides proposed measures and the schedule that NGTL would implement to address ongoing issues or concerns; and
- g) includes an assessment of wetland habitat and wildlife and wildlife habitat, including species at risk.

The reports shall also include information pertaining to a) through g) above as it applies to the reclamation of the section 58 application facilities with respect to the Chinchaga Section, the restoration of wetland functionality, and any activities associated with the hydrostatic testing plans.

The first monitoring report shall include a final PCM program, incorporating any changes or refinements to the preliminary PCM program.

19. Offset Measures Plan for Residual Impacts to Wetlands

Within one year following the close of the five-year post-construction monitoring program, NGTL shall file with the Board and provide a copy to Environment Canada, an Offset Measures Plan for the Chinchaga Section for all wetlands where wetland function has not

been fully restored by the close of the PCM program. This plan should include, but is not limited to:

- a) a quantitative assessment of pre- and post-construction wetland functionality that includes the identification of functionality parameters, the quantitative thresholds that ought to be maintained for these parameters and the methodology used to quantify the area of wetland where functionality has not been restored;
- b) a list of offset measures and appropriate offset ratios to be implemented or already underway, including a description of site-specific details and maps showing the locations;
- c) the expected effectiveness of each offset measure;
- d) the relative value of each offset measure towards achieving the offset;
- e) the decision-making criteria for selecting which specific offset measures and accompanying offset ratios would be used under what circumstances;
- f) a schedule indicating when measures will start and the estimated completion date; and
- g) evidence and summary of consultation with government and non-governmental expert bodies regarding the plan, including details of any proposed alternatives to the above authority's recommendations and the rationale for proposing those alternatives.

20. Offset Measures Plan for Residual Impacts to Caribou Habitat

NGTL shall file with the Board for approval, a plan to offset all residual effects related to the Chinchaga Section resulting from directly and indirectly disturbed caribou habitat, after taking into account the implementation of the EPP and CHRP measures. NGTL shall provide a copy of the filings to Environment Canada and the appropriate provincial authorities. The Offset Measures Plan for the Chinchaga Section shall include:

- a) a preliminary version, to be filed for approval at least 60 days prior to requesting Leave to Open for the Chinchaga Section including, but not limited to, a discussion of:
 - i) an initial quantification of the area of caribou habitat directly and indirectly disturbed based on the components of critical habitat identified in the *Recovery Strategy*;
 - ii) the proposed offset ratios for each potential measure, based on consultation with expert agencies and on a review of the literature on conservation offsets;
 - iii) a list of the potential offset measures available, the expected effectiveness of each, and how they align with criteria specified in the scientific literature specific to conservation offsets;
 - iv) the relative quantitative and qualitative value of each measure towards achieving the offset; and
 - v) a decision tree(s) that will be used to select which specific offset measures and accompanying offset ratios would be used under what circumstances;

- b) a final version, to be filed for approval on or before 1 February after the second complete growing season following the commencement of operation of the Chinchaga Section, with:
 - i) the contents of the preliminary version, with any updates identified in a revision log that includes the rationale for any changes to decision making criteria;
 - ii) a complete table listing the offset measures and offset ratios to be implemented or already underway, including site-specific details and map locations, and how they meet criteria in the literature for offsets;
 - iii) a schedule indicating when offset measures will be initiated and the estimated date when implementation will be complete; and
 - iv) an assessment of the effectiveness of the measures, including a discussion of uncertainty, and a quantitative compilation showing how the offset measures have offset the previously calculated residual effects;

Both the preliminary and final versions of the plan shall also include:

- c) a description of NGTL's consultations with potentially affected Aboriginal groups regarding the plan, including any concerns that were raised and how these have been addressed; and
- d) evidence and summary of consultation with Environment Canada and provincial authorities regarding the plan.

21. Caribou Habitat Restoration and Offset Measures Monitoring Program (Program)

NGTL shall file with the Board for approval, on or before 1 February after the first complete growing season following the commencement of operation for the Chinchaga Section, a Program for monitoring and verifying the effectiveness of the caribou habitat restoration and offset measures implemented as part of the CHRP and Offset Measures Plan. This Program shall include, but not be limited to:

- a) the scientific methodology or protocol for short-term and long-term monitoring of the restoration and offset measures, and the effectiveness of the measures;
- b) frequency, timing and locations of monitoring and the rationale for each;
- c) protocols for how restoration and offset measures will be adapted, as required, based on the monitoring results from the implementation of either the Chinchaga Section or other NGTL CHRPs and Offset Measures Plans; and
- d) a schedule for filing reports of monitoring results and the adaptive management responses, to the NEB, Environment Canada and provincial authorities to be contained in the Program as well as at the beginning of each report filed.

22. Caribou Monitoring Reports

NGTL shall file with the Board, based on the schedule referred to in the Caribou Habitat Restoration and Offset Measures Monitoring Program, a report(s) outlining the results of the monitoring program.

23. Overpressure Protection

At least 14 days prior to commencement of operation, NGTL shall file with the Board a statement by a professional engineer that the overpressure protection system complies with CSA Z662-11 Section 4.18.1.2.

24. Integrity Management Program (IMP)

Within 90 days of the date that the approved Chinchaga Section is placed in service, NGTL shall file with the Board for approval its Integrity Management Program. NGTL shall develop an In Line Inspection (ILI) Program for continual assessment for the Chinchaga Section and shall include the ILI Program in the IMP. The ILI program shall include the type of tools to be run and the frequency in which inspections will be conducted.

Certificate Expiration

25. Sunset Clause

Unless the Board otherwise directs prior to [1 year from the date the Certificate is granted], this Certificate shall expire on [same date] unless construction in respect of the Chinchaga Section has commenced by that date.

Appendix IV

Certificate Conditions for the Komie North Section

In these conditions, the expression “commencing construction” means the clearing of vegetation, ground-breaking and other forms of right-of-way (RoW) preparation that may have an impact on the environment, but does not include activities associated with normal surveying activities. In these conditions, where any condition requires a filing with the National Energy Board (Board or NEB) “for approval”, NGTL must not commence that action until the approval is issued.

The terms below (in bold) have the following meanings:

Footprint – The area directly disturbed by the construction and clean-up activities associated with the Komie North Section, including associated physical works and activities (e.g., permanent RoW, temporary workspace for construction, tie-in facilities).

Project – The Project will extend and expand the Alberta System by approximately 130 km of pipeline at two locations in northwestern Alberta (AB) and northeastern British Columbia (BC). It is comprised of:

- the Komie North Section in northeast BC, which is an extension to the Horn River Mainline of approximately 97 km of 914 mm (NPS 36) outside diameter pipe and related facilities; and
- the Chinchaga Section in northwest Alberta, which is a pipeline loop of approximately 33 km of 1219 mm (NPS 48) pipe and related facilities.

Certificate – The Certificate of Public Convenience and Necessity, pursuant to section 52 of the *National Energy Board Act* (NEB Act), authorizing the construction and operation of the Komie North Section facilities applied for under section 52 of the NEB Act.

General Conditions

1. Condition Compliance

NGTL shall comply with all of the conditions contained in this Certificate, unless the Board otherwise directs.

2. Project Design, Construction, and Operation

NGTL shall cause the approved Komie North Section to be designed, located, constructed, installed and operated in accordance with the specifications, standards and other information referred to in its application or as otherwise agreed to during questioning or in its related submissions.

3. Implementation of Environmental Protection

NGTL shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations and procedures for the protection of the environment included in or referred to in its application or as otherwise agreed to during questioning or in its related submissions.

Prior to Construction (Including Clearing or Ground-Breaking Activities)

4. Construction Schedule

NGTL shall, at least 14 days prior to the commencement of construction for the Komie North Section, file with the Board a detailed construction schedule identifying major construction activities and shall notify the Board of any modifications to the schedule or schedules as they occur. The construction schedule shall identify the applicable provincial caribou restrictive activity period (RAP) and demonstrate how NGTL will avoid, unless the Board otherwise directs, construction activities during these periods.

5. Manuals and Programs

NGTL shall file with the Board the following programs and manuals within the time specified or as otherwise directed by the Board:

- a) Construction Safety Manual - 14 days prior to construction;
- b) Field Emergency Response Plan - 14 days prior to construction;
- c) Security Management Plan – 14 days prior to construction;
- d) Field Pressure Testing Program - 14 days prior to pressure test.

6. Environmental Protection Plan (EPP) and Environmental Alignment Sheets: Pipeline Facilities

NGTL shall file with the Board for approval, at least 60 days prior to commencing construction of the Komie North Section, an updated EPP that includes, but is not limited to, the following:

- a) environmental procedures including site-specific plans, criteria for implementation of these procedures, mitigation measures and monitoring applicable to the Komie North Section phases and activities;
- b) a reclamation plan which includes a description of the condition to which NGTL intends to reclaim and maintain the RoW once construction has been completed, and a description of measurable goals for reclamation;
- c) all mitigation related to caribou and caribou habitat, placed in one chapter of the EPP, which includes:
 - i) NGTL's commitments to adhering to specific provincial and federal best practices, requirements and timing restrictions;
 - ii) a list of all measures to minimize disturbance to caribou habitat, and measures to be taken before and during construction to help accelerate the restoration of caribou habitat; and
 - iii) the locations where those measures will be taken.
- d) environmental alignment sheets, for the construction and operation of the pipeline facilities; and

- e) evidence demonstrating that:
 - i) there is a management system in place which ensures the updates of the environmental protection procedures, mitigation measures and monitoring are effectively communicated to employees, contractors and regulators; and
 - ii) consultation took place with relevant government authorities, where applicable.

The EPP shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in NGTL's application for the Project, subsequent filings, evidence collected during the hearing process, or as otherwise agreed to during questioning or in its related submissions. The EPP shall describe the criteria for the implementation of all procedures and measures.

7. Pre-Construction Caribou Habitat Assessment

NGTL shall file with the Board a ground-based caribou habitat assessment at least 60 days prior to commencement of construction of the Komie North Section. The assessment will be done for areas of the Komie North Section RoW that are within a federally designated caribou range. The framework of the habitat assessment should use the components of critical habitat outlined in *Recovery Strategy for Woodland Caribou, Boreal population, in Canada (Recovery Strategy)*. The habitat assessment should include, but is not limited to:

- a) map(s) indicating the location of the habitat;
- b) a description of the amount, in hectares (ha), of habitat and the existing habitat alteration; and
- c) a description of the type of habitat characterized by the biophysical attributes as defined in the *Recovery Strategy*, Appendix H, Table H-3 Biophysical attributes for boreal caribou critical habitat in the Taiga Plain ecoregion and Table H-4 Biophysical attributes for boreal caribou critical habitat in the Boreal Plain ecozone.

8. Pre-Construction Grizzly Bear Den Sweep

If construction of the Komie North Section will occur on or after 15 November, NGTL shall file with the Board a grizzly bear report, at least 14 days prior to the commencement of construction. The report shall provide a summary of the results of the grizzly bear den sweeps to identify potential grizzly bear dens within 750 m of the Komie North Section. The report shall also include:

- a) if a grizzly bear den is found during the survey, any newly-developed or modified mitigation measures as well as evidence of consultation with the appropriate federal and provincial authorities regarding the proposed mitigation;
- b) confirmation that no changes to the EPP or Environmental Alignment Sheets are necessary, or if changes are necessary, provide the EPP pages or Environmental Alignment Sheets that have been amended as a result of the survey's findings or recommendations.

If no construction of the Komie North Section will occur on or after 15 November, NGTL shall file with the Board, at least 14 days prior to commencement of construction, a letter indicating that the grizzly bear den survey will not be required.

9. Breeding Bird Survey

In the event of clearing, construction or operations maintenance activities within restricted activity periods for all migratory birds, and non-migratory birds protected under provincial jurisdiction, NGTL shall retain a qualified avian biologist to carry out a pre-construction survey to identify any birds and active nests in areas immediately surrounding the site. Within 14 days of completion of the survey, NGTL shall file the results with the Board. The results shall include:

- a) if active nests are found:
 - i) mitigation, including monitoring, developed in consultation with Environment Canada, and Canadian Wildlife Service and the appropriate provincial government authorities, to protect any identified migratory and non-migratory birds and their nests; and
 - ii) mitigation, including monitoring, developed in consultation with Environment Canada and Canadian Wildlife Service to protect any identified *Species at Risk Act* birds and their nests.
- b) evidence to confirm that the appropriate provincial and federal government authorities were consulted, on the proposed methodology for the survey, the results from the survey and the mitigation and monitoring to be used, and a description of any outstanding concerns they may have.

10. Caribou Habitat Restoration Plan (CHRP)

NGTL shall file with the Board for approval, in accordance with the timelines below, preliminary and final versions of a CHRP for the Komie North Section. NGTL shall provide a copy of the filings to Environment Canada and the appropriate provincial authorities.

- a) Preliminary CHRP - to be submitted at least 180 days prior to the commencement of construction for the Komie North Section. This version of the CHRP shall include, but not be limited to:
 - i) the objectives of the CHRP;
 - ii) a decision tree(s) that will be used to (1) prioritize potential caribou habitat restoration sites and (2) prioritize mitigative actions to be used at different types of sites. The decision tree(s) should be based on a literature review identifying temporal and spatial caribou habitat restoration methodologies and their relative effectiveness, as well as based on typical site factors that may constrain implementation;
 - iii) the quantifiable targets and performance measures that will be used to evaluate: (1) the extent of predicted, residual effects, (2) the extent to which the objectives have been met and the need for consequent compensation offsets;

- iv) a schedule indicating when mitigation measures will start and the estimated completion date; and
 - v) evidence and a summary of consultation with Environment Canada and provincial authorities regarding the CHRP.
- b) Final CHRP - to be submitted on or before 1 November after the first complete growing season following the commencement of operation for the Komie North Section. This updated version of the CHRP shall include, but not be limited to:
- i) the preliminary CHRP, with any updates identified in a revision log that includes the rationale for any changes to decision making criteria;
 - ii) a complete table of caribou habitat restoration sites, including but not limited to location, spatial area, description of habitat quality, site-specific restoration activities and challenges;
 - iii) maps or Environmental Alignment Sheets showing the locations of the sites;
 - iv) evidence and summary of consultation with Environment Canada and provincial authorities regarding the Final CHRP; and
 - v) a quantitative and qualitative assessment of the total area of direct disturbance to caribou habitat that will be restored, the duration of spatial disturbance, and the aerial extent of the resulting residual effects to be offset, which also includes indirect disturbance.

11. Heritage Resources

NGTL shall file with the Board, at least 30 days prior to commencing construction of the Komie North Section:

- a) copies of all archeological and heritage resource permits and clearances obtained from the appropriate provincial authorities; and
- b) a statement on how NGTL intends to implement any recommendations contained in a) above.

12. Aboriginal Consultation Reports

NGTL shall file with the Board reports on consultation activities undertaken with Aboriginal groups. The reports shall include, at a minimum:

- a) a list of those Aboriginal groups included in consultation activities;
- b) summaries of any issues or concerns raised; and
- c) the measures taken, or that will be taken to address those issues or concerns; or
- d) an explanation of why no further action is required to address the issues or concerns.

During construction of the Komie North Section, NGTL shall file with the Board its Aboriginal Consultation Reports and provide a copy to Aboriginal groups listed in (a) on a quarterly basis. During operation of the Komie North Section, NGTL shall file with the Board its Aboriginal Consultation Reports and provide a copy to all Aboriginal groups listed in (a) annually for 5 years.

13. Access Management Plan

- a) NGTL shall file with the Board and provide a copy to FNFN, at least 180 days prior to the commencement of construction of the Komie North Section, an Access Management Plan (AMP) for new disturbance areas along the RoW on the Komie North Section which includes:
 - i) the methodology used to develop the AMP, including baseline information to be used for assessing the effectiveness of the AMP;
 - ii) the goals for monitoring and managing access;
 - iii) the measures and criteria to be used to achieve these goals;
 - iv) the method and frequency of inspections for access controls along the right-of-way during operations;
 - v) the criteria for determining the need for maintenance, repair, or installation of new access controls measures, including:
 - i. a description of the contingency measures that will be implemented if existing access controls prove to be ineffective at preventing new access;
 - ii. an indication of the timeframe to implement contingency measures; and
 - vi) the frequency of reporting to the Board during construction and operation for 5 years regarding:
 - i. the relative amount of access (increase or decrease and by quantifiable amount over baseline or previous reporting period);
 - ii. steps taken when implementing the criteria identified in (v); and
 - iii. the results of the evaluation of the overall effectiveness of the AMP.
- b) With the filing of the AMP described in paragraph (a), NGTL shall also file with the Board the results of consultation with interested parties regarding the development of the AMP, including a description of input received from interested parties that was incorporated into the design of the AMP or explanation as to why the input was not included.

14. Routing

- a) Concurrent with the filing of the Plan, Profile and Book of Reference (PPBoR) for the Komie North Section pursuant to section 33 of the NEB Act, NGTL shall file with the Board the details of consultation activities with the public and Aboriginal groups, including FNFN, undertaken in respect of routing.
- b) With the filing of the PPBoR for the Komie North Section pursuant to section 33 of the NEB Act, NGTL shall file with the Board a description of any proposed detailed route alignment that extends beyond the applied-for right of way width of NGTL's preferred route. Such description shall include:
 - i) an environmental alignment sheet at an appropriate scale, clearly depicting the proposed route re-alignment;

- ii) a schedule for filing the results of pre-construction surveys for wildlife species at risk within areas that were not previously assessed; and
- iii) an environmental and socio-economic assessment identifying:
 - a. all relevant effects of the re-route,
 - b. all associated mitigation measures, other than those identified during the GH-001-2012 proceeding, and
 - c. analysis supporting the use of such measures, including any supplementary reports.
- c) NGTL shall provide copies of the filings made under paragraphs (a) and (b) to interested parties, including FNFN.

15. Post-Construction Monitoring Program

NGTL shall file with the Board for approval, at least 60 days prior to the commencement of construction for the Komie North Section, a preliminary detailed post-construction monitoring (PCM) program which:

- a) describes the methodology to be used for monitoring and the criteria established for evaluating success;
- b) identifies the issues to be monitored, including all valued ecosystem components contained in the PCM section of the draft EPP together with wetland habitat quality and function, wildlife, wildlife habitat and species at risk; and
- c) includes details of consultation undertaken with appropriate provincial and federal authorities.

16. Commitments Tracking Table

NGTL shall:

- a) file with the Board and post on its Company website at least 30 days prior to the commencement of construction of the Komie North Section, a table listing all commitments made by NGTL during GH-001-2012 proceeding in relation to the Northwest Mainline Komie North Extension project, conditions included in the Certificate, and the deadlines associated with each; and
- b) update the status of the commitments in a) on its website at least on a quarterly basis, advising the Board accordingly.

17. Toll Treatment

Prior to the commencement of construction of the Komie North Section, NGTL shall file, and obtain Board approval for, a proposed toll treatment for the Komie North Section facilities.

During Construction

18. Construction Progress Reports

NGTL shall file with the Board at the middle and end of each month, construction progress reports. The reports shall include information on the activities carried out during the reporting period; any environmental, socio-economic, safety and security issues and issues of non-compliance; and the measures undertaken for the resolution of each issue and non-compliance.

19. Field Joining Program

NGTL shall file with the Board a field joining program for the Komie North Section at least 14 days prior to start of any joining activity on that section.

Post-Construction and Operations

20. Condition Compliance by a Company Officer

Within 30 days of the date that the approved Komie North Section is placed in service, NGTL shall file with the Board a confirmation, by an officer of the company, that the approved Komie North Section was completed and constructed in compliance with all applicable conditions in this Certificate. If compliance with any of these conditions cannot be confirmed, the officer of the company shall file with the Board details as to why compliance cannot be confirmed. The filing required by this condition shall include a statement confirming that the signatory to the filing is an officer of the company.

21. Post-Construction Monitoring Reports

On or before 31 January after each of the first, third, and fifth complete growing seasons following the commencement of operation of the Komie North Section, NGTL shall file with the Board a post-construction monitoring (PCM) report that:

- a) describes the methodology used for monitoring, the criteria established for evaluating success and the results found;
- b) identifies the issues to be monitored, including but not limited to unexpected issues that arose during construction, and their locations (e.g., on a map or diagram, in a table);
- c) describes the current status of the issues (resolved or unresolved), any deviations from plans and corrective actions undertaken;
- d) assesses the effectiveness of mitigation (planned and corrective) measures applied against the criteria for success;
- e) includes details of consultation undertaken with appropriate provincial and federal authorities;
- f) provides proposed measures and the schedule that NGTL would implement to address ongoing issues or concerns; and

- g) includes an assessment of wetland habitat and wildlife and wildlife habitat, including species at risk.

The reports shall also include information pertaining to a) through g) above as it applies to the reclamation of the section 58 application facilities with respect to the Komie North Section, the restoration of wetland functionality, and any activities associated with the hydrostatic testing plans.

The first monitoring report shall include a final PCM program, incorporating any changes or refinements to the preliminary PCM program.

22. Offset Measures Plan for Residual Impacts to Wetlands

Within one year following the close of the five-year post-construction monitoring program, NGTL shall file with the Board and provide a copy to Environment Canada, an Offset Measures Plan for the Komie North Section for all wetlands where wetland function has not been fully restored by the close of the PCM program. This plan should include, but is not limited to:

- a) a quantitative assessment of pre- and post-construction wetland functionality that includes the identification of functionality parameters, the quantitative thresholds that ought to be maintained for these parameters and the methodology used to quantify the area of wetland where functionality has not been restored;
- b) a list of offset measures and appropriate offset ratios to be implemented or already underway, including a description of site-specific details and maps showing the locations;
- c) the expected effectiveness of each offset measure;
- d) the relative value of each offset measure towards achieving the offset;
- e) the decision-making criteria for selecting which specific offset measures and accompanying offset ratios would be used under what circumstances;
- f) a schedule indicating when measures will start and the estimated completion date; and
- g) evidence and summary of consultation with government and non-governmental expert bodies regarding the plan, including details of any proposed alternatives to the above authority's recommendations and the rationale for proposing those alternatives.

23. Offset Measures Plan for Residual Impacts to Caribou Habitat

NGTL shall file with the Board for approval, a plan to offset all residual effects related to the Komie North Section resulting from directly and indirectly disturbed caribou habitat, after taking into account the implementation of the EPP and CHRP measures. NGTL shall provide a copy of the filings to Environment Canada and the appropriate provincial authorities. The Offset Measures Plan for the Komie North Section shall include:

- a) a preliminary version, to be filed for approval at least 60 days prior to requesting Leave to Open for the Komie North Section including, but not limited to, a discussion of:

- i) an initial quantification of the area of caribou habitat directly and indirectly disturbed based on the components of critical habitat identified in the *Recovery Strategy*;
 - ii) the proposed offset ratios for each potential measure, based on consultation with expert agencies and on a review of the literature on conservation offsets;
 - iii) a list of the potential offset measures available, the expected effectiveness of each, and how they align with criteria specified in the scientific literature specific to conservation offsets;
 - iv) the relative quantitative and qualitative value of each measure towards achieving the offset; and
 - v) a decision tree(s) that will be used to select which specific offset measures and accompanying offset ratios would be used under what circumstances;
- b) a final version, to be filed for approval on or before 1 February after the second complete growing season following the commencement of operation of the Komie North Section, with:
- i) the contents of the preliminary version, with any updates identified in a revision log that includes the rationale for any changes to decision making criteria;
 - ii) a complete table listing the offset measures and offset ratios to be implemented or already underway, including site-specific details and map locations, and how they meet criteria in the literature for offsets;
 - iii) a schedule indicating when offset measures will be initiated and the estimated date when implementation will be complete; and
 - iv) an assessment of the effectiveness of the measures, including a discussion of uncertainty, and a quantitative compilation showing how the offset measures have offset the previously calculated residual effects;

Both the preliminary and final versions of the plan shall also include:

- c) a description of NGTL's consultations with potentially affected Aboriginal groups regarding the plan, including any concerns that were raised and how these have been addressed; and
- d) evidence and summary of consultation with Environment Canada and provincial authorities regarding the plan.

24. Caribou Habitat Restoration and Offset Measures Monitoring Program (Program)

NGTL shall file with the Board for approval, on or before 1 February after the first complete growing season following the commencement of operation for the Komie North Section, a Program for monitoring and verifying the effectiveness of the caribou habitat restoration and offset measures implemented as part of the CHRP and Offset Measures Plan. This Program shall include, but not be limited to:

- a) the scientific methodology or protocol for short-term and long-term monitoring of the restoration and offset measures, and the effectiveness of the measures;

- b) frequency, timing and locations of monitoring and the rationale for each;
- c) protocols for how restoration and offset measures will be adapted, as required, based on the monitoring results from the implementation of either the Komie North Section or other NGTL CHRPs and Offset Measures Plans; and
- d) a schedule for filing reports of monitoring results and the adaptive management responses, to the NEB, Environment Canada and provincial authorities to be contained in the Program as well as at the beginning of each report filed.

25. Caribou Monitoring Reports

NGTL shall file with the Board, based on the schedule referred to in the Caribou Habitat Restoration and Offset Measures Monitoring Program, a report(s) outlining the results of the monitoring program.

26. Overpressure Protection

At least 14 days prior to commencement of operation, NGTL shall file with the Board a statement by a professional engineer that the overpressure protection system complies with CSA Z662-11 Section 4.18.1.2.

27. Integrity Management Program (IMP) and Baseline Inspection

- a) Within 90 days of the date that the approved Komie North Section is placed in service, NGTL shall file with the Board for approval its Integrity Management Program. NGTL shall develop an In Line Inspection (ILI) Program for continual assessment for the Komie North Section and shall include the ILI Program in the IMP. The ILI program shall include the type of tools to be run and the frequency in which inspections will be conducted.
- b) Within 365 days of the date that the approved Komie North Section is placed in service, NGTL shall conduct an In Line Inspection using high resolution caliper and inertial tools as a baseline for Komie North Section. NGTL shall file with the Board as soon as available, summaries of the baseline assessment that must include dents, wrinkles, buckles and pipe movement anomalies.

Certificate Expiration

28. Sunset Clause

Unless the Board otherwise directs prior to [2 year from the date the Certificate is granted], this Certificate shall expire on [same date] unless construction in respect of the Komie North Section has commenced by that date.

Appendix V

NEB Section 58 Order Conditions for the Chinchaga Section

In these conditions, the expression “commencement of construction” means the clearing of vegetation, ground-breaking and other forms of right-of-way (RoW) preparation that may have an impact on the environment, but does not include activities associated with normal surveying activities. The condition requiring the filing of the Environmental Protection Plan (EPP) with the National Energy Board (Board or NEB) “for approval” means that NGTL must not commence construction of temporary infrastructure (borrow pits for hydrostatic testing purposes and stockpile sites) until the approval is issued.

Order – The Order is pursuant to subsection 58(1) of the *National Energy Act* (NEB Act) in relation to the temporary infrastructure (borrow pits for hydrostatic testing purposes and stockpile sites) for the Chinchaga Section (the Section 58 Facilities).

1. Condition Compliance

NGTL shall comply with all of the conditions contained in this Order, unless the Board otherwise directs.

2. Project Design, Construction, and Operation

NGTL shall cause the approved Section 58 Facilities to be designed, constructed and operated in accordance with the specifications, standards and other information referred to in its application or as otherwise agreed to during questioning or in its related submissions.

3. Implementation of Environmental Protection

NGTL shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations and procedures for the protection of the environment included in or referred to in its application or as otherwise agreed to during questioning or in its related submissions.

4. Breeding Bird Survey

In the event of clearing, construction or operations maintenance activities within restricted activity periods for all migratory birds, and non-migratory birds protected under provincial jurisdiction, NGTL shall retain a qualified avian biologist to carry out a pre-construction survey to identify any birds and active nests in areas immediately surrounding the site. Within 14 days of completion of the survey, NGTL shall file the results with the Board. The results shall include:

- a) if active nests are found:
 - i) mitigation, including monitoring, developed in consultation with Environment Canada (EC), and Canadian Wildlife Service and the appropriate provincial government authorities, to protect any identified migratory and non-migratory birds and their nests; and

- ii) mitigation, including monitoring, developed in consultation with EC and Canadian Wildlife Service to protect any identified *Species at Risk Act* birds and their nests.
- b) evidence to confirm that the appropriate provincial and federal government authorities were consulted, on the proposed methodology for the survey, the results from the survey and the mitigation and monitoring to be used, and a description of any outstanding concerns they may have.

5. Commitments Tracking Table

NGTL shall:

- a) file with the Board and post on its Company website at least 30 days prior to the commencement of construction of the Section 58 Facilities, a table listing all commitments made by NGTL during GH-001-2012 proceeding in relation to the Northwest Mainline Komie North Extension project, conditions included in the Order, and the deadlines associated with each; and
 - b) update the status of the commitments in a) on its website at least on a quarterly basis, advising the Board accordingly.
6. Condition Compliance by a Company Officer

Within 30 days of the date that the approved Chinchaga Section is placed in service, NGTL shall file with the Board a confirmation, by an officer of the company, that the approved Section 58 Facilities were completed and constructed in compliance with all applicable conditions in this Order. If compliance with any of these conditions cannot be confirmed, the officer of the company shall file with the Board details as to why compliance cannot be confirmed. The filing required by this condition shall include a statement confirming that the signatory to the filing is an officer of the company.

7. Sunset Clause

Unless the Board otherwise directs prior to [1 year from the date the Order is granted], this Order shall expire on [same date] unless construction in respect of the Section 58 Facilities has commenced by that date.

Appendix VI

NEB Section 58 Order Conditions for the Komie North Section

In these conditions, the expression “commencement of construction” means the clearing of vegetation, ground-breaking and other forms of right-of-way (RoW) preparation that may have an impact on the environment, but does not include activities associated with normal surveying activities. The condition requiring the filing of the Environmental Protection Plan (EPP) with the National Energy Board (Board or NEB) “for approval” means that NGTL must not commence construction of temporary infrastructure (Komie North construction camp, stockpile sites and contractor yards, and the Fortune Creek meter station and associated access road) until the approval is issued.

Order – The Order is pursuant to subsection 58(1) of the *National Energy Act* (NEB Act) in relation to the temporary infrastructure (Komie North construction camp, stockpile sites and contractor yards, and the Fortune Creek meter station and associated access road) for the Komie North Section (the Section 58 Facilities).

1. Condition Compliance

NGTL shall comply with all of the conditions contained in this Order, unless the Board otherwise directs.

2. Project Design, Construction, and Operation

NGTL shall cause the approved Section 58 Facilities to be designed, constructed and operated in accordance with the specifications, standards and other information referred to in its application or as otherwise agreed to during questioning or in its related submissions.

3. Implementation of Environmental Protection

NGTL shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations and procedures for the protection of the environment included in or referred to in its application or as otherwise agreed to during questioning or in its related submissions.

4. Environmental Protection Plan (EPP): Temporary Infrastructure

NGTL shall file with the Board for approval, at least 60 days prior to commencing construction of the Section 58 Facilities, an updated EPP that includes, but is not limited to, the following:

- a) environmental procedures including site-specific plans, criteria for implementation of these procedures, mitigation measures and monitoring applicable to all Project phases and activities; and
- b) a reclamation plan which includes a description of the condition to which NGTL intends to reclaim the impacted lands once construction has been completed, and a description of measurable goals for reclamation;

- c) all mitigation related to caribou and caribou habitat, placed in one chapter of the EPP, which includes:
 - i) NGTL's commitments to adhering to specific provincial and federal best practices, requirements and timing restrictions;
 - ii) a list of all measures to minimize disturbance to caribou habitat, and measures to be taken before and during construction to help accelerate the restoration of caribou habitat; and
 - iii) the locations where those measures will be taken.
- d) evidence demonstrating that:
 - i) there is a management system in place which ensures the updates of the environmental protection procedures, mitigation measures and monitoring are effectively communicated to employees, contractors and regulators; and
 - ii) consultation took place with relevant government authorities, where applicable.

The EPP shall specifically address the construction and dismantling of the camp as well as the reclamation of any impacted lands. The EPP shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in NGTL's application for the Project, subsequent filings, evidence collected during the hearing process, or as otherwise agreed to during questioning or in its related submissions. The EPP shall describe the criteria for the implementation of all procedures and measures.

5. Breeding Bird Survey

In the event of clearing, construction or operations maintenance activities within restricted activity periods for all migratory birds, and non-migratory birds protected under provincial jurisdiction, NGTL shall retain a qualified avian biologist to carry out a pre-construction survey to identify any birds and active nests in areas immediately surrounding the site. Within 14 days of completion of the survey, NGTL shall file the results with the Board. The results shall include:

- a) if active nests are found:
 - i) mitigation, including monitoring, developed in consultation with Environment Canada (EC), and Canadian Wildlife Service and the appropriate provincial government authorities, to protect any identified migratory and non-migratory birds and their nests; and
 - ii) mitigation, including monitoring, developed in consultation with EC and Canadian Wildlife Service to protect any identified *Species at Risk Act* birds and their nests.
- b) evidence to confirm that the appropriate provincial and federal government authorities were consulted, on the proposed methodology for the survey, the results from the survey and the mitigation and monitoring to be used, and a description of any outstanding concerns they may have.

6. Commitments Tracking Table

NGTL shall:

- a) file with the Board and post on its Company website at least 30 days prior to the commencement of construction of the Section 58 Facilities, a table listing all commitments made by NGTL during GH-001-2012 proceeding in relation to the Northwest Mainline Komie North Extension project, conditions included in the Order, and the deadlines associated with each; and
- b) update the status of the commitments in a) on its website at least on a quarterly basis, advising the Board accordingly.

7. Condition Compliance by a Company Officer

Within 30 days of the date that the approved Komie North Section is placed in service, NGTL shall file with the Board a confirmation, by an officer of the company, that the approved Section 58 Facilities were completed and constructed in compliance with all applicable conditions in this Order. If compliance with any of these conditions cannot be confirmed, the officer of the company shall file with the Board details as to why compliance cannot be confirmed. The filing required by this condition shall include a statement confirming that the signatory to the filing is an officer of the company.

8. Sunset Clause

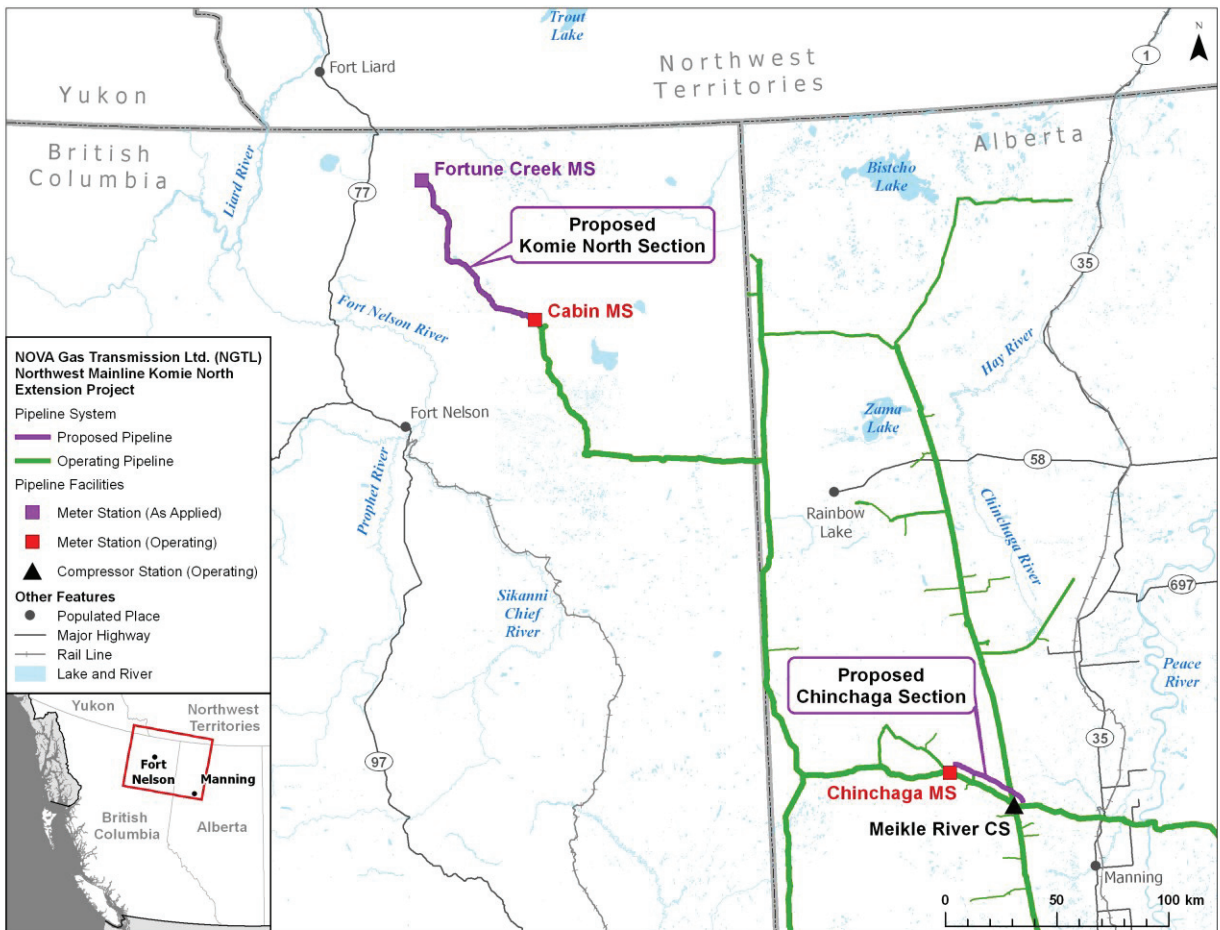
Unless the Board otherwise directs prior to [2 years from the date the Order is granted], this Order shall expire on [same date] unless construction in respect of the Section 58 Facilities has commenced by that date.

Appendix VII

Environmental Assessment Report

Northwest Mainline Komie North Extension

Applicant Name: NOVA Gas Transmission Ltd.
Application Date: 14 October 2011
National Energy Board File Number: OF-Fac-Gas-N081-2011- 05 02



SUMMARY

This report is an Environmental Assessment Report (EA Report) for the Northwest Mainline Komie North Extension (the Project) as proposed by NOVA Gas Transmission Ltd. (NGTL).

On 14 October 2011, NGTL applied to the National Energy Board (Board or NEB) under sections 52 and 58 of the *National Energy Board Act* for authorization to construct and operate two new pipelines and associated facilities with a total length of 130 kilometres (km), extending and expanding the capacity of NGTL's existing pipeline system in northeast British Columbia and northwest Alberta.

The Project would comprise approximately 97 km of 914 millimetres (mm) (36 inch) outside diameter (OD) pipeline that extends the Horn River Mainline pipeline in British Columbia, and approximately 33 km of 1 219 mm (48 inch) OD pipeline adjacent to the Chinchaga Lateral Loop in Alberta, respectively.

The pipelines would be constructed entirely on provincial Crown lands, alongside and contiguous to existing rights-of-way (RoW) for approximately 79 km of the 130 km total length and includes approximately 51 km of non-contiguous, new cut RoW. The Project would require the crossing of 83 watercourses and approximately 221 hectares of wetlands and traverses the designated ranges of three separate boreal woodland caribou herds. Project construction activities would begin in second quarter of 2013 and continue into the second quarter of 2015.

Government agencies that participated in the hearing process included Transport Canada and Environment Canada.

This EA Report is based on the information provided by NGTL, government agencies, Aboriginal groups, other interested parties and the public as part of the public hearing process for the Project.

Comments received on this EA Report were considered by the Board in its preparation of the final EA Report.

Key environmental issues raised during the hearing process included effects on woodland caribou (boreal population) and its habitat, Aboriginal traditional land use and cumulative effects. The NEB is of the view that, with the implementation of NGTL's proposed environmental protection procedures and mitigation measures, compliance with the Board's regulatory requirements and the NEB's conditions included in the *National Energy Board Report*, the Project is not likely to cause significant adverse environmental effects.

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LIST OF ABBREVIATIONS

AB	Alberta
ACCS	Alberta Culture and Community Spirit
ADKFN	Acho Dene Koe First Nation
AIA	Archaeological Impact Assessment
the Application	NOVA Gas Transmission Ltd.'s Application
ASRD	Alberta Sustainable Resource Development
BC	British Columbia
BC CDC	British Columbia Conservation Data Centre
BDC	beaver dam complex
BFN	Beaver First Nation
Board or NEB	National Energy Board
CAC	criteria air contaminants
Caribou	Woodland Caribou (<i>Rangifer tarandus caribou</i>), Boreal population
CEA Act 1992	<i>Canadian Environmental Assessment Act 1992</i>
CEAR	Canadian Environmental Assessment Registry
CHRP	Caribou Habitat Restoration Plan
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPP	Caribou Protection Plan
DFN	Duncan's First Nation
DFO	Fisheries and Oceans Canada
DRFN	Doig River First Nation
DTFN	Dene Tha' First Nation
EA	environmental assessment
EA Report	Environmental Assessment Report
EAS	environmental alignment sheet
EC	Environment Canada
EPP	Environmental Protection Plan
ESA	NOVA Gas Transmission Ltd.'s Environmental and Socio-Economic Impact Assessment

FA	Federal Authority, as defined in subsection 2(1) of the <i>Canadian Environmental Assessment Act, 1992</i>
FCN	federal coordination notification
FLM	Fort Liard Métis
FNFN	Fort Nelson First Nation
Footprint	footprint study area
GHG	greenhouse gases
GP	Government Participant
ha	hectare
HLFN	Horse Lake First Nation
HRIA	Historical Resources Impact Assessment
HRV	heritage resources value
km	kilometre
KP (K, C)	kilometre post (Komie, Chinchaga)
Local 74	Fort Vermilion Métis Local 74
LSA	local study area
m	metre
mm	millimetre
MFLNRO	BC Ministry of Forests, Lands and Natural Resource Operations
MSD	minimum surface disturbance
NEB Act	<i>National Energy Board Act</i>
NEB Report	<i>National Energy Board Report</i>
NGTL	NOVA Gas Transmission Ltd.
OD	outside diameter
PCM	Post-Construction Monitoring
PPMS	Paddle Prairie Métis Settlement
the Project	the proposed Northwest Mainline Komie North Extension
RAP	restricted activity period
<i>Recovery Strategy</i>	Environment Canada's <i>Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal population, in Canada (2012)</i>

RoW	right-of-way
RSA	regional study area
SARA	<i>Species At Risk Act</i>
TC	Transport Canada
TEK	Traditional Ecological Knowledge
TK	Traditional Knowledge
TLU	Traditional Land Use
TUS	Traditional Use Study
TWS	temporary workspace
UWR	Ungulate Winter Range
VEC	Valued environmental component
VSC	Valued socio-economic component

1.0 INTRODUCTION

1.1 Project Overview

NOVA Gas Transmission Ltd. (NGTL) has applied to the National Energy Board (NEB or Board) under sections 52 and 58 of the *National Energy Board Act* (NEB Act) to construct and operate two new natural gas pipelines on a permanent 32 metre (m) wide right-of-way (RoW), with a total length of 130 kilometres (km) on provincial Crown lands, in northeast British Columbia (BC) and northwest Alberta (AB). The proposed pipeline and associated facilities are collectively known as the Northwest Mainline Komie North Extension (the Project), and include the following:

- Komie North Section – approximately 97 km of 914 millimetre (mm) (36 inch) outside diameter (OD) pipeline, beginning at the proposed Fortune Creek Meter Station to a tie-in point on the Horn River Mainline, parallel and adjacent to existing contiguous RoW and roads for approximately 48 km.
- Chinchaga Section – approximately 33 km of 1 219 mm (48 inch) OD pipeline, beginning at the existing Meikle River Compressor Station to the existing Chinchaga Meter Station, parallel and adjacent to the Chinchaga Lateral Loop pipeline RoW for approximately 31 km.

The section 52 application includes the Komie North and Chinchaga pipeline sections and related facilities. The section 58 application includes stockpile sites, contractor yards, construction camps and borrow pits considered to be temporary facilities, and the Fortune Creek Meter Station and permanent access road. NGTL's section 58 application requests exemption from the requirements of subsections 31(c) and 31(d) and section 33 of the NEB Act in relation to the section 58 facilities. NGTL's planned in-service date for the Chinchaga Section of the Project is April 2014 and April 2015 for the Komie North Section.

Section 3.0 provides a detailed description of the work associated with the Project.

1.2 Rationale for the Project

The purpose of the Project is to provide incremental supply capacity for the Upper Peace River area and to supply customers with direct access to the NOVA Inventory Transfer commercial hub and gas-consuming markets located across North America.

1.3 Baseline Information and Sources

The analysis for this Environmental Assessment Report (EA Report) is based on information from the following sources:

- Project application, including NGTL's Environmental and Socio-economic Impact Assessment (ESA);
- NGTL's supplemental filings to the Project application;
- responses to information requests;
- submissions from the public and interested parties, including letters of comment; and,

- evidence submitted during the public hearing, including evidence from Fort Nelson First Nation (FNFN) and Acho Dene Koe First Nation (ADKFN).

Filed information pertaining to the Project application can be found within ‘Regulatory Documents’ on the NEB’s website (www.neb-one.gc.ca). For more details on how to obtain documents, please contact the Secretary of the NEB at the address specified in Section 9.0 of this report.

2.0 ENVIRONMENTAL ASSESSMENT PROCESS

On 8 April 2011, NGTL filed a Project Description with the NEB regarding the proposed Project. This action initiated certain environmental assessment (EA) process activities under the *Canadian Environmental Assessment Act 1992* (CEA Act 1992), including the registration of the Project on the Canadian Environmental Assessment Registry (CEAR) on 20 April 2011 (former registry number 11-01-61860). Following the repeal of the CEA Act 1992 on 6 July 2012, the Project is not a designated project under the *Canadian Environmental Assessment Act 2012*. The Board continued its EA for the Project pursuant to, and in accordance with, its public interest mandate under the NEB Act.

On 16 April 2012, pursuant to the *Species at Risk Act* (SARA), the NEB notified the Minister of Environment that the Project, if constructed and approved, may affect seven wildlife species, or their habitats, that are listed on Schedule 1 of the SARA.

2.1 Government Participation in the EA Coordination Process

On 21 April 2011, the NEB issued a Federal Coordination Notification (FCN) letter to government authorities, pursuant to the CEA Act 1992 legislation. Environment Canada (EC) participated in the NEB hearing process as a Government Participant (GP). Fisheries and Oceans Canada (DFO) and Transport Canada (TC) did not seek GP status at the hearing. DFO and TC indicated they may have to issue permits under the *Fisheries Act* and the *Navigable Waters Protection Act*, respectively.

The FCN letter was also sent to provincial agencies in AB and BC. AB Environment, AB Sustainable Resource Development (ASRD) and AB Transportation reviewed the information, but did not wish to participate in the federal review of the Project. ASRD did, however, express an interest in monitoring the EA process. In 2010, the NEB and the BC Environmental Assessment Office signed a memorandum of understanding regarding responsibilities surrounding environmental assessments. No provincial agencies from BC expressed an interest in participating in the federal review of the Project.

2.2 Opportunities for Public Input into the EA

On 24 January 2012, the NEB released Hearing Order GH-001-2012 describing the process and requirements of the public hearing for the Project. On 27 March 2012, the NEB released Amended Hearing Order GH-001-2012 further describing the public hearing process for the Project. The NEB process allowed for a number of opportunities for the public and Aboriginal groups to participate and provide input into the EA. This included providing comments on the Scope of the EA and List of Issues, filing a letter of comment, making an oral statement at the hearing or participating as an

Intervenor. The GP option was provided to government authorities to allow them to participate without becoming Intervenors.

Throughout the hearing process, the Board received submissions pertaining to Project-related EA matters. Section 5.0 describes the issues raised in submissions to the Board.

2.2.1 Draft Scope of EA

Pursuant to the CEA Act 1992, the NEB prepared a draft Scope of the EA, which was attached to the GH-001-2012 Hearing Order and posted on the CEAR on 3 February 2012 (Appendix 1). All interested parties were encouraged to review the document and provide any suggested amendments or additions to the NEB by 6 March 2012. The NEB did not receive any comments on the draft Scope of the EA.

2.2.2 NEB Hearing

The oral public hearing for the Project was held in Fort Nelson, BC from 10 to 11 October 2012 and Calgary, AB from 15 to 24 October 2012.

3.0 DESCRIPTION OF THE PROJECT

Table 1 provides information on each Project component throughout the three phases of the Project: construction, operations and abandonment.

Table 1 Description of the Project

Physical Work or Activity
Pipeline Construction Phase
<i>Timeframes:</i>
- <i>Chinchaga Section borrow pits for hydrostatic testing and stockpile sites: second quarter 2013</i>
- <i>Komie North Section construction camp: second quarter 2014</i>
- <i>Chinchaga Section pipeline construction: fourth quarter 2013 to second quarter 2014</i>
- <i>Komie North Section pipeline construction: fourth quarter 2014 to second quarter 2015</i>

Physical Work or Activity

Komie North Section construction camp:

- Construction and removal of a new temporary camp at 018-H/94-O-08 and 017-H/94-O-08.
- The 200 m x 570 m site would require a temporary 96 m long access road.

Chinchaga Section construction camp:

- Continued operation of a previously-approved temporary camp, located at NE-1-96-5 W6M and NW-6-96-4 W6M in the vicinity of the Chinchaga Section.
- This camp was constructed as part of NGTL's Tanghe Creek Lateral Loop No. 2 Project (Order XG-N081-14-2011), and would be dismantled and the land reclaimed in accordance with the conditions of those approvals.

Pipeline construction:

- Pipeline construction and installation, including the clearing of a 32 m construction RoW. The amount of new permanent RoW would depend on adjacent dispositions.
- Komie North Section starts at the proposed Fortune Creek Meter Station, Unit 55, Block A, Group 94-O-15 (kilometre post Komie (KPK) 0) and ends at a point adjacent to Cabin Meter Station located at Unit 64, Block J, Group 94-P-4 (KPK 96).
- Chinchaga Section starts at Meikle River Compressor Station at NE-13-96-5 W6M (kilometre post Chinchaga (KPC) 0) and ends at a point adjacent to the Chinchaga Meter Station at NE-26-94-2 W6M (KPC 33).
- Installation of permanent facilities including cathodic protection systems and block valves for each section, and a meter station on the Komie North Section. Some facilities may require permanent access roads for operation and new electrical power lines and facilities may be required to operate metering facilities.
- Installation and use of temporary facilities including log decks, access roads, watercourse vehicle crossings, contractor yards and stockpile sites. Temporary workspace (TWS) would also be required at various locations adjacent to the RoW and at all crossings.
- Construction of 83 watercourse crossings using an in-stream construction method for all crossings.
- Physical activities would include site preparation (clearing, stripping, stockpiling and grading), pipe stringing and welding, trench excavation, lowering-in pipe, backfilling, hydrostatic testing, and clean-up and final reclamation.

Hydrostatic testing:

- *Komie North Section:* Water would be sourced from Fortune Lake and Two Island Lake.
- *Chinchaga Section:* Water would be sourced from the Hotchkiss River and snowmelt and rainwater collected in dugouts.

<p>Pipeline Operation Phase</p> <p><i>Estimated in-service date:</i></p> <ul style="list-style-type: none"> - Chinchaga Section: April 2014 - Komie North Section: April 2015 <p><i>Estimated operational life of Project will be in excess of 30 years.</i></p>
<ul style="list-style-type: none"> • Operational maintenance of the pipeline. • Equipment/vehicle operation. • Vegetation control for non-native and noxious weed species and for operations and maintenance purposes. • Aerial or ground-based visual pipeline patrols to inspect for environmental and integrity issues. • Maintenance digs would be conducted in the event that an actual or suspected pipeline integrity problem is identified, and subsequent reseeding and reclamation would be undertaken. • Computer-based supervisory control and data acquisition system would be used to remotely monitor and control pipeline operations from the TransCanada Pipelines Limited Operations Control Centre located in Calgary, AB.
<p>Pipeline Abandonment Phase</p>
<ul style="list-style-type: none"> • The Project will be decommissioned and abandoned in accordance with all applicable regulatory requirements at the time of decommissioning and abandonment.

4.0 DESCRIPTION OF THE ENVIRONMENT

This section describes the environmental and socio-economic setting of the Project. The description is based largely on NGTL’s desktop/literature review, field surveys conducted in 2011 and 2012, as well as NGTL’s review of applications prepared for other projects and its communications with Aboriginal groups, local land users, representatives from local and regional governments, and provincial and federal regulators. Information provided by NGTL focuses primarily on the Project footprint study area (Footprint); however, some information may apply to the local study area (LSA) or regional study area (RSA). NGTL states that reconnaissance and detailed field studies were conducted within the Footprint and the LSA using a corridor width of approximately two km centered on the proposed pipeline sections, as well as known areas where TWS was expected to be necessary.

Below are definitions for the various study areas NGTL used to determine and assess each environmental and social component discussed in its ESA:

- The Project Footprint represents the physical area required for all Project components, including the permanent pipeline RoW and TWS requirements, NGTL states that it is 363.1 hectares (ha) for the Komie North Section and 122.5 ha for the Chinchaga Section,
- The LSA for:
 - terrestrial environmental components (vegetation and wetlands, wildlife and wildlife habitat, historic resources, traditional land use, human occupancy, resource and land use, infrastructure and services) extends one km on each side of the pipeline centre

line. It is 19 501 ha for the Komie North Section and 6 883 ha for the Chinchaga Section.

- potential impacts on traditional land and resource use are primarily assessed within the Footprint and the LSA of the Project. Since traditional land and resource use may also extend beyond the LSA into the RSA of the Project, potential impacts to traditional land and resource use may also be assessed within the RSA of the project, at the direction of the individual community. FNFN chose a five km LSA to conduct their Traditional Use Study (TUS).
 - assessment of woodland caribou (boreal population) (caribou) mortality for the Komie North Section includes the one km LSA for the new cut portion, from KPK 0.0 to KPK 40.0.
 - fish and fish habitat includes all watercourses crossed by the Project from 100 m upstream to 300 m downstream of the proposed crossing point.
 - air quality extends five km on either side of the pipeline centre line.
- The RSA is an area which extends beyond the LSA boundary and also varies with each environmental and socio-economic element being considered. A separate RSA boundary for each element was established in consideration of the Project's regional effects on the individual element.

Table 2 provides a description of the Project environment and is based on NGTL's application and subsequent filings during this proceeding, and includes components of the Project Footprint, LSA and RSA as applicable to each environmental and socio-economic element.

Table 2 Description of the Environment

Terrain and Soils	
<ul style="list-style-type: none"> The topography traversed by the pipelines is generally level to undulating, with some gently rolling sections traversed by the Chinchaga Section. None of the proposed watercourse crossings were observed to have significant slope instabilities that could lead to failures and none are considered to be thaw sensitive. The Project does not encounter any sites listed on the Federal Contaminated Sites Inventory. There are no known areas of soil contamination; however, the likelihood of contamination is considered to be higher on or adjacent to previously-disturbed lands. 	
Komie North Section	Chinchaga Section
<ul style="list-style-type: none"> Approximately 40 km (41%) of the route is underlain by organic deposits thicker than 0.3 m. Located in an area of sporadic, discontinuous permafrost. Nine locations with permafrost were observed over a total distance of 730 m. Depth of permafrost ranged from 1.8 m to 8.0 m deep. 	<ul style="list-style-type: none"> Approximately 2% of the route is underlain by organic deposits thicker than 1 m. Located outside of the sporadic discontinuous permafrost zone.
Air Quality	
<ul style="list-style-type: none"> Construction emissions of criteria air contaminants (CAC) and greenhouse gases (GHG) would represent a small increase over existing air quality conditions, in the near-term. Long-term CAC and GHG emissions for the Project stem from the fuel combustion associated with helicopter access for line inspections, and will be significantly less than the emissions associated with construction. 	
Vegetation	
Komie North Section	Chinchaga Section
<ul style="list-style-type: none"> Located within the Taiga Plain ecozone. Lowland areas are generally represented by black spruce and typical treed bog and treed swamp plant species. Upland areas contain white spruce and trembling aspen. 	<ul style="list-style-type: none"> Located within the Boreal Plain ecozone. Upland areas are generally represented by trembling aspen, white spruce, black spruce and jack pine. Treed fens and swamps also occur.

<ul style="list-style-type: none"> No old growth forest stands were observed. NGTL noted the presence of one weed species, scentless chamomile, approximately 80 m from the proposed RoW. 	<ul style="list-style-type: none"> No old growth forest stands were observed, although late successional-stage forests are present. NGTL noted the presence of one weed species, Canada thistle, approximately 15 m from the proposed RoW.
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<p>Wetlands</p>	
<ul style="list-style-type: none"> The wetlands traversed by the Project are almost exclusively organic peatlands, and the Project would not cross any wetlands of international significance. 	
<p>Komie North Section</p>	<p>Chinchaga Section</p>
<ul style="list-style-type: none"> The route crosses 194 ha of wetlands (53% of the disturbance footprint). Wetland crossings include 93 ha of treed bog, 71 ha of treed swamp and 17 ha of shrubby swamp. 	<ul style="list-style-type: none"> Wetlands are traversed for 27 ha (22% of the disturbance footprint). Wetland crossings include 11 ha of treed fen and 11 ha of shrubby swamp.

<p>Water Quality and Quantity</p>	
<ul style="list-style-type: none"> There are no community watersheds located within NGTL's Water Quality and Quantity RSAs. Domestic and industrial water wells are present in the vicinity of both pipeline sections. 	
<p>Komie North Section</p>	<p>Chinchaga Section</p>
<ul style="list-style-type: none"> Crosses 69 watercourses, including: <ul style="list-style-type: none"> Brandt Creek and five of its tributaries; Komie Creek and 22 of its tributaries; four tributaries to the Tsea River; seven tributaries to Estsho Creek; Gote Creek and one of its tributaries; seven tributaries to the Kiwigana River; Dilly Creek and four of its tributaries; thirteen tributaries to Emile Creek; and two unnamed crossings. 	<ul style="list-style-type: none"> Crosses 14 watercourses, including: <ul style="list-style-type: none"> three tributaries to the Hotchkiss River; four tributaries to the Meikle River; one tributary to Meikle Creek; and Midget Creek and five of its tributaries.

Fish and Fish Habitat	
Komie North Section	Chinchaga Section
<ul style="list-style-type: none"> • Crosses 69 watercourses, including four beaver dam complexes (BDC). Fifteen of the watercourses are identified as either fish bearing or have the potential to be fish bearing. • Fish bearing watercourses include Brandt Creek (7.9 m wide), Komie Creek (6.6 m), five unnamed tributaries to Komie Creek (1.2 – 2.8 m), three unnamed tributaries to the Kiwigana River (two BDCs and 5.1 m), Dilly Creek (10.8 m), unnamed tributary to Dilly Creek (BDC) and three unnamed tributaries to Emile Creek (BDC, 3.5 m and 4.7 m). • Six species of sportfish (Arctic grayling, chum salmon, inconnu, burbot, northern pike and walleye) and 12 species of non-sportfish (trout-perch, longnose sucker, white sucker, lake chub, slimy sculpin, spoonhead sculpin, ninespine stickleback, brook stickleback, goldeye, flathead chub, emerald shiner and finescale dace) may occur within fish-bearing watercourses and drainages crossed by the Project. 	<ul style="list-style-type: none"> • Crosses 14 watercourses, including two BDCs. Eight of the watercourses are known or assumed to be fish bearing. • Fish bearing watercourses include unnamed tributary to the Hotchkiss River (BDC), four unnamed tributaries to Meikle River/Creek (BDC and 1.8 – 4.7 m), Midget Creek (4.5 m), and four unnamed tributaries to Midget Creek (0.7 – 2.75 m). • Five species of sportfish (Arctic grayling, burbot, northern pike, walleye and mountain whitefish) and 12 species of non-sportfish (longnose sucker, white sucker, lake chub, longnose dace, finescale dace, pearl dace, trout-perch, slimy sculpin, spoonhead sculpin, brook stickleback, spottail shiner, goldeye and flathead chub) may occur within fish-bearing watercourses and drainages crossed by the Project.

Federal and Provincial Species at Risk
Komie North Section temporary construction camp
<ul style="list-style-type: none"> • The camp is not located within a designated caribou range, caribou core habitat or ungulate winter range (UWR).
Pipeline facilities
<ul style="list-style-type: none"> • There are seven wildlife species listed on Schedule 1 of SARA whose habitats occur on the routes: caribou (Threatened), Canada warbler (Threatened), common nighthawk (Threatened), olive-sided flycatcher (Threatened), western toad (Special Concern) and rusty blackbird (Special Concern). Suitable habitat for the yellow rail, which is listed as a species of Special Concern, is found along the Chinchaga Section. • Four species with potential habitat in the vicinity of the pipeline are listed by Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as being of Special Concern: grizzly bears, wolverine, horned grebe, and short-eared owl. • There are no previously-recorded occurrences of rare plants that are federally listed on Schedule 1 of SARA or that have a COSEWIC designation within 10 km of the Project, nor were any observed during NGTL's vegetation surveys. • There are no fish species present in the watercourses and drainages crossed by the proposed Project that are listed federally under SARA or COSEWIC.

Komie North Section	Chinchaga Section
<ul style="list-style-type: none"> • Crosses critical habitat identified for caribou within the federal Maxhamish and Snake-Sahtahneh caribou ranges for 77 km of its length. • Traverses provincially designated caribou habitat areas, including the Fortune core habitat in the Maxhamish range from KPK 0.0 to approximately KPK 11.0, four UWR areas and a wildlife habitat area, designated as a caribou calving area. • Three plant species listed as rare by the BC Conservation Data Center (BC CDC) were observed by NGTL on the pipeline RoW: marsh fleabane; purple-stemmed aster; and meadow willow. • NGTL recorded four BC CDC-listed ecological communities of conservation concern on the RoW: scrub birch-willow-water sedge fen; tamarack-black spruce-mountain alder; tamarack-buckthorn; and white spruce-currant-horsetail forest. • Three BC-listed fish species, ninespine stickleback, inconnu and goldeye are known to occur within downstream watercourses and may be present in the Project area watercourses. • NGTL noted a previous rusty blackbird occurrence near KPK 96.7. • NGTL observed two provincially-listed bird species during its wildlife surveys; Cape May warbler and Connecticut warbler. 	<ul style="list-style-type: none"> • Traverses critical habitat identified for caribou within the federal Chinchaga caribou range for its entire length and the provincially-designated Chinchaga caribou zone between KPC 11.2 and KPC 12.0. • Traverses a provincially-managed Secondary Grizzly Bear Zone for its entire length. • Four plant species listed as rare by the AB Conservation Information Management System were observed by NGTL on the pipeline RoW: golden saxifrage; silky fork moss; green-cushioned weissia; and one lichen species. No rare plant communities were recorded on the RoW. • Two AB-listed fish species, Arctic grayling and the spoonhead sculpin may occur in the Project area. NGTL notes that some of the watercourses crossed by the pipeline route provide suitable habitat for Arctic grayling. • NGTL noted a previous occurrence of wood bison tracks between KPC 31 and 33 and wolverine tracks at KPC 28. • There is potential trumpeter swan breeding habitat in the vicinity of the Chinchaga Section however current information indicates there are no trumpeter swan water bodies or occurrences within 20 km of the Project.

Wildlife and Wildlife Habitat	
Komie North Section	Chinchaga Section
<ul style="list-style-type: none"> • NGTL observed mammal tracks and sign during its wildlife surveys including caribou, grizzly bear, black bear, moose, Canada lynx, northern river otter, red fox, gray wolf, mink, marten, ermine, snowshoe hare, red squirrel, mice and beaver. • Sixty bird species, including three raptors, 53 songbirds, three shorebird species and one upland game species were recorded or observed by NGTL during its wildlife surveys. • Wood frog tadpoles were observed in wetlands surveyed along the route. 	<ul style="list-style-type: none"> • NGTL observed mammal tracks and sign during its wildlife surveys including moose, deer, black bear, wolverine, northern river otter, gray wolf, coyote, fisher, ermine, marten, Canada lynx, snowshoe hare, red squirrel, mice and beaver. • Thirty eight bird species, including 35 songbirds, two shorebirds and one upland game species occurrences were documented. • Wood frogs and boreal chorus frogs were observed in wetlands along the route. • AB Environmentally Significant Area No. 548 is located within the northeast corner of the Project RSA.

Acoustic Environment	
	<ul style="list-style-type: none"> The Project is located in a remote area and existing noise levels in the area are primarily due to local and industrial vehicle traffic and industrial maintenance activities.

Resource Use and Geographic Setting	
	<ul style="list-style-type: none"> The Project traverses forested, provincial Crown lands for 100% of its length. Land use is predominately related to oil and gas activities, forestry and hunting. Current land use by Aboriginal people includes trails, habitation, harvesting, hunting, fishing, trapping, gathering places and sacred areas.
Komie North Section	Chinchaga Section
<ul style="list-style-type: none"> Located within the Northern Rockies Regional Municipality in BC. This section would be located within the planning area of the Etsho Resource Management Zone of the Fort Nelson Land and Resource Management Plan. This area is used to provide for development of resources such as timber, natural gas and minerals and supports opportunities for oil and gas transportation. Land use in the general area is related to oil and gas activity, forestry and recreation. There is one proposed construction camp located within units 17 and 18-H/94-O-8 in the LSA for the pipeline section. 	<ul style="list-style-type: none"> Located within the Clear Hills County in AB. This section would be located within the planning area of the Clear Hills County Land Use Bylaw, and lies in the land use designation Crown Land Management – Forestry District. The land use adjacent to this pipeline is predominately related to oil and gas activity. Uses by local residents include trap lines for trapping and hunting. Temporary construction camp is located at NE-01-096-05 W6M and NW-06-096-04 W6M.

<h3>Traditional Land and Resource Use</h3>	
<ul style="list-style-type: none"> The Project is located within Treaty 8 Territory. Potentially-affected Aboriginal groups were invited to participate in NGTL’s Traditional Ecological Knowledge (TEK) program and Traditional Land Use (TLU) studies. TEK studies focus on experiential knowledge and current use of the land for traditional activities according to Aboriginal people. TEK is collected over generations and passed down from the Aboriginal Elders. For this Project, Aboriginal participants undertook the documentation of their knowledge about the land as participants in biophysical field studies and over-flights of the Project area. Aboriginal groups were also involved in the collection of TLU information that included map reviews, community interviews, field reconnaissance and follow-up reporting. TLU studies were either community-directed or facilitated by NGTL for the Project. For this Project, Aboriginal participants provided information about the use of Crown lands potentially disturbed by pipeline construction and clean-up activities, including associated physical works and activities. NGTL TEK facilitators ensure proprietary information is kept in confidence and reviews are conducted with participating Aboriginal groups to confirm accuracy and to seek approval for the inclusion and consideration in Project planning, where warranted. NGTL indicated its TLU Study participation included, amongst other things, a map review, interviews, over-flight, site visits, and a results review/mitigation meeting. NGTL indicated that each participating Aboriginal group was asked to identify potential TLU sites at each watercourse crossing location along each of the proposed pipeline loops for the Project, including the use of each watercourse as a travelway and/or a fishing locale. 	<h4>Chinchaga Section</h4> <ul style="list-style-type: none"> During the aquatic assessments, Aboriginal representatives from the participating communities assisted in, among other things, identifying whether a particular stream or river was used for navigation, cultural use or traditional use, and whether members of the communities currently use lands in the study area to maintain a traditional way of life. Within the Project area, one watercourse, an unnamed tributary to the Meikle River (CH7), was identified as used for navigational and traditional purposes by Aboriginal groups. No impacts on navigation or on TLU during the construction of this proposed pipeline loop were identified. A campsite along the adjacent existing RoW at KPC 3.5. A hunter’s cabin along the proposed hydrostatic testing access road at KPC 4.
<h4>Komie North Section</h4> <ul style="list-style-type: none"> The following watercourses are used for navigational and traditional purposes by Aboriginal groups: tributary to Dilly Creek (WC 48.1 and WC 52), Dilly Creek (WC 48), and Petitot River (approx 21.8 km northeast of KPK 0). These watercourses are used for both navigation and transportation routes to downstream waters. No impacts on navigation or TLU during construction were identified. Participants in the TEK studies reported that Arctic grayling, mountain whitefish, northern pike, walleye and burbot located in Project area watersheds have traditional value for food and cultural wellbeing. ADKFN mentioned that Arctic grayling was caught in the tributary that flows north into Dilly Creek, that the Petitot River supports northern pike, loche (burbot), whitefish and walleye, and that jackfish (i.e., northern pike) are found in the Mackenzie River system. 	

<ul style="list-style-type: none"> • FNFN indicated Tsea River subsistence value of reported fishing for gold eye, pickerel and jackfish within 5 km of the pipeline route. • TEK collected during the wildlife and wildlife habitat field program will be provided in supplemental reports – Northwest Mainline Komie North Extension Wildlife Pre-Construction Survey and Environmental and Socio-Economic Impact Assessment–Ancillary Infrastructure. • Aboriginal people use land in the Komie area for camps, cabins and hunting, fishing, trapping. • FNFN have 3 commercial traplines within its 5 km LSA in the Two Island Lake area. • FNFN have burial sites in Two Island Lake area 1 to 2 km east of the Project Footprint and not within 100m. • FNFN indicated Skinny Lake, Deer River and Two Island Lake area abundance of game, potable water, food and medicinal plants, and fish. • Trails and travelways mapped within a 5 km radius of the pipeline route. 	<ul style="list-style-type: none"> • Balsam fir stands from KPC 9.5 to KPC 11 is very useful and participants have requested the opportunity to salvage the timber.
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Heritage Resources (archaeological sites, paleontological potential areas)	
<ul style="list-style-type: none"> • An archaeological impact assessment (AIA) and historical resources impact assessment (HRIA) for the proposed pipeline sections, areas of moderate to high archaeological potential were targeted for pedestrian assessment and where warranted, subsurface testing. TEK participants assisted with subsurface testing and offered information concerning evidence of traditional use. Participating Aboriginal groups were involved in a review of the cultural resource TEK information. • HRIA and AIA supplemental studies scheduled for summer 2012 will be filed with the Board, including of the proposed construction camp. 	<p style="text-align: center;">Chinchaga Section</p>
<ul style="list-style-type: none"> • An AIA was completed for this section during the spring/summer 2011. • There are no previously recorded archaeological sites within this pipeline section. There are 2 previously recorded sites within approximately 15 m NE of KPC 77.2 and KPC 95.7. An additional 12 archaeological sites are located within 150 m. • 608 shovel tests were excavated across the footprint of this pipeline section; no cultural materials were found at any of the sites tested. • The named drainage and watercourse crossings examined include Dilly Creek, Komie Creek and Brandt Creek. 	<ul style="list-style-type: none"> • A HRIA was conducted for this pipeline section under Archeological Research Permit 11-035. Fieldwork began in spring 2010. • The HRIA of stockpile sites and new access routes required for hydrostatic testing will be filed with the Board. • Results from the site file search conducted by the Historic Resources Management Branch of Alberta Culture and Community Spirit (ACCS) listed these lands as having no heritage resources value (HRV) in the current Listing of Historic Resources for Alberta.

<ul style="list-style-type: none"> • There are no archeological resources affected by this pipeline assessed under Heritage Inspection Permit 2011-0056. • Final <i>Heritage Conservation Act</i> clearance recommendations pertaining to the 2011 Heritage Inspection Permit will be submitted to BC Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) for Komie North in September 2011. • The Komie North Section is not located within any previously designated paleontological sites and is located in an area of low paleontological potential. • FNFN have identified burial sites in Two Island Lake area 1 to 2 km east of the Project Footprint and not within 100 m. • One previously unidentified archaeological site within the LSA is not located within the Project Footprint but on east side of Two Island Lake. FNFN contacted the BC Archaeology Branch and is in the process of filing information with the provincial government about the site. 	<ul style="list-style-type: none"> • There are no previously identified historic resources within 1 km. • The pipeline section crosses several watercourses, drainages and lands that support native vegetation, thereby necessitating further archaeological assessment. • Ground reconnaissance at 10 target areas included an intensive visual inspection of the ground surface and a subsurface shovel testing program in areas of moderate to high archaeological potential within the Footprint. No surface features were noted at any of the 10 locations upon visual inspection. NGTL conducted 217 shovel tests at these locations, none of which tested positive for cultural material. • Members of the Dene Tha' First Nation (DTFN), Beaver First Nation (BFN), Fort Vermilion Métis Local 74 (Local 74), Doig River First Nation (DRFN) and Duncan's First Nation (DFN) participated in the pedestrian assessment. • Final <i>Heritage Resources Act</i> clearance recommendations pertaining to Archaeological Research permit 11-035 will be submitted to ACCS, copies will be provided. • The Chinchaga Section is located on lands listed as having no HRV for paleontological resources in the current Listing of Historic Resources and is located in an area of low paleontological potential.
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5.0 COMMENTS FROM THE PUBLIC

This section describes the issues raised during the process outlined in Section 2.0 of the EA Report.

5.1 Project-Related Issues Raised in Comments Received by the NEB

Several Project-related issues were brought to the Board’s attention by government agencies and Aboriginal groups through their filings. These submissions outlined a number of concerns relevant to the EA as outlined in Table 3. To view the submitted documents, please refer to the Project folder in the ‘Regulatory Documents’ area of the NEB website (<https://www.neb-one.gc.ca>). If computer access is not available, you may obtain copies through the Secretary of the Board via the contact information provided in Section 9.0.

Table 3 Submissions to the NEB

Submitter	Oral Hearing Participation	Topics of Interest
ADKFN	Intervenor <ul style="list-style-type: none"> ▪ Oral Statement ▪ Final Argument 	<ul style="list-style-type: none"> ▪ Traditional use and contemporary land issues ▪ Cumulative effects ▪ Consultation and accommodation of rights and title ▪ Specific TUS burial and cabin sites ▪ Comprehensive Land Claim in BC and treaty process underway ▪ Social and cultural wellbeing/Fort Liard residential school ▪ Trapping licenses use
EC	Government Participant <ul style="list-style-type: none"> ▪ n/a 	<ul style="list-style-type: none"> ▪ Caribou and caribou habitat ▪ Western toad ▪ Supplemental SARA species field surveys ▪ Migratory birds ▪ Vegetation, rare plants and wetlands ▪ Water and air quality
FNFN	Intervenor <ul style="list-style-type: none"> ▪ Oral Statement ▪ Hearing Questions ▪ Final Argument 	<ul style="list-style-type: none"> ▪ Waterfowl nesting sites ▪ Muskeg/wetland interconnectivity ▪ Wetland species and biodiversity ▪ Wildlife corridors and habitat ▪ Caribou habitat ▪ Cumulative effects ▪ Proposed route of the Komie North Section ▪ Environmental impacts and reclamation plans ▪ Water sources for hydrostatic testing ▪ Increased traffic by road segment and time period ▪ LSA 1 km buffer on either side of the pipeline centerline ▪ Human Health impacts ▪ Sites, traditional knowledge, site-specific concerns ▪ Habitation, fish and game harvesting

Submitter	Oral Hearing Participation	Topics of Interest
TC	Responsible Authority <ul style="list-style-type: none"> ▪ n/a 	<ul style="list-style-type: none"> ▪ Navigable waters ▪ CEA Act 1992 requirements ▪ Aboriginal consultation

5.2 Submissions during the Oral Portion of the Hearing

EC released the *Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal population, in Canada (Recovery Strategy)* on 5 October 2012. The *Recovery Strategy* identifies critical habitat for the species pursuant to the SARA and effectively replaces the proposed *Recovery Strategy* released in 2011.

5.3 Comments Received by the NEB on the Draft EA Report

Following the release of the draft EA Report, comments were received from FNFN and NGTL. To view the submitted comments, please refer to the NEB website (www.neb-one.gc.ca) at <https://www.neb-one.gc.ca/ll-eng/livelink.exe?func=ll&objId=737909&objAction=browse&sort=-name&redirect=3>

Appendix 3 provides a summary of the comments received, some of which resulted in wording changes to the EA Report. Explanations have been included for those comments that did not result in changes to the EA Report. In addition to the changes made in the EA Report as a result of comments received, the Board also made various minor wording changes throughout to increase clarity and readability.

6.0 THE NEB'S EA METHODOLOGY

In assessing the environmental effects of the Project, the NEB first considered NGTL's route selection (Subsection 7.1) and then used an issue-based approach to evaluate the Project.

In Subsection 7.2, the NEB assessed interactions expected to occur between the proposed project activities and the surrounding environmental elements, and potential adverse environmental effects that may result. In circumstances where the potential effect was unknown, it was categorized as a potential adverse environmental effect.

The last column of the table in Subsection 7.2 denotes the categories of the analysis of potential adverse environmental effects, which is included as Subsection 7.3. There are two categories: "Analysis of Potential Adverse Environmental Effects to be Mitigated through Standard Measures" (Subsection 7.3.1) and "Analysis of Potential Adverse Environmental Effects to be Mitigated through Non-Standard Design and Mitigation Measures" (Subsection 7.3.2). An evaluation of significance is made after taking into account any proposed mitigation as well as further mitigation recommended by the NEB.

Subsection 7.4 addresses cumulative effects. Appendices III to VI of the *National Energy Board Report* (NEB Report) list all proposed conditions for any regulatory approval of the Project.

7.0 ENVIRONMENTAL EFFECTS ANALYSIS

7.1 Routing of the Pipelines

NGTL states that the route selection process for the Project was guided by its desire to loop pipelines where feasible, reduce the amount of new land disturbance and maximize operational efficiency. NGTL's routing process considered the following criteria: paralleling existing disturbances to the greatest extent possible, reducing the number of watercourse crossings, avoiding or reducing effects on identified environmentally sensitive areas and unstable terrain, avoiding lands of designated status, and minimizing the effects on water supply systems and groundwater resources. With respect to other routing considerations, NGTL notes that its review includes a balance between the safety, environmental, and engineering requirements of the Project, while also minimizing the effects to the landscape and FNFN's traditional land use.

NGTL used existing pipeline corridors as the preferred alignment for the Chinchaga Section and did not consider routing alternatives because 94 per cent of the route was looping.

In determining the scope for the Komie North Section, NGTL's ESA evaluated two route alternatives in addition to the preferred route. Both of the route alternatives were located entirely within the Maxhamish and Snake-Sahtahneh caribou ranges, including significant distances of RoW traversing provincially-designated core caribou habitat. With respect to total length and amount of contiguous RoW, the two alternatives were of comparable lengths to the preferred route, but each alternative had a higher percentage of contiguous RoW than the preferred route. The total number of watercourse crossings for each of the alternative routes was also fewer than the preferred route.

NGTL concluded that its preferred route for the Komie North Section was more suitable than either of the two alternatives. NGTL further noted that its preferred route was selected because it satisfied the routing criteria parameters of paralleling existing linear disturbances, minimizing potential effects on caribou habitat, and reducing the overall length of the pipeline.

The Board notes that when providing information on alternatives to the project, such as routing alternatives, the Board's Filing Manual expects applicants to describe functionally different ways to meet the project need and achieve the project purpose, and to describe the process used to determine how the proposed project is viable and is the preferred alternative. Given that route selection is an early step in project design and given that alternative routes are not the subject of the actual application to the NEB, the description of alternative routes is generally more conceptual in nature.

The potential impacts associated with pipeline routing to traditional land and resource use are discussed further in the NEB Report.

7.2 Project - Environment Interactions

Table 4 provides a description of the Project-related environmental interactions and potential adverse environmental effects arising from the Project.

Table 4 Project-Environment Interactions

Environmental Element	Description of Interaction (How, When, Where, or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Measures Discussed in:
Physical Environment – Permafrost	<ul style="list-style-type: none"> • Clearing, grading, excavation and backfilling activities during construction in areas with discontinuous permafrost • Operation of pipelines in areas with discontinuous permafrost 	<ul style="list-style-type: none"> • Degradation of permafrost • Terrain instability 	7.3.1
Soil and Soil Productivity	<ul style="list-style-type: none"> • Clearing, grading, excavation, backfilling, reclamation and hydrostatic testing activities during construction • Construction and operation activities during wet/thawed ground conditions • Maintenance dig activities during operation of pipelines 	<ul style="list-style-type: none"> • Degradation of soil structure and quality, with resultant loss of productivity • Loss of soil due to water erosion • Contamination of soils with resultant loss of soil functions 	7.3.1
Vegetation	<ul style="list-style-type: none"> • Vegetation clearing, surface mulching, trench excavation and hydrostatic testing activities during construction • Use of seed mixes during reclamation activities • Use of equipment and vehicles during construction and operation • Maintenance activities during operation of pipelines 	<ul style="list-style-type: none"> • Loss or alteration of native vegetation and change in species diversity • Loss or alteration of rare plant populations and rare ecological communities • Loss of seed bank in surface soil • Introduction or spread of weeds or non-native invasive species 	7.3.1

Environmental Element	Description of Interaction (How, When, Where, or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Measures Discussed in:
Water Quality and Quantity	<ul style="list-style-type: none"> • Clearing, grading, excavation, backfilling and reclamation during construction • Hydrostatic testing activities including withdrawal of water volumes and disposal • Installation, use and removal of temporary vehicle crossing structures • Construction of watercourse crossings using an open cut or isolated technique • Use of construction vehicles and equipment during construction and operation of pipelines • Maintenance dig activities during operation of pipelines 	<ul style="list-style-type: none"> • Alteration and/or disruption of natural surface and subsurface water flow patterns • Reduction of surface and subsurface water quality 	7.3.1
Wetlands	<ul style="list-style-type: none"> • Construction activities within and adjacent to wetlands: clearing, grading, excavation, backfilling, reclamation and hydrostatic testing • Use of construction vehicles and equipment during construction and operation of pipelines • Maintenance activities during operation of pipelines 	<ul style="list-style-type: none"> • Loss or alteration of wetland hydrologic, water quality and habitat • Change in wetland community diversity 	7.3.1 7.3.2.1
Fish and Fish Habitat	<ul style="list-style-type: none"> • Construction activities within and adjacent to watercourses: clearing, grading, excavation, backfilling, reclamation and hydrostatic testing • Installation, use and removal of temporary vehicle crossing structures • Construction of watercourse crossings using an open cut or isolated technique • Removal of beaver dams upstream of watercourse crossing • Fish salvaging activities during in-stream construction • Bank and in-stream restoration activities, and vegetation control during operations • Increase in public access as a result of construction activities 	<ul style="list-style-type: none"> • Fish stress, injury or mortality • Alteration, disruption or destruction of fish habitat (in-stream and riparian areas) • Increased suspended sediment concentrations in the water column • Blockage of fish movement • Inter-basin transfer of aquatic organisms • Contamination of in-stream and riparian habitat 	7.3.1

Environmental Element	Description of Interaction (How, When, Where, or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Measures Discussed in:
Wildlife and Wildlife Habitat	<ul style="list-style-type: none"> • Clearing, grading, excavation, backfilling, reclamation and hydrostatic testing activities during construction • Removal of beaver dams upstream prior to construction of in-stream watercourse crossings • Wildlife attraction to wastes from construction and construction camps • Vegetation control for operations and maintenance purposes • Use of construction vehicles and equipment during construction and operation of pipelines • Increase in public access as a result of construction activities 	<ul style="list-style-type: none"> • Change in wildlife habitat • Change in wildlife mortality risk • Change in wildlife movement patterns • Wildlife stress, injury or mortality • Sensory disturbance to wildlife, resulting in displacement to lesser habitat • Human/wildlife conflicts 	7.3.1 7.3.2.2
Species at Risk	<ul style="list-style-type: none"> • Refer to interactions provided for the Vegetation, Fish and Fish Habitat, and Wildlife and Wildlife Habitat elements above 	<ul style="list-style-type: none"> • Stress, injury, reduced reproductive success and mortality of wildlife species at risk, leading to population declines • Loss or alteration of habitat for wildlife species at risk 	7.3.1 7.3.2.3
Air Quality	<ul style="list-style-type: none"> • Use of vehicles and equipment, including helicopters, during construction and operation of pipelines • Burning of slash during construction • Fugitive emissions from the pipeline during transportation of gas, inspections, maintenance or repairs 	<ul style="list-style-type: none"> • Increase in CAC emissions • Increase in GHG emissions 	7.3.1
Acoustic Environment	<ul style="list-style-type: none"> • Use of vehicles and equipment during pipeline construction • Use of vehicles and equipment, including helicopters, during aerial patrols and maintenance activities 	<ul style="list-style-type: none"> • Increase in ambient noise during construction • Increase in short-duration, nuisance noise levels during operations and maintenance activities 	7.3.1

Environmental Element	Description of Interaction (How, When, Where, or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Measures Discussed in:
Human Occupancy and Resource Use	<ul style="list-style-type: none"> Project-related construction and operation activities 	<ul style="list-style-type: none"> Reduction in land base for use by residents and Aboriginal groups Visual and sensory disturbance due to changes in viewscape Disruption of forestry including a loss of merchantable timber Interference with forestry activities Disruption of hunting, fishing, and trapping Increased hunting and fishing access by construction workers Incompatibility of development with land use plans For effects on water wells see Water Quality and Quantity 	7.3.1
Heritage Resources	<ul style="list-style-type: none"> Project-related construction activities Project-related activities including clearing, grading, strippings salvage, trenching, watercourse crossing 	<ul style="list-style-type: none"> Disturbance or destruction of previously unidentified heritage resources 	7.3.1
Traditional Land and Resource Use	<ul style="list-style-type: none"> Project-related construction and operation activities Project-related activities including clearing, grading, strippings salvage, trenching, watercourse crossing, and reclamation 	<ul style="list-style-type: none"> Disruption of subsistence hunting, fishing, trapping, and harvesting may occur during construction and operation Alteration or loss of site-specific TLU identified in the Project area by Aboriginal groups may occur during construction and operation Depletion of resources within Aboriginal traditional territories due to an increase in access may occur during construction and operation 	7.3.1 7.3.2.4

Socio-Economic

	Environmental Element	Description of Interaction (How, When, Where, or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Measures Discussed in:
	Human Health and Aesthetics	<ul style="list-style-type: none"> • RoW clearing leading to increased access 	<ul style="list-style-type: none"> • Adverse effect on wellbeing of Aboriginal people (due to potential impacts to gathering places, sacred sites and other traditional land and resource use sites) 	7.3.1 7.3.2.4
Other	Accidents and Malfunctions	<ul style="list-style-type: none"> • Spill or leak of hazardous materials from use of vehicles and equipment during construction and operation of pipelines • Fire caused as a result of construction activities • Transportation accidents during construction • Third-party line break during construction • Pipeline rupture or leak during operation of pipelines 	<ul style="list-style-type: none"> • Wildfire • Contamination or alteration of: <ul style="list-style-type: none"> ▪ soil productivity ▪ surface and sub-surface water quality ▪ plants and ecological communities ▪ wetland function ▪ fish and fish habitat ▪ wildlife and wildlife habitat ▪ human health 	7.3.1
	Effects of the Environment on the Project	<ul style="list-style-type: none"> • Flooding • Erosion • Wildfire • Severe weather events (e.g., wind, precipitation) 	<ul style="list-style-type: none"> • Loss of depth of cover over the pipelines • Delays in construction and maintenance activities • Increased complexity of construction activities 	7.3.1

7.3 Analysis of Potential Adverse Environmental Effects

NGTL proposed several mitigation measures to avoid or minimize the potential adverse environmental effects of the Project. These measures included route selection, implementing minimal surface disturbance (MSD) techniques to decrease stripping within the RoW, and minimizing the overlap of construction activities with restricted activity periods (RAP).

NGTL committed to several mitigation measures in its application, subsequent updates and responses to information requests. The reader is referred to NGTL's application and supporting documentation for details on all the proposed mitigation. The mitigation measures proposed are intended to reduce or eliminate the potential adverse environmental effects of the Project. Some of these measures are considered standard to the industry, while some involve site- or Project-specific consideration.

In order to ensure that mitigation measures and monitoring are effectively carried out for the construction and operation phases of the Project, the Board considers the preparation of an Environmental Commitments Tracking Table, an Environmental Protection Plan (EPP) and a Post-Construction Monitoring (PCM) program to be necessary fundamental tools. These are discussed below.

Environmental Commitments Tracking Table

The NEB examined NGTL's mitigation measures, and notes the large number of both detailed and broad commitments made on various issues, in multiple documents. Throughout the various stages of the NEB's assessment process, NGTL provided a number of additional commitments in order to address specific concerns brought to its attention. To ensure that no commitments are overlooked, the Board recommends that any Certificate that is issued include a condition requiring NGTL to maintain an Environmental Commitments Tracking Table for reporting on the status of commitments to be fulfilled during construction and operations. See **Condition 14** in Appendix III and **Condition 16** in Appendix IV of the NEB Report for detailed wording.

Environmental Protection Plan

NGTL has submitted a draft EPP, including environmental alignment sheets (EAS). The EPP includes the mitigative measures that NGTL commits to implement during construction. The Board recommends that any Certificate that is issued include a condition requiring NGTL to file an updated comprehensive EPP and EAS, including updated information from surveys, commitments and conditions. The updated EPP and EAS should also provide: evidence that there is a management system in place that ensures the updates of the environmental protection procedures and mitigation measures are effectively communicated to employees, contractors and regulators; all mitigation related to caribou and caribou habitat; and that consultation took place with relevant government authorities and Aboriginal groups, where applicable. See **Condition 6** in Appendix III, and **Conditions 6** and **4** in Appendices IV and VI, respectively, of the NEB Report for detailed wording.

Post-Construction Monitoring Program

A robust PCM program is key to ensuring potential adverse effects have been effectively mitigated. In order to ensure that post-construction environmental monitoring is thorough and effective and that reports are developed and submitted, the Board recommends a condition setting out the minimum requirements of NGTL's PCM program, and to make such filings mandatory. The Board reminds NGTL that any changes to the Project Footprint (e.g., routing in the Two Island Lake area, clearing associated with hydrostatic testing access or changes to watercourse crossing methods) should be included in an updated PCM program. See **Conditions 13 and 18** in Appendix III and **Conditions 15 and 21** in Appendix IV of the NEB Report for detailed wording.

Heritage Resources

The NEB examined NGTL's mitigation measures, and recommends that NGTL file with the Board copies of all archeological and heritage resource permits and clearances obtained from the appropriate provincial authorities, and a statement indicating how NGTL intends to implement any recommendations provided by the provincial departments. See **Condition 11** in Appendices III and IV of the NEB Report for detailed wording.

7.3.1 Analysis of Potential Adverse Environmental Effects to be Mitigated through Standard Mitigation Measures

The NEB is of the view that many of the potential adverse environmental effects of the Project identified in Subsection 7.2 can be resolved through the use of standard design or routine procedures, as outlined in NGTL's application and related filings. A standard mitigation measure is a specification or practice that has been developed by industry, or prescribed by a government authority, that has been previously employed successfully, and is now considered common or routine and meets the expectations of the NEB.

NGTL proposed a variety of standard mitigation measures to address the majority of the identified potential adverse environmental and socio-economic effects of the Project, as outlined in Table 5. These are presented in NGTL's ESA, EPP and subsequent submissions for the Project.

Table 5 Standard Mitigation Measures

Potential Adverse Environmental Effect	Details
Harmful alteration, disruption or destruction of fish habitat (including riparian areas)	Upon completion of the watercourse crossing NGTL would immediately stabilize all disturbed areas until permanent reclamation activities are complete. Permanent reclamation to re-establish riparian vegetation and fish habitat would be done as soon as conditions permit. Mitigation measures are included in the Project's EPP. If DFO deems that any crossing will result in harmful alteration or destruction of fish habitat, a habitat compensation plan will be developed and implemented. The evaluation of reclamation success (fish-bearing water bodies, their banks and riparian areas) would be included as part of NGTL's PCM program.

Potential Adverse Environmental Effect	Details
Reduced water quality and quantity	Project mitigation and monitoring commitments, including measures related to water quality and quantity, are captured in the Project's EPP and form part of the Project's mitigation plans. The primary water withdrawal associated with the Project is for water to be used for hydrostatic testing purposes.
Introduction and spread of invasive species (i.e. weeds)	NGTL has committed to standard mitigation measures within its EPP that include: ensuring construction equipment is clean and free of soil or vegetative debris when it arrives on site, flagging areas where noxious weeds have been identified, consider placement mats and other mitigation measures if warranted. NGTL has also submitted a Project-specific weed management plan which NGTL will revise as required.
Loss or alteration of native vegetation, including vegetation resources important to wildlife	In its ESA and responses to information requests, NGTL committed to using a MSD approach. NGTL described the MSD approach as involving normal clearing of the RoW, but not stripping of the full RoW width unless grading is required. Where stripping does not occur, the RoW is surface mulched to prepare it for construction. In winter conditions, the mulched surface is then frozen and provides a stable working surface. The MSD approach allows the original surface material containing vegetative propagules (seed, rhizomes, shallow roots of grasses) to be retained in place and as a result, promotes accelerated natural regeneration of vegetation following construction. This technique is appropriate for winter construction in forested areas.
Changes in wildlife habitat, mortality risk and movement patterns	<p>In its assessment, to represent all the wildlife species in the Project area, NGTL selected 10 indicator species including the seven SARA Schedule 1-listed species, grizzly bear, moose and American marten. The fitness of indicator species is considered applicable to other species with similar life history and habitat requirements.</p> <p>NGTL stated its mitigation measures include allowing vegetation to encroach on the RoW by minimizing management during operations, rollback slash to reduce human access, leave gaps in windrows at drainages and wildlife trails and abide by seasonal timing constraints and setback distances. With regard to federally-listed species at risk, see Subsection 7.3.2.2.</p> <p>With respect to migratory birds, NGTL has committed to conduct clearing outside the migratory bird RAPs or take other precautions/measures to avoid disturbing or destroying an active migratory bird nest.</p>
Accidents and Malfunctions	Within its EPP and Contingency Plans, NGTL has measures in place to address potential soil, groundwater, surface water and/or wetland contamination resulting from accidents and/or malfunctions.
Disturbance or destruction of previously unidentified heritage resources	NGTL will implement measures identified in its Heritage Resource Discovery Contingency Plan [EPP, Appendix E] in the event of a discovery of archaeological or historical sites during construction activities. NGTL's Heritage Resource Discovery Contingency Plan states it would suspend construction activities in the vicinity of any historical, archaeological or paleontological resources discovered during construction, notify applicable provincial authorities (i.e., ACCS or MFLNRO), and that work would resume only after permission has been granted by those authorities.
Traditional Land and Resource Use – Trails and Travelways	<p>NGTL's mitigation on Trails and Travelways include:</p> <ul style="list-style-type: none"> • Detailed recording and mapping within 100 m on both sides of the proposed pipeline RoW. In partnership with community representatives, a decision is then made about the relative importance of the trail and, if warranted, how best to maintain and control access; and • Other mitigation options include signage or scheduling construction during periods of least impact.

Potential Adverse Environmental Effect	Details
Traditional Land and Resource Use – Habitation Sites	NGTL’s mitigation on Habitation Sites include: <ul style="list-style-type: none"> • Detailed mapping, photographic recording and avoidance of the location by the proposed development; or • Should avoidance of a site not be feasible, mitigative measures consisting of detailed recording and controlled excavations may be implemented.
Traditional Land and Resource Use – Plant Harvesting	NGTL’s mitigation measures are dependent on the context and relative location of a harvesting area to the proposed development, but may include: <ul style="list-style-type: none"> • Limiting the use of chemical applications; • Replacement of plant species during reclamation; and • Avoidance of the site.
Traditional Land and Resource Use - Hunting	NGTL’s mitigation measures for hunting sites include: <ul style="list-style-type: none"> • Adhering to species-specific timing constraints; • Leaving breaks in the pipeline trench to allow animals to cross; and • Limiting the use of chemical applications.
Traditional Land and Resource Use - Fishing	NGTL’s mitigation measures for fishing areas include: <ul style="list-style-type: none"> • Recording and mapping of fishing locales; and • Strict adherence to the regulations, standards and guidelines set by provincial and federal regulatory agencies for watercourse crossings.
Traditional Land and Resource Use – Trapping	NGTL’s mitigation measures for trapping and snaring of animals for food and pelts include: <ul style="list-style-type: none"> • Avoid accidental damage where the proposed pipeline route transects a trap line, by maintaining access to the trap line; and • Moving of trap line equipment by the trapper prior to construction.
Traditional Land and Resource Use – Gathering Places	NGTL mitigation measures for gathering places for ceremonial activities, trade, marriages, indigenous grave sites and for other activities include: <ul style="list-style-type: none"> • Detailed recording, mapping and avoidance; and • The visual impact will be assessed in the field and mitigative measures will be refined and optimized, if warranted.
Traditional Land and Resource Use – Sacred Areas	NGTL mitigation measures for sacred areas including burials, vision quest locations, rock art panels, birth locations and ceremonial places, among others include: <ul style="list-style-type: none"> • Detailed recording, mapping and avoidance; and • Additional mitigative measures, if warranted, will be refined and optimized in the field and through community discussions.

7.3.2 Analysis of Potential Adverse Environmental Effects to be Mitigated through Non-Standard Design and Mitigation Measures

This subsection provides a detailed analysis of certain effects that involve the use of non-standard design or mitigation measures were the subject of public concern, or for which the Board has identified a relative importance. Each analysis in this subsection specifies mitigation measures, significance criteria ratings (defined in Appendix 2), monitoring commitments and the Board’s corresponding views, including any proposed issue-specific conditions.

7.3.2.1 Wetlands

Potential adverse environmental effect(s)	<ul style="list-style-type: none"> • Loss or alteration of wetland hydrologic, water quality and habitat functions • Change in wetland community diversity
Background/ Issues	<p>The Project would disturb approximately 221 ha of wetlands, including 180 ha of treed wetland and, as a result, has the potential to disrupt hydrologic and water quality function and result in the loss of wildlife habitat.</p> <p>EC noted the large number of wetlands crossed by the Project and that wetland conservation is important for maintaining migratory bird populations and protecting species at risk. EC recommended that NGTL complete a pre-construction assessment of wetland functions for impacted wetlands to establish baseline conditions for the Project. EC advised that where wetlands cannot be avoided, impacts should be monitored and compensation should be provided where it is demonstrated that there are ongoing effects.</p> <p>EC also recommended measures specific to wetland compensation including: a 2:1 ratio of area of wetland restored/created to original wetland area impacted; preference should be given to restoration of altered or drained, naturally occurring wetlands; preference for restored wetlands of the same type altered over enhanced or newly created wetlands; and lost wetland functions should be compensated on-site if site conditions are suitable with secondary preference for wetland compensation in the same watershed, followed by compensation in the same ecosystem from which wetlands were lost.</p>
Mitigation Measures	<p>NGTL committed to complying with the requirements of the <i>Federal Policy on Wetland Conservation</i> and provided the following wetland mitigation measures:</p> <ul style="list-style-type: none"> • seeding will not occur within wetlands and natural recovery will be the reclamation method used; • minimizing the removal of vegetation in wetlands and disturbance to adjacent uplands; • restricting grading adjacent to wetlands to the extent practical and directing grading away from wetlands; • ground level cutting/mowing /mulching of wetland vegetation would be conducted instead of grubbing; • packing snow, ice or matting on work side to drive in frost and protect the ground surface from construction equipment; • installing berms and/or cross ditches at the base of approach slopes to wetlands during construction; • installing silt fences at wetland boundaries followed by silt fence removal once revegetation of adjacent RoW is stable; • installing ditch plugs prior to backfilling at locations within wetland to prevent the flow of water along the RoW; and

	<ul style="list-style-type: none"> leaving breaks in trench crown at appropriate locations to facilitate natural cross-RoW surface flows in wetlands. 																				
Monitoring	NGTL committed to monitoring wetland recovery during the first, third and fifth growing season after construction during its PCM program. NGTL has indicated that at the end of five years of monitoring, if a wetland has still not reached full functionality, it would consult with EC regarding appropriate next steps, which may involve either additional remedial measures or compensation.																				
Views of the Board	<p>The Board notes that NGTL has committed to implementing mitigation measures to protect wetlands, to restore wetland function for those wetlands impacted by the Project, and to further mitigate or compensate for wetlands which have not regained function after five years of PCM. The Board acknowledges NGTL's submissions regarding wetland protection and mitigation. Given NGTL's commitment to compensate for wetlands that have not been fully restored, the Board recommends that, as part of any Certificate issued, NGTL complete and file an offsets measures plan for residual effects to wetlands developed in consultation with EC, provincial authorities or other wetland experts. See Condition 19 in Appendix III and Condition 22 in Appendix IV of the NEB Report for detailed wording.</p> <p>The Board acknowledges NGTL's commitment to monitor wetlands during the PCM program, but notes that the wetland PCM details are not included in the EPP. In order to ensure wetland protection and restoration measures are properly implemented in the field, the Board therefore expects NGTL to include this information in the PCM program as set out in Condition 13 in Appendix III and Condition 15 in Appendix IV of the NEB Report. The Board also expects specific reports on the restoration of wetland functionality as well as consultation with EC at one-, three- and five-year intervals as detailed in Condition 18 in Appendix III and Condition 21 in Appendix IV of the NEB Report.</p>																				
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7.3.2.2 Potential Effects on Wildlife Species of Concern

Potential adverse environmental effect(s)	<ul style="list-style-type: none"> Stress, injury, reproductive success, and increased mortality of wildlife species at risk, leading to population declines Loss or alteration of habitat for wildlife species at risk
Background/ Issues	<p>NGTL stated that its desktop assessment for wildlife and wildlife habitat assessment considered wildlife indicators based on national and provincial conservation status, socio-economic significance and habitat availability baseline data within the LSA and RSA. The wildlife indicators selected by NGTL for this Project included all seven species known to have potential habitat along the routes and listed on Schedule 1 of the SARA, and the COSEWIC-listed grizzly bear.</p> <p>EC recommended the following to NGTL: conduct field surveys for species at risk listed on Schedules 1, 2 and 3 of the SARA; provide an evaluation of the potential effects and proposed mitigation measures based on the results, and; and provide EC copies of the supplemental surveys for review and comment.</p> <p>Five of the SARA Schedule 1-listed species are birds whose habitats occur within the Project LSA and RSA. There are additional bird species potentially present that are either listed by COSEWIC or have been identified provincially as having special status. EC has recommended that proponents avoid engaging in potentially destructive or disruptive activities during the breeding season to reduce the risk of incidental take of nests or eggs.</p> <p>FNFN raised concerns with respect to the potential effects of the Komie North Section on wildlife</p>

	<p>corridors and wildlife habitat, waterfowl nesting sites, mineral licks, game trails and fish and game harvesting. FNFN has observed declines in regional wildlife populations and expressed concerns that the Project would further impact these and other wildlife populations.</p> <p>The Project has the potential to adversely affect grizzly bear habitat as it overlaps a Secondary Grizzly Bear Management Zone in AB and the Taiga Grizzly Bear Population Unit in BC.</p>																				
Mitigation Measures	<p>NGTL has committed to:</p> <ul style="list-style-type: none"> • following existing linear disturbances as much as practical and minimizing construction RoW width and TWS; • completing a pre-construction wildlife habitat surveys for likely to occur bird and amphibian species listed on Schedule 1 of SARA and short-eared owl; • adhering to timing restrictions including the minimum migratory bird RAP of May 1 to July 31; • implementing a pre-construction nest sweep prior if clearing is required between May 1 to July 31; and • conducting pre-construction bear den survey sweeps for both sections of the Project. 																				
Monitoring	<p>NGTL has committed to monitoring and evaluating the effectiveness of habitat restoration and offsets measures during its PCM program.</p>																				
Views of the Board	<p>The Board is of the view that there is a potential for the Project to disturb birds protected by the <i>Migratory Birds Convention Act</i> or by provincial legislation, and additional species identified as having special status, including grizzly bears.</p> <p>The Board acknowledges NGTL’s commitment to conduct nest sweeps prior to clearing if this activity occurs within the migratory bird restricted activity period. The Board recommends that the bird-related commitment be expanded to include nest sweeps for non-migratory birds under provincial jurisdiction and to include operations and maintenance activities such as mowing and RoW clearing. Details of the recommendation are included in Appendices III and IV of the NEB Report, Condition 9.</p> <p>The Board recognizes NGTL’s commitment to perform bear den survey sweeps if construction occurs during the seasonal denning period. The Board recommends that NGTL be required to conduct grizzly bear den sweeps and filing the results with the Board, as detailed in Condition 8 in Appendices III and IV of the NEB Report.</p> <p>The Board is of the view that wildlife and wildlife habitat issues, particularly for species at risk, should also be included within the PCM plan. The Board recommends that, in any Certificate that may be issued, NGTL be required to include details on how these issues will be monitored within its PCM plan and that the monitoring results be included in the PCM reports submitted to the Board. See Conditions 13 and 18 in Appendix III and Conditions 15 and 21 in Appendix IV of the NEB Report for detailed wording.</p>																				
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7.3.2.3 Specific Effects on Caribou

Potential adverse environmental effect(s)	<ul style="list-style-type: none"> • Stress, injury, reduced reproductive success, and increased mortality of caribou, leading to local population declines • Loss or alteration of critical habitat for caribou populations in the Maxhamish, Snake-Sahtahneh and Chinchaga caribou ranges
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Background/ Issues	<p>The <i>Recovery Strategy</i> identifies 65% undisturbed habitat, or a maximum of 35% disturbed habitat, in a range as the threshold for a local range population to be self-sustaining. Current habitat disturbance levels for the Maxhamish, Snake-Sahtahneh and Chinchaga ranges are 58%, 87% and 76%, respectively, well above the 35% disturbed threshold. Based on the levels of habitat disturbance within these ranges, the local populations are classified as not self-sustaining, meaning that restoration of disturbed habitat to a minimum of 65% will be necessary for the recovery of these populations.</p>
Views of NGTL	<p>NGTL states that its wildlife desktop habitat analysis provides a more accurate estimate of habitat available to caribou, rather than using “disturbed” and “undisturbed” categories as suggested in EC’s <i>Recovery Strategy</i>. NGTL acknowledges that indirect loss of caribou habitat may be an important factor to consider, but notes that the 500 m buffer recommended by EC contains discrepancies, conflicting disturbance definitions, is not consistently supported by scientific literature, has statistical errors and does not distinguish between disturbance types. Using EC’s methods recommended in the <i>Recovery Strategy</i>, NGTL reported the total area disturbed by the non-contiguous portions of the Project, including direct and indirect effects, within the Maxhamish, Snake-Sahtahneh, and Chinchaga ranges would be 1 332 ha. Using its methods, NGTL calculated the total amount of available caribou habitat, within the three ranges, would be reduced by a total area of 310.8 ha as a result of the Project.</p> <p>NGTL’s assessment of seismic lines in the Komie North new cut caribou LSA concluded that a majority of seismic lines have none or low access potential for human or predators, based on vegetation growth and evidence of use. NGTL therefore applied a correction factor which significantly reduced the contribution of seismic lines to the overall estimate of linear disturbance density in its analysis of caribou mortality risk. NGTL also submits that not all seismic lines contribute equally to facilitating human and predator access into caribou range.</p> <p>NGTL provided updated construction schedules for the Project, noting that all clearing activities would be completed outside of the caribou RAPs on both sections. Construction of some temporary facilities for the Chinchaga Section is planned to occur during the RAP, however since the areas will be outside of the AB-designated caribou zone, the RAP should not apply. For the Komie North Section, certain construction activities (including backfilling, tie-ins, hydrostatic testing and clean up) could potentially occur within the RAP due to the length of the pipeline and presence of muskeg on the majority of the RoW.</p>
Views of EC	<p>EC’s <i>Recovery Strategy</i> notes that the application of a 500 m buffer to mapped anthropogenic features best represents the combined effects of increased predation and avoidance on caribou population trends at the national scale. EC acknowledges NGTL’s reporting of direct and indirect effects of the Project on caribou range, but notes that the analysis of total disturbance should consider areas where the Project is located adjacent to existing anthropogenic footprints, where applying a 500 m buffer would further increase the disturbance level, including disturbance within existing pipelines RoW.</p> <p>EC notes that NGTL applied a correction factor to the classification of seismic lines in determining linear disturbance density calculations. EC requested that NGTL provide references to the scientific and technical literature that provide the basis for the methodology.</p> <p>EC acknowledges NGTL’s proposed caribou protection plan (CPP) mitigation measures and commitment to prompt reclamation. However, EC states that considering the non self-sustaining designation of the three affected herds, habitat management actions (or other actions), which do not have an immediate beneficial impact on areas proposed as critical habitat, cannot be considered as mitigation for destruction of critical habitat. Further, any project occurring in these ranges must demonstrate that in both the short- and long-term, it will not have an adverse effect on the recovery of that local population.</p> <p>In its response to NGTL’s supplemental caribou report, EC states the scientific basis provided to support NGTL’s conclusion that the Project would have no effect on the total amount of disturbance within the LSA and RSA, or areas where the LSA and RSA overlap with the caribou ranges, is difficult to evaluate and the conclusions are inconsistent with EC’s 2011 Scientific Assessment.</p>

	<p>EC recommends monitoring of Best Management Practices to determine their effectiveness in avoiding and mitigating adverse effects on caribou. EC further states that measures to address short-term impacts may include predator and/or alternate prey management, while long-term impacts may be addressed through habitat restoration and off-set measures within caribou habitat, such as rehabilitating linear disturbances (e.g. seismic lines) that are not within the Project area boundary. EC also notes that restored habitat can take decades to be fully functional for caribou, therefore the initiation of habitat restoration should be considered in the short-term.</p>
<p>Mitigation Measures</p>	<p>NGTL prepared a CPP which would be consistently applied throughout all Project phases to remove or lessen impacts to caribou within all federally and provincially designated caribou protection areas. The CPP sets out more detailed Project guidance on a number of generally standard mitigation measures related to: scheduling construction to avoid provincial caribou RAPs; following NGTL contingency plans, provincial guidelines and legal requirements; minimizing vegetation control on RoW; and access control. NGTL states that its CPP mitigation represents most, if not all of the measures prescribed in the <i>Recovery Strategy</i>.</p> <p>In addition to the CPP measures, NGTL agreed to NEB proposed conditions for:</p> <ul style="list-style-type: none"> • a Caribou Habitat Restoration Plan (CHRP) prior to construction; • an Offset Measures Plan; and • a Caribou Habitat Restoration and Offsets Measures Monitoring Plan. <p>NGTL also committed to implementing additional habitat restoration measures to support the <i>Recovery Strategy</i>, and to participating in future consultation processes associated with the development of regional caribou recovery plans by EC and provincial authorities.</p>
<p>Monitoring</p>	<p>NGTL commits to monitoring the effectiveness of caribou habitat restoration and offset measures during its PCM program.</p>
<p>Views of the Board</p>	<p>The evidence indicates that the Project will result in the loss and alteration of critical habitat for caribou. The Board is of the view that there would still be disturbance to caribou, and loss, degradation and fragmentation of habitat beginning with construction and continuing throughout the lifecycle of the Project, notwithstanding NGTL’s proposed mitigation measures within its EPP and CPP.</p> <p>In its recently released <i>Recovery Strategy</i>, EC formally identified critical habitat for the species which includes designated caribou range in the Project area. EC also classified the affected Project area herds as not self-sustaining. In light of these factors, the Project’s potential destruction of critical habitat, and the potential overlap of construction with the caribou RAP, the Board is of the view that in making its recommendation under section 52 of the NEB Act, thorough consideration needs to be taken over the extent of and details of mitigation.</p> <p>NGTL’s initial filing with the Board, the Project ESA, did not provide suitable justification for its methods used to assess the effects of the Project on caribou habitat and mortality risk for caribou. NGTL did provide the necessary information within its subsequent responses to information requests, supplemental caribou report results and hearing question responses. In the future, the Board expects NGTL’s initial project filings to include a more thorough description of its effects analysis procedures and sufficient justification for using methods which differ from current industry practice and regulatory recommendations.</p> <p>With respect to disturbance from construction, the Board is of the view that, within the designated caribou ranges, all construction activities should be completed outside of the provincial RAPs while ensuring that construction is completed as soon as possible. Therefore the Board recommends that NGTL be required to ensure those aims are reflected in its construction schedule. For detailed wording see Condition 4 in Appendices III and IV of the NEB Report.</p> <p>With regard to habitat, the Board is of the view that NGTL has a responsibility to not only reduce effects on caribou habitat, but to also restore affected habitat as expediently and to the greatest extent possible. The Board recognizes the importance of maintaining critical habitat, and supports the goals and principles as described in the <i>Recovery Strategy</i>. To ensure for effective restoration planning and effects measurement, the Board recommends that a ground-based, pre-construction</p>

	<p>assessment of caribou habitat that reflects the components of critical habitat described in the <i>Recovery Strategy</i>, be conducted for the Project components occurring within designated caribou ranges, as set out in Condition 7 in Appendices III and IV of the NEB Report.</p> <p>The Board is of the view that, in any Certificate that may be issued, a condition be included requiring NGTL to prepare a CHRP that: 1) encourages NGTL to restore as much caribou habitat as possible; and 2) provides a means for assessing the extent of lost habitat that will require compensatory efforts, as described in Condition 10 in Appendices III and IV of the NEB Report. In order to ensure sufficient clarity in identifying the extent of habitat that will need to be compensated with offset measures, the Board recommends that the preliminary CHRP identify clear quantitative targets or performance measures that can be relied upon to determine the likely success of restoration measures. Furthermore, to ensure there is adequate time prior to construction to make any improvements to preliminary CHRP, the Board recommends the preliminary version of the CHRP be submitted at least 180 days prior to construction.</p> <p>The Board is of the view that a condition should be included to require that NGTL develop a program to monitor the effectiveness of habitat restoration measures, as detailed in Condition 21 in Appendix III and Condition 24 in Appendix IV of the NEB Report, and to report on that monitoring, as detailed in Condition 22 in Appendix III and Condition 25 in Appendix IV of the NEB Report.</p> <p>The Board discusses further habitat mitigation with respect to cumulative effects on caribou in Subsection 7.4.1.</p>																				
Evaluation of Significance	<table border="1"> <thead> <tr> <th>Frequency</th> <th>Duration</th> <th>Reversibility</th> <th>Geographical Extent</th> <th>Magnitude</th> </tr> </thead> <tbody> <tr> <td>Continuous</td> <td>Long-term</td> <td>Possible</td> <td>RSA</td> <td>Moderate</td> </tr> <tr> <td colspan="5">Adverse Effect</td> </tr> <tr> <td colspan="5">Not likely to be significant</td> </tr> </tbody> </table>	Frequency	Duration	Reversibility	Geographical Extent	Magnitude	Continuous	Long-term	Possible	RSA	Moderate	Adverse Effect					Not likely to be significant				
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Continuous	Long-term	Possible	RSA	Moderate																	
Adverse Effect																					
Not likely to be significant																					

7.3.2.4 Aboriginal Traditional Land and Resource Use

Potential adverse environmental effect(s)	<ul style="list-style-type: none"> • Disruption of subsistence hunting, fishing, trapping, and harvesting • Alteration or loss of site-specific TLU identified in the Project area by Aboriginal groups • Depletion of resources within Aboriginal traditional territories due to an increase in access • For potential effects on Wildlife and Wildlife Habitat; Water Quantity and Quality and Fish and Fish Habitat see Subsection 7.2.
Background/ Issues	<p>A total of 13 Aboriginal groups were identified by NGTL, the Major Projects Management Office and the Board as being potentially affected by or having an interest in the Project. Aboriginal groups potentially affected by the Project choose the extent of their participation in the hearing process. Regardless of the level of participation, NGTL continues to engage and report on consultation activities with Aboriginal groups to the NEB.</p> <p>Aboriginal groups that have participated in the TEK program and or TLU studies for the Project, involve the following:</p> <ul style="list-style-type: none"> • ADKFN • FNFN • BFN • DTFN • DRFN • DFN • Horse Lake First Nation (HLFN) • Local 74 • Paddle Prairie Métis Settlement (PPMS)

FNFN, HLFN and DFN conducted a third party TLU study for the Project. NGTL indicated DRFN would conduct a pre-construction assessment of the Chinchaga Section. NGTL further noted that funding was provided to assist with community-directed TLU studies and for consultants to provide technical support and assistance.

Aboriginal groups identified potential TLU sites along the Footprint of the proposed pipeline route, including: trails and travelways, habitation sites, plant harvesting, hunting, fishing, trapping, gathering places and sacred areas.

Acho Dene Koe First Nation

The issues and concerns or impacts identified by ADKFN in the Traditional Knowledge Reports filed by NGTL or through NGTL's engagement process, includes:

- Economic opportunities related to the Project, monitoring, employment and contracting
- Strategy for beaver removal, a number of beaver houses in the area
- Navigability of watercourses crossed by Komie North Section
- Traditional activities on or surrounding watercourses during construction
- At spring break-up, rivers and lakes used by ADKFN for transportation routes for shipment of winter loads to traditional summer camps.
- The Liard River on both sides as far south as Fort Nelson, and north of Nahanni Butte are in use for traditional activities such as hunting, trading and gathering by ADKFN/Fort Liard Métis (FLM) members. Areas of interest also include Trout Lake and Beaver River.
- With regards to BC, 238 TUS sites are within the most northerly portion of the province (P15), rivers are essential travel corridors and resource procurement areas.
- During groundtruthing of ADKFN TUS, the remains of many buildings, root cellars, cache pits, gardens, and gravesites were observed.

ADKFN submitted a summary of the results of their TLU data collection. Within the study the Traditional Use sites were located and a description provided for the activities of the ADKFN/FLM peoples within ADKFN/FLM's traditional territory:

- ***Trails and Travelways (transportation)*** - In the Liard River area there are active game trails, particularly those used by caribou to remain open during construction to avoid disturbance of game patterns in the area. Member utilizes the Liard River as important transportation highway/travel route from Fort Liard to Fort Nelson. ADKFN indicated that the Liard River is critical for physical and cultural survival (Social and Cultural Wellbeing). Travel is done by canoe and other kinds of boats, and in winter on frozen winter road. There are many trails in the area north of the proposed Komie Fortune Creek Meter Station. Several trails in the Fort Nelson area connect important places within ADKFN/FLM territory (including Francois and Maxhamish).
- ***Habitation Sites*** near Komie North - Sites to be avoided by the proposed route realignment must consider that areas around lakes are often utilized as retirement areas for elderly community members. Several campsites and cabins are found on and around Coles Lake and are currently in use (TUS#12, 13, 14 and 15).
- ***Plant Harvesting (food/material harvesting)*** – The gathering of plants and berries for food and medicinal purposes takes place during growing season from spring to fall in the Liard River area. Some products from trees such as bark and wood are collected year-round. Coles Lake and surrounding area is known as an important hunting, trapping, fishing and berry picking area.
- ***Hunting*** – Hunting of moose, deer, elk, black bear and caribou and trapping of smaller animals takes place in the Liard River Area throughout the year. Hunting by boat for

moose and beaver is mentioned. Moose is the most important animal to the ADKFN for its multipurpose use, including food, fat, and hides for clothing and moccasins. Fat from bears is used for nutrient and energy, and flavor for dried meat and fish. Beaver trapping during the fall is an important activity; beaver is used for food, materials and income. Coles Lake and surrounding area is known as an important hunting, trapping, fishing and berry picking area. Moose, wolverines and spruce grouse are hunted in the Coles Lake area.

- **Fishing** – Fishing related activities take place in the Liard River Area, and other lakes and rivers throughout the year. Fish are important for subsistence and also for dogs especially during hunting and trapping. Species include whitefish, pickerel, jackfish, Billy nose, Dolly Varden (trout), and lingcod. During the month of August winter food supplies become the focus for ADKFN members. Coles Lake and surrounding area is known as an important hunting, trapping, fishing and berry picking area. Fish species in Coles lake area include jackfish, greylings, and suckers. Traditional Use Site #9 found on the NW point of Coles Lake. TUS #31 and #33 are fishing and hunting sites.
- **Trapping Areas** – Trapping areas are along the rivers. During the winter (December to February) the species trapped are marten, fox, lynx, squirrel, fisher, rabbits and beaver. These items are used as currency for trade through the Hudson Bay Company. Historically, there have been discrepancies over trapline boundaries and Game Wardens disapproval of ‘cross border trapping’ where extinguishing title by refusing to recognize title, or not adding ADKFN trappers names to existing trap lines. Coles Lake and surrounding area is known as an important hunting, trapping, fishing and berry picking area.
- **Gathering Areas (cultural landforms/traditional history)** - In November families travel to lakes to harvest and store fish in preparation for winter. Ancestors of the Acho Dene Koe are highly visible in the records of Forts Liard, Nelson and Halkett. Northwest of Fort Nelson is a traditional use site of great historical importance to ADKFN/FLM it was a Dene Tha’ First Nation Village and a Hudson Bay Company trading post.
- **Sacred Areas (ceremonial/religious)** - Sacred Areas such as burial sites at lakes throughout the ADKFN and FLM territory. Archeological evidence indicated dating of 5,000 to 8,000 years artifacts found at Pointed Mountain site located along the western side of a small valley just north of Fisherman Lake, NWT and other sites at Bovie Lake, Nelson Forks, and Trout Lake near Fort Liard, Several burial sites belonging to ADKFN/FLM are located in Fort Nelson.

Fort Nelson First Nation

Field survey participants were directed to collect TEK for their own reporting and not share TEK with NGTL for the purpose of the Project ESA.

FNFN would be collaborating with a third party consultant to conduct their community directed TLU study of the Komie North Section. FNFN chose a 5 km LSA to conduct their TUS.

The TLU summary submitted to the Board on 28 August 2012 contained the results of all the fieldwork completed in the LSA since 29 May FNFN evidence was filed.

FNFN evidence indicates that parts of the proposed pipeline would traverse areas containing important traditional use and ecological values. FNFN participated in a field investigation along the entire length of the proposed pipeline route. During the field study, an archeological finding was discovered near the Two Island Lake area.

FNFN indicated that higher density of current use is located in the southern two-thirds of the proposed pipeline route.

The cultural areas of interest to FNFN are listed as Two Island Lake, Tsea Lake and Komie Lake. The traditional use and resources in these areas include but are not limited to: wildlife habitat, burial sites, and habitation sites.

FNFN identified the following potential impacts of the Project:

- Road safety due to increased number of roads providing back country access
- Increased wildlife mortality due to high-speed traffic and poaching
- Increased access to TLU areas for poachers and non-First Nations hunters
- Safety measures to avoid and respond to contamination emergencies such as a leak and spill impacts on watersheds

FNFN submitted the results of their preliminary TLU data collection. The results are incorporated into NGTL's Supplementary Traditional Knowledge Report. Within NGTL's Report, FNFN identified a number of issues and concerns throughout NGTL's engagement process, and in its written evidence listed below by topic area:

- **Trails and Travelways** – Trails and travelways are located in the LSA and around the Snake River to Two Island Lake; with connections of a trail between the LSA and Sahtaneh River, which drains into the Fort Nelson River. These trails are important transportation and historic trails that connect territorial lands and people. A number of game trails are also located in the Tsea Lake area.
- **Habitation Sites** – Cabin sites are located near Two Island Lake, Skinny Lake, Cabin Lake, Courvoisier Creek, Deer River, Tsea Lake, and Komie Lake. Cabins used for trapping activities are located between Two Island Lake and Snake River. Traditional camps were identified in the Dilly Creek area, which is crossed by Komie North Section. A FNFN occupied cabin site is located at Brandt Creek. Komie Lake area contains a FNFN member's cabin and trapline.
- **Plant Harvesting** - Lands at Skinny Lake, Deer River, Two Island Lake, and Tsea Lake areas contain an abundance of high quality food and medicinal plants. Lichen is also in abundance which is preferred by caribou. The southern portion of the LSA from about Komie Creek south includes a large variety of berries harvested by FNFN members.
- **Hunting**- Hunting occurs at Skinny Lake, Deer River, Two Island Lake and Tsea Lake area. The Two Island Lake area is reported to support nesting sites for waterfowl; interconnectivity of muskeg and wetlands; biodiversity of species; geographic distribution of species; uninterrupted wildlife corridors. Environmental features such as mineral licks are located in Two Island Lake and Tsea Lake areas. A boreal caribou habitat for calving and rearing is located in several areas in the LSA. A calving area for moose is located in the Tsea Lake area.
- **Fishing** – Fishing occurs at the Tsea River, Skinny Lake, Deer River and Two Island Lake. The Two Island Lake area is also used as potable water for FNFN. Red suckerfish in Two Island Lake is used as food for dogs in winter.
- **Trapping Areas** – There are trap lines within the LSA around the Komie Lake, Two Island Lake, Skinny Lake, Cabin Lake, Courvoisier Creek and the Deer River. An FNFN member reported that harvesting activities have taken place in the Komie Lake area for over 45 years. Trapping occurs between Brandt and Komie Creeks approximately 1 km north of the proposed pipeline which has not been included in FNFN maps.
- **Gathering Areas** – Gathering areas are located around the Two Island Lake, approximately 2.3 km NE of KPK 43 and at Skinny Lake at approx 14.5 km SW of KPK 45.
- **Sacred Areas** - Sacred areas containing burial sites were among the cultural and spiritual values identified within the LSA. A site was reported west of Two Island Lake at approximately 2.3 km NE of KPK 43 of the Komie North Section. An archeological site containing chert flakes and chalcendony is located within 15 metres of eastern shore of Two Island Lake.

Beaver First Nation

The issues and concerns or impacts identified by BFN in the Traditional Knowledge Reports filed by NGTL or through NGTL's engagement process, includes:

- Disruption to use of trails and travelways
- Disturbance of fishing activities
- Navigability of watercourses crossed by the Chinchaga Section
- Traditional activities on or surrounding watercourses during or after construction

Dene Tha' First Nation

TLU study results were completed by DTFN for all development projects in the northeast BC and northwest Alberta. The reports were filed confidentially with NGTL.

The issues and concerns or impacts identified by DTFN through NGTL's engagement process, includes:

- Disruption to use of trails and travelways
- Habitation site near Komie North Section will be avoided by proposed route realignment
- Increased development activity results in increased access road and cut lines
- Continued access to clean water for wildlife and people is very important
- Changes in water quality on humans, wildlife and downstream users
- Possibility of pipeline rupture, spill and leak and inadequate clean-up
- Industry has not properly reclaimed sites
- Maintaining a traditional lifestyle
- Invasive plants being brought in on equipment and spreading
- Disturbance of fishing activities

In Traditional Knowledge Reports filed by NGTL, DTFN raised a number of issues and concerns, including:

- Navigability of watercourses crossed by the Project
- Traditional activities on or surrounding watercourses during or after construction
- Protection of muskeg, marsh and wetland areas
- Protection of river and major stream crossings
- Pipeline design, clearing, construction, and maintenance, including the removal of beavers using Dene Tha' hunter/trappers
- Width of the pipeline RoW, avoid creating new RoW
- Reduce lines-of-sight along existing RoW by planting trees/vegetation or by incorporating doglegs
- Eliminate spraying of chemicals during clearing and maintenance
- Pipeline clearing and use after decommissioning
- Protect traditional sites and high conservations/cultural value areas
- Protection of heritage sites
- Cumulative effects
- Removal of land indefinitely from traditional use

River First Nation

Field survey participants have been directed to collect TEK for their own reporting and not share TEK with NGTL for the purpose of the project ESA.

DRFN would be collaborating with a third party consultant to conduct their community directed TLU study of the Komie North Section.

The issues and concerns or impacts identified by DRFN in the Traditional Knowledge Reports filed by NGTL or through NGTL's engagement process, includes:

- Disruption to use of trails and travelways
- Disturbance of fishing activities
- Caribou habitat
- RoW clearing and corridor width
- Scope of work for TLU studies
- NW Expansion projects review

Duncan's First Nation

DFN targeted 11 locations along the Chinchaga Section to visit during ground reconnaissance; all identified TLU sites were recorded. DFN undertook mapping of their own TLU data. Non-confidential results are incorporated in NGTL's Supplemental Knowledge Report.

The issues and concerns or impacts identified by DFN in the Traditional Knowledge Reports filed by NGTL or through NGTL's engagement process, includes:

- Disruption to use of trails and travelways
- Disturbance of fishing activities
- Caribou observed and measures needed to control line of sight
- Navigability of watercourses crossed by the Project
- Traditional activities on or surrounding watercourses during or after construction

Horse Lake First Nation

HLFN would be collaborating with a third party consultant to conduct a helicopter reconnaissance of the Chinchaga Section.

The potential impacts identified by the HLFN on traditional land and resource use during construction and operation include:

- Disruption to use of trails and travelways
- Disturbance of fishing activities at the Hotchkiss River

Fort Vermillion Métis Local 74

Local 74 indicated TEK Program and TLU study participants are satisfied with review of supplemental TEK results for Chinchaga.

In Traditional Knowledge Reports filed by NGTL, Local 74 raised the following concerns:

- Disruption to use of trails and travelways
- Disturbance of fishing activities
- Navigability of watercourses crossed by the Project
- Traditional activities on or surrounding watercourses during or after construction

	<p>Paddle Prairie Métis Settlement</p> <p>The issues and concerns or impacts identified by PPMS in the Traditional Knowledge Reports filed by NGTL or through NGTL’s engagement process, includes:</p> <ul style="list-style-type: none"> • Disruption to use of trails and travelways • Disturbance of fishing activities • Navigability of watercourses crossed by the Project • Traditional activities on or surrounding watercourses during or after construction
<p>Mitigation Measures</p>	<p>NGTL’s ESA included a suite of standard mitigation measures for environmental matters and for traditional land and resource use, as summarized in Subsection 7.3.1, Table 5. NGTL has also committed to the following:</p> <ul style="list-style-type: none"> • the previously reported habitation site near the Komie North Section will be avoided by proposed route realignment; • supplemental Traditional Knowledge studies have not identified any traditional use sites or features requiring mitigation along the Komie North Section; • TEK was collected from Aboriginal participants during supplemental biophysical field programs in summer 2012 for the Komie North Section; • NGTL indicated it continues to engage with the above mentioned Aboriginal communities to obtain their views and concerns and to collect information for the Project, including amongst other things, information on watercourses used for navigation purposes and the construction of the proposed watercourse crossings; • the results of the final FNFN TUS was provided to the Board prior to the oral hearing; • NGTL will consider incorporating additional site specific TLU information resulting from on-going meetings with FNFN; • in the event that additional sites requiring mitigation are identified, the mitigation strategies outlined in the supplemental Report and in the TLU Sites Discovery Contingency Plan will be implemented; • NGTL has developed a standard mitigation for potential traditional land use sites discovered during construction. In the event that an additional TLU site is discovered, NGTL will implement its Traditional land Use Sites Discovery Contingency Plan and Heritage Resource Discovery Plan; • in September 2012, NGTL submitted a report containing an adapted table with potential effects, mitigative measures and residual effects of pipeline construction and operation on FNFN traditional use values; and • NGTL has committed to implement a Traffic Management Plan for vehicular access.
<p>Views of the Board</p>	<p>The Board recognizes the significance of traditional land, gathering places and sacred sites to Aboriginal people. The Board notes the historical, ceremonial, cultural and economic significance of traditional land and resource use sites to Aboriginal communities and recognizes that increased access to these sites may have an adverse effect. The Board therefore recommends that, in any Certificate that may be issued for the Komie North Section, NGTL be required to file an Access Management Plan for new disturbance areas along the RoW on the Komie North Section, as described in Condition 13 in Appendix IV of the NEB Report.</p> <p>The Board notes that additional information regarding mitigation measures related to routing and access for the Komie North Section in the Two Island Lake area may be forthcoming from the FNFN. The Board therefore recommends that NGTL be required to file a report regarding any outstanding concerns or mitigation measures identified in consultation with Aboriginal groups. The Board further recommends that NGTL be required to file Aboriginal Consultation Reports during construction and operation for the Project. For the details about these two recommendations see Condition 12 in Appendices III and IV of the NEB Report.</p> <p>The Board finds that, with the implementation of the mitigation proposed by NGTL and the Board’s conditions in Appendices III to VI of the NEB Report, the Project is not likely to have significant adverse effects.</p>

Evaluation of Significance	Frequency	Duration	Reversibility	Geographical Extent	Magnitude
	Accidental	Medium-term to long-term	Possible	LSA	Moderate to High
	Adverse Effect				
	Not likely to be significant				

7.4 Cumulative Effects Assessment

The assessment of cumulative effects entails considering the residual effects from the Project in combination with residual effects from other projects and activities that have been or will be carried out, within the broader geographic region, over a longer time frame and within the ecological context.

Past industrial activities contributing to cumulative effects within the region include forestry, mining and oil and gas exploration and development activities (e.g., seismic operations, pipelines and facility development). Recreational activities, such as hunting and fishing, and natural disturbances, such as wildfires, have also contributed to cumulative effects on some ecosystem components.

NGTL identified adverse residual effects from the Project on the following valued environmental components (VEC) and valued socio-economic components (VSC): vegetation and wetlands, wildlife and wildlife habitat, fish and fish habitat, social and cultural well-being, human occupancy and resource use, human health and traditional land and resource use. NGTL indicated that most of the effects on VSCs can be effectively managed through best management practices, standard operating practices and other codified practices.

The Board is of the view that several of these cumulative interactions and effects are limited to the duration of construction, are fairly localized and minor in nature, and will be mitigated by NGTL's measures.

However, the key long-term cumulative environmental impact is the ongoing loss, alteration, access to and fragmentation of the natural landscape in the region. With respect to the incremental loss of vegetation, wetlands, and wildlife habitat, there are existing and measurable reductions to these VECs in the Project RSA. While the changing land use has a number of incremental cascading effects, the Board notes that impacts on caribou and caribou habitat may be used as an overall indicator of the adverse changes on the landscape. Given the conservation status of caribou, the presence of critical habitat in the Project area, the species' sensitivity to disturbance and the magnified Project effects due to cumulative habitat disturbance, caribou is discussed separately in Subsection 7.4.1. In addition, the Board notes ADKFN's and FNFN's concerns about the impacts and the lasting harm to their culture, identity, and way of life caused by this changing landscape.

7.4.1 Cumulative Effects on Caribou and Caribou Habitat

The Board is concerned about the cumulative effects on caribou and caribou habitat in the Project area. Caribou is a SARA-listed species, and the proposed Project route traverses through three caribou ranges, the Maxhamish, the Snake-Sahtahneh, and the Chinchaga; the latter two ranges have been categorized by EC as populations in decline. The Board is concerned that the Project would contribute further to impacts on caribou habitat.

NGTL states that any future linear features, including roads, pipeline or powerline RoWs, or seismic lines, would add incrementally to the Application case, where the environmental impacts of existing developments are assessed cumulatively with the potential impacts of the proposed Project, and contribute to cumulative effects on mortality risk of wildlife. NGTL concludes that the effects on habitat availability and mortality risk were not significant; however adverse effects had the potential to contribute to regional cumulative effects for both habitat availability and mortality risk.

EC's *Recovery Strategy* notes "Boreal caribou exist in mature boreal forest ecosystems that evolved over centuries, and in turn take decades to recover from disturbance. Reversing ecological processes detrimental to boreal caribou (e.g. habitat degradation and loss, the increase in predator and alternate prey population), and instituting changes to management frameworks and ongoing land use arrangement, will often require timeframes in excess of 50 to 100 years." The Board notes that complete restoration of the Project RoW would only commence after the estimated 30 year plus life of the Project.

Even with the mitigation proposed in Subsection 7.3.2.3, there would remain residual effects from the Project that would contribute to cumulative effects on caribou and their habitat. These residual effects result not only from direct and indirect disturbance where the RoW passes through a new area, but also where the RoW would widen and increase the duration of disturbance from the existing RoW. With respect to the width of RoW that would be subject to brush and vegetation control, required for safe operation, inspection and pipeline maintenance, NGTL confirmed that a width of 11 m would be controlled on the Komie North Section RoW and that this would be considered a long-term residual effect. The Board notes that it has previously commented on the nature of cumulative effects on species at risk and the need to fully address residual effects. Given the already substantial ongoing cumulative effects on the landscape and caribou in the region due to both direct and indirect habitat disturbance, the Board is therefore of the view that all residual effects on caribou habitat should be considered and fully compensated for.

Given the declining state of the caribou populations in the Project area and the considerable length of time it can take to restore disturbed caribou habitat, the need to avoid further contributions to cumulative effects is also time sensitive. Therefore, in addition to the mitigation measures and conditions in Subsection 7.3.2.3, the Board recommends that any Certificate that may be issued include a condition requiring NGTL to offset all residual effects to caribou and caribou habitat, as set out in **Condition 20** in Appendix III and **Condition 23** in Appendix IV of the NEB Report. Further, separate conditions should be included to require NGTL to develop a program to monitor the effectiveness of those offset measures, as detailed in **Condition 21** in Appendix III and **Condition 24** in Appendix IV of the NEB Report, and to report on that

monitoring, as detailed in **Condition 22** in Appendix III and **Condition 25** in Appendix IV of the NEB Report.

Similarly, **Condition 13** in Appendix IV of the NEB Report requires an Access Management Plan for the Komie North Section that is intended to address effects on traditional land and resource use (see Section 7.3.2.4), and will complement the protection measures intended by the above conditions.

8.0 THE NEB'S CONCLUSION

As part of its public interest mandate under the NEB Act, the NEB is of the view that, if the Project is approved and, taking into account the implementation of NGTL's proposed environmental protection procedures and mitigation measures, compliance with the Board's regulatory requirements and the NEB's conditions included in Appendices III to VI of the NEB Report, the Project is not likely to cause significant adverse environmental effects.

9.0 NEB CONTACT

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APPENDIX 1: SCOPE OF THE EA

**NOVA Gas Transmission Ltd. (NGTL)
Proposed Northwest Mainline Komie North Extension (the Project)
Draft Scope of the Environmental Assessment (EA)
Pursuant to the *Canadian Environmental Assessment Act, 1992*
(CEA Act 1992)**

1.0 INTRODUCTION

NGTL is proposing to construct and operate the Project, which would require a Certificate of Public Convenience and Necessity pursuant to section 52 of the *National Energy Board Act* (NEB Act). The Project is also subject to a screening level EA under the CEA Act 1992.

On 8 April 2011, NGTL filed a Project Description with the National Energy Board (NEB) regarding the proposed Project. The intent of the Project Description was to initiate the EA process pursuant to the CEA Act 1992. On 30 September 2011, NGTL filed an Addendum to the Project Description which described a significant change to the scope of the Project.

On 21 April 2011, the NEB sent out a Federal Coordination Notification letter pursuant to section 5 of the CEA Act 1992 *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements* (Federal Coordination Regulations). In response, the following departments identified themselves either as a Responsible Authority (RA) likely to require an EA under the CEA Act 1992 or as a Federal Authority (FA) in possession of specialist or expert information or knowledge in respect of the Project EA:

- NEB - RA
- Transport Canada - RA
- Department of Fisheries and Oceans - RA
- Environment Canada - FA
- Health Canada - FA
- Natural Resources Canada - FA

The Provinces of Alberta (AB) and British Columbia (BC) were notified, although provincial EA legislation is not triggered.

This draft scope of the EA has been prepared by the NEB and will be finalized in accordance with the CEA Act 1992 and the Federal Coordination Regulations.

2.0 DRAFT SCOPE OF THE ASSESSMENT

2.1 Scope of the Project

The scope of the Project for the purposes of the EA includes the various components of the Project as described by NGTL in its application which was submitted to the NEB on 14 October 2011. The physical activities include construction, operation, maintenance and foreseeable changes, and reclamation, relating to the entire Project, including physical works described in greater detail in the Project application.

The proposed Project would be an expansion of portions of NGTL's existing Alberta System in northeastern BC and northwestern AB. The Project components include one new gas pipeline, meter station and related facilities to extend NGTL's Horn River Mainline (Komie North Section) and one gas pipeline loop and related facilities on sections of NGTL's Chinchaga Lateral Loop No. 3 (Chinchaga Section), for a total length of 130 km:

- the Komie North Section, consisting of approximately 97 km of 914 mm (36 inch) outside diameter pipe located approximately 110 km north of Fort Nelson, BC, would begin at the proposed Fortune Creek Meter Station and proceed in a southeasterly direction to a tie-in point on the Horn River Mainline (Cabin Section) near the Encana Cabin Gas Plant; and
- the Chinchaga Section, consisting of approximately 33 km of 1,219 mm (48 inch) outside diameter pipe located approximately 76 km northwest of Manning, AB, would parallel NGTL's existing Chinchaga Lateral Loop No. 3 from the existing Chinchaga Meter Station to a tie-in point at the existing Meikle River Compressor Station.

The proposed pipelines would be alongside and contiguous to existing rights-of-way and other linear disturbances for approximately 79 km (60%) of their entire length. The Project would cross several watercourses, drainages and water bodies, including wetlands. NGTL is proposing to commence clearing during winter 2012-2013, commence pipeline and facility construction during fall and winter 2013-2014, and have the Project in-service by the second quarter of 2014.

Any works and activities associated with additional modifications or associated with the decommissioning or abandonment phase of the Project would be subject to future examination under the NEB Act and consequently under the CEA Act 1992 as appropriate. Therefore, at this time, any works or activities associated with these phases of the Project will be examined in a broad context only.

2.2 Factors to be considered

The EA will include a consideration of the following factors listed in paragraphs 16(1)(a) to (d) of the CEA Act 1992:

- (a) the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;

- (b) the significance of the effects referred to in paragraph (a);
- (c) comments from the public that are received during the EA process; and
- (d) measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project.

For further clarity, subsection 2(1) of the CEA Act 1992 defines ‘environmental effect’ as:

- (a) any change that the project may cause in the environment, including any change that it may cause to a listed wildlife species, its critical habitat or the residence of individuals of that species as those terms as defined in subsection 2(1) of the *Species at Risk Act*,
- (b) any effect of any change referred to in paragraph (a) on
 - i. health and socio economic conditions,
 - ii. physical and cultural heritage,
 - iii. the current use of lands and resources for traditional purposes by aboriginal persons, or
 - iv. any structure, site or thing that is of historical, archaeological, paleontological, or architectural significance, or
- (c) any change to the project that may be caused by the environment, whether any such change or effect occurs within or outside Canada.

2.3 Scope of the Factors to be Considered

The EA will consider the potential effects of the proposed Project within spatial and temporal boundaries within which the Project may potentially interact with, and have an effect on components of the environment. These boundaries will vary with the issues and factors considered, and will include but not be limited to:

- construction, operation and site reclamation, as well as any other undertakings proposed by NGTL or that are likely to be carried out in relation to the physical works proposed by the NGTL, including mitigation and habitat replacement measures;
- seasonal or other natural variations of a population or ecological component;
- any sensitive life cycle phases of species (e.g., wildlife, vegetation) in relation to the timing of project activities;
- the time required for an effect to become evident;
- the area within which a population or ecological component functions; and
- the area affected by the Project.

As indicated above, the EA will consider cumulative effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out.

APPENDIX 2: DEFINITIONS OF CRITERIA USED IN EVALUATING SIGNIFICANCE

Criteria	Rating	Definition
All criteria	Uncertain	When no other criteria rating descriptor is applicable due to either lack of information or inability to predict
Frequency (how often would the event that caused the effect occur)	Accidental	Rare and unplanned occurrence over the Project lifecycle
	Single	One time event within any phase of the Project lifecycle
	Multiple	Multiple occurrences during any phase of the Project lifecycle
	Continuous	Continuous through any phase of the Project lifecycle
Duration (duration of the effect)	Short-term	Adverse environmental effect duration is limited to the proposed construction
	Medium-term	Adverse environmental effect duration is in the order of months to a few years
	Long-term	Adverse environmental effect would remain evident throughout the planned operation or beyond the lifecycle of the Project
Reversibility	Reversible	Adverse environmental effect expected to return to baseline conditions within the life of the Project
	Possible	Adverse environmental effect may or may not return to baseline conditions within the life of the Project
	Irreversible	Adverse environmental effect would be permanent
Geographic Extent	Footprint	Effect would be limited to the area physically disturbed by the Project development, including the width of the RoW and the TWS
	LSA	Effect would be limited to where direct interaction with the biophysical and human environment could occur as a result of construction or reclamation activities. This area varies relative to the receptor being considered.
	RSA	Effect would be recognized in the area beyond the LSA. This area also varies relative to the receptor being considered.
Magnitude	Low	Effect is negligible, if any; restricted to a few individuals/species or only slightly affects the resource or parties involved; and would impact quality of life for some, but individuals commonly adapt or become habituated, and the effect is widely accepted by society.
	Moderate	Effect would impact many individuals/species or noticeably affect the resource or parties involved; is detectable but below environmental, regulatory or social standards or tolerance; and would impact quality of life but the effect is normally accepted by society.
	High	Effect would affect numerous individuals or affect the resource or parties involved in a substantial manner; is beyond environmental, regulatory or social standards or tolerance; and would impact quality of life, result in lasting stress and is generally not accepted by society except under extenuating circumstance.
Evaluation of Significance	Likely to be significant	Effects that are of high frequency, irreversible, long-term duration, regional extent and of high magnitude.
	Not likely to be significant	Any adverse effect that does not meet the above criteria for “significant”

APPENDIX 3: COMMENTS RECEIVED BY THE NEB ON THE DRAFT EA REPORT

The NEB received comments on the draft EA Report from FNFN and NGTL. The Board notes that many of FNFN’s comments reiterated points FNFN previously made in the course of the hearing process and the comments were not all necessarily directly related to the EA per se. Below is a summary of the comments the Board received and finds relevant to the EA Report. As also noted in Table 6 below, comments on matters more appropriately addressed elsewhere in the main NEB Report (e.g., consultation matters) are only briefly mentioned here and are cross-referenced to the relevant chapter.

Table 6 Comments on the Draft EA Report

Stakeholder (Government Agency, Applicant or First Nation)	Summary of Comments	NGTL’s Response to comments filed with the NEB on the Draft EA Report	How and where a change was made, or an explanation of why a change was not made, to the EA Report
Fort Nelson First Nation <u>A3D9Y8</u>	FNFN stated that the draft EA Report is premature and has not appropriately assessed the project route for the Komie North Section of the Project.	NGTL stated that it has proposed a preferred route. Absent of any agreement to re-route portions of the Komie North Section of the Project, NGTL intends to proceed with the preferred route.	The Board’s EA Report assesses NGTL’s applied-for preferred route.
	FNFN stated that they had not been consulted regarding the project route, or route assessment and there had been no meaningful discussions of other route alternatives.	NGTL stated that the majority of concerns raised by FNFN relate to substantive matters that were subject of the Board’s review, or are not relevant to the purposes of the draft EA Report, such as the adequacy of consultation with FNFN on the Project’s route.	The NEB Report, Chapter 10, Lands, and Chapter 11, Aboriginal Matters, addresses NGTL’s preferred route, the routing criteria and consultation regarding routing. In the NEB Report, the Board recommends that any certificate issued with respect to the Komie North Section include Condition 14 (Appendix IV, NEB Report) regarding routing.
	FNFN states that NGTL’s preferred route was selected for Komie North Section before any preliminary TLU information was available.	NGTL stated that it relied on extensive TLU information for the purposes of its ESA and route selection process, including TLU information from FNFN for the Horn River, Ekwan and Northwest Mainline Expansion Projects.	The Board considers all evidence that is filed and placed on the public record. Routing is discussed in the NEB Report, Chapter 10, Lands, and Chapter 11, Aboriginal Matters.

Stakeholder (Government Agency, Applicant or First Nation)	Summary of Comments	NGTL's Response to comments filed with the NEB on the Draft EA Report	How and where a change was made, or an explanation of why a change was not made, to the EA Report
	FNFN states that NGTL's assessment of the two alternative routes for the Komie North Section was a cursory process undertaken very quickly on the basis of little information.	Comment by FNFN is not specifically addressed in NGTL's response.	Based on the NEB's Filing Manual, Subsection 7.1 of the EA Report has been updated to clarify that while the NEB expects a consideration of alternative routes, this is generally at a summary level as the alternatives are not the subject of the application. Other than the clarification, no changes have been made to the EA Report.
	FNFN disagrees with the Board's conclusion that the Project is not likely to cause significant adverse effects, including effects on FNFN traditional land use.	NGTL stated to the extent that FNFN disagrees with certain of the Board's findings in the draft EA Report, FNFN filed information requests, intervenor evidence, and participated extensively in the oral hearing. NGTL indicated that FNFN has had numerous opportunities to raise its concerns about NGTL's ESA with the Board, and FNFN has availed itself of those opportunities. NGTL stated that the evidence on the record demonstrates that the preferred route has been carefully selected and will not result in significant adverse environmental impacts.	As clarified in Sections 6.0 and 7.3.2, significance is evaluated based on residual effects remaining after implementation of mitigation and NEB recommendations. The Board has made a number of recommendations in the EA Report for conditions that taken together address effects on traditional land use. A discussion of Aboriginal interests and concerns are contained in the NEB Report, Chapter 11, Aboriginal Matters. Other than the clarification, no changes have been made to the EA Report.
	FNFN stated that the draft EA Report fails to incorporate FNFN traditional knowledge (TK) about the lands and the ecosystems in the Project area because it is based only on what are filed in the ESA by NGTL.	Comment by FNFN is not specifically addressed in NGTL's response.	The Board considers all evidence that is filed and placed on the public record. The Board notes, as mentioned in the EA Report that FNFN chose not to share TEK with NGTL for the purpose of the Project ESA.

Stakeholder (Government Agency, Applicant or First Nation)	Summary of Comments	NGTL's Response to comments filed with the NEB on the Draft EA Report	How and where a change was made, or an explanation of why a change was not made, to the EA Report
	FNFN identified in the Two Island Lake area a caribou calving ground and other important TK which they felt were not acknowledged in the draft EA Report.		<p>In the EA Report, the Board refers to the presence of caribou habitat for calving and rearing purposes within the Komie North Section LSA. The Board acknowledges FNFN's submission, noting that the Two Island Lake area occurs within the Snake-Sahtahneh range and will be a recipient of measures described in the Board's conditions. The Board further discusses habitat mitigation with respect to cumulative effects on caribou in Subsection 7.4.1.</p> <p>No changes have been made to the EA Report.</p>
	<p>FNFN indicated the draft EA Report has not considered how the cumulative impacts of the Project will impact FNFN traditional way of life.</p> <p>FNFN indicated the Two Island Lake area is already susceptible to the impacts of industrial development.</p>	Comment by FNFN is not specifically addressed in NGTL's response.	<p>In Subsection 7.4, Cumulative Effects Assessment, the industrial activities are noted which are contributing to cumulative effects within the region.</p> <p>The Board considered the cumulative effects of the Project on other effects that would interact with the effects of the proposed Project. In its assessment, the Board acknowledged FNFN's concerns about the impacts to their culture, identity and way of life.</p> <p>No changes made to the conclusions in the EA Report.</p>
	FNFN stated the draft EA Report has overlooked impacts such as land alienation.	Comment by FNFN is not specifically addressed in NGTL's response.	The Board's EA Report acknowledges under Subsection 7.3.2.4 the historical, ceremonial, cultural and economic significance of traditional land and resource use sites, and

Stakeholder (Government Agency, Applicant or First Nation)	Summary of Comments	NGTL's Response to comments filed with the NEB on the Draft EA Report	How and where a change was made, or an explanation of why a change was not made, to the EA Report
			<p>that increased access to those sites may have an adverse effect. The Board recommends an Access Management Plan for the Komie North Section, as detailed in Condition 13 (Appendix IV, NEB Report), as a response to these concerns.</p> <p>No changes have been made to the EA Report.</p>
<p>NGTL <u>A3E1Q3</u></p>	<p>NGTL suggested the removal of the Environmental Protection Plan (EPP): Temporary Infrastructure (Recommendation B, draft EA Report) for the Chinchaga Section as the work is minor and will be included in the EPP and Environmental Alignment Sheets: Pipeline Facilities (Recommendation C, draft EA Report) for the Chinchaga Section.</p>		<p>The Board has revised the conditions to specify the inclusion of temporary infrastructure for the Chinchaga Section EPP as detailed in Condition 6 within Appendix III of the NEB Report.</p>
	<p>NGTL suggested that previously filed information should sufficiently fulfill the requirements of elements a) and b) of the Pre-construction Caribou Habitat Assessment (Recommendation E, draft EA Report) and that these should not be required.</p>		<p>The Board is not persuaded that parts a) and b) should be removed from the condition. The Board understands NGTL has collected data that is helpful in identifying caribou habitat but, as stated throughout the review process, the Board is of the view that the collection of ground-based baseline conditions is necessary to ensure restoration can be properly completed.</p> <p>No changes have been made to the EA Report or conditions.</p>

Stakeholder (Government Agency, Applicant or First Nation)	Summary of Comments	NGTL's Response to comments filed with the NEB on the Draft EA Report	How and where a change was made, or an explanation of why a change was not made, to the EA Report
	<p>NGTL states that part c) of the Pre-construction Caribou Habitat Assessment (Recommendation E, draft EA Report) is not necessary as it is NGTL's understanding that the assessment will inform the CHRP and the CHRP should not be guided by the biophysical attribute 'types' as described in the Federal Recovery Strategy.</p>		<p>The Board supports the goals and principles of the <i>Recovery Strategy</i> and requires an assessment of caribou habitat along the Project RoW. The survey will be done using the biophysical attributes set out in the Recovery Strategy as a guide for categorizing the type of habitat and establishing ground based baseline conditions of the Project area.</p> <p>No changes have been made to the EA Report or conditions.</p>
	<p>NGTL suggests the timing of the Offsets Measure Plan for Residual Effects to Caribou Habitat (Recommendation J, draft EA Report) be changed to reflect the timing given in previous Board conditions and to align with requirements of the Caribou Habitat Restoration and Offset Measures Monitoring Program (Recommendation K, draft EA Report).</p>		<p>The Board is not persuaded that the timing should be changed. The requirement to file the final Offset Measure Plan after the second complete growing season was done specifically to allow NGTL two growing seasons to verify the success of the restoration measures and provide meaningful data to contribute to the development of the final Offsets Measure Plan. The information necessary for the Caribou Habitat Restoration and Offset Measures Monitoring Program should be available from the final CHRP and the preliminary Offset Measures Plan.</p> <p>No changes have been made to the EA Report or conditions.</p>
	<p>NGTL suggests the timing of the preliminary CHRP (Recommendation I, draft EA Report) be changed to reflect the</p>		<p>The Board is not persuaded that the timing should be changed to 90 days prior to construction. As noted in Subsection 7.3.2.3,</p>

Stakeholder (Government Agency, Applicant or First Nation)	Summary of Comments	NGTL's Response to comments filed with the NEB on the Draft EA Report	How and where a change was made, or an explanation of why a change was not made, to the EA Report
	<p>timing given in previous Board conditions. NGTL states that more time is required for consultation and that the restoration work for caribou is being done in conjunction with work occurring on other Board approved projects in the same area.</p>		<p>the Board requires the filing of the CHRP 180 days prior to construction in order to allow sufficient time for Board staff to review and engage in meaningful dialogue with NGTL on Project specific elements of the CHRP and well in advance of construction.</p> <p>No changes have been made to the EA Report or conditions.</p>
	<p>In items 1 to 12 and 14 to 16 of Appendix A, NGTL listed comments and edits, including clarifications on pipeline details and corrections to the texts.</p>		<p>NGTL comments and edits are primarily minor factual corrections and updates, and the EA Report has been revised as suggested by NGTL.</p>
	<p>In item 13 of Appendix A, NGTL is concerned with references to caribou critical habitat used in the draft EA Report. NGTL contends that critical habitat does not exist in the Project RSA since the Project occurs entirely on provincial Crown lands. However, NGTL acknowledges the broad definition for critical habitat used in the <i>Recovery Strategy</i>, which specifies that in ranges where 35% or greater of the range is disturbed, critical habitat includes non-Federal lands. Since critical habitat has a specific legal meaning under the SARA, NGTL submits that references to critical habitat in the draft EA Report should be replaced with either caribou habitat or undisturbed caribou habitat, depending on the context.</p>		<p>The NEB is not applying the prohibitions under the SARA. Under paragraph 52(2)(e) of the NEB Act the Board considers the environment as a public interest that may be affected by the issuance of a certificate or denial of the application.</p> <p>The SARA and the <i>Recovery Strategy</i> define critical habitat as the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species. The Board notes that in the <i>Recovery Strategy</i>, critical habitat identification describes the habitat that is necessary to maintain or recover self-sustaining local populations throughout their distribution.</p>

Stakeholder (Government Agency, Applicant or First Nation)	Summary of Comments	NGTL's Response to comments filed with the NEB on the Draft EA Report	How and where a change was made, or an explanation of why a change was not made, to the EA Report
			<p>The Board is of the view that it is appropriate for any certificate issued for the Project to contain conditions that minimize or eliminate impacts to caribou and their critical habitat.</p> <p>No changes have been made to the EA Report.</p>
	<p>In items 17 to 24 of Appendix A, NGTL asserts that there should be a change in the significance criteria contained in the detailed analysis of potential adverse environmental effects (Section 7.3.2).</p> <p>NGTL suggests changing the duration to short-term as effects will only occur during construction, however it has committed to wetland PCM for up to five years to confirm (item 17).</p> <p>NGTL believes that the evaluation for geographical extent of effects on wetlands and caribou should be reduced to footprint and LSA, respectively (items 18 and 23).</p> <p>NGTL expresses concern with the NEB's evaluation of the frequency of Project effects on wildlife species of concern and caribou. For wildlife, NGTL asserts that the effect on habitat loss and sensory disturbance would be a single event limited to the construction phase. With respect to caribou, NGTL believes that for habitat and mortality risk, the frequency of Project</p>		<p>With respect to item 17, the Board notes that wetland restoration is generally regarded to be a long-term process therefore its evaluation of moderate duration remains in EA Report.</p> <p>In response to items 18 and 23, the Board does not agree with NGTL's rationale for reducing the geographical extent evaluation in the case of both wetlands and caribou. For wetlands, the Board notes that potential effects on hydrologic and water quality functions would extend to portions of the impacted wetland outside of the Project Footprint and within the LSA. With respect to effects on caribou, evidence shows that linear disturbances can result in habitat fragmentation that may affect how caribou use habitat or may result in a negative impact on the overall condition of a local population. Given the wide-ranging movement patterns of caribou populations, the potential negative impacts would extend to at least the Project RSA.</p>

Stakeholder (Government Agency, Applicant or First Nation)	Summary of Comments	NGTL's Response to comments filed with the NEB on the Draft EA Report	How and where a change was made, or an explanation of why a change was not made, to the EA Report
	<p>effects is single and continuous, respectively (items 20 and 22).</p> <p>NGTL submits that the significance criteria for magnitude of effects on wetlands, wildlife species of concern and caribou should be considered low rather than moderate (items 19, 21 and 24).</p>		<p>In regards to items 20 and 22, the Board's evaluation of frequency considered the interaction of monthly aerial inspections for the duration of the Project's operational phase with effects to wildlife species of concern, therefore the rating of multiple will remain. The Board does not accept NGTL's rationale for a single interaction with caribou habitat, noting that an 11 m wide cleared area will remain on the RoW for the duration of the Project, which the Board interprets as a continuous effect. The Board accepts NGTL's rationale for elevating the evaluation for mortality risk to continuous and has revised the EA Report accordingly. In response to item 19, the Board accepts NGTL's assertion with respect to the magnitude of effects on wetlands. Given NGTL's proposed mitigation measures, PCM program and commitment to compensate for wetlands not fully restored, the Board is of the view that the evaluation for wetlands be amended to low.</p> <p>Concerning items 21 and 24, the Board maintains its evaluation of effects magnitude on wildlife species of concern and caribou as moderate, noting that the north half of the Komie North Section will traverse 40 km of previously undisturbed habitat, the effect of which will have a measurable impact on wildlife currently using the area.</p> <p>Some changes, as noted above, have been made to the EA Report.</p>