

Supply Base Report

Pinnacle Renewable Energy Inc. -
Burns Lake Division

www.sustainablebiomasspartnership.org



Version 1.2 June 2016

NOTE:

This template, v1.2, is effective as of the date of publication, that is, 23 June 2016. Template v1.1 may still be used for those audits undertaken prior to 23 June 2016 and where the certificate is issued to Certificate Holders before 1 October 2016.

For further information on the SBP Framework and to view the full set of documentation see www.sustainablebiomasspartnership.org

Document history

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Contents

1	Overview	1
2	Description of the Supply Base	2
2.1	General description	2
2.2	Actions taken to promote certification amongst feedstock supplier	2
2.3	Final harvest sampling programme.....	5
2.4	Flow diagram of feedstock inputs showing feedstock type [optional]	5
2.5	Quantification of the Supply Base	5
3	Requirement for a Supply Base Evaluation	5
4	Supply Base Evaluation	6
4.1	Scope	6
4.2	Justification.....	6
4.3	Results of Risk Assessment.....	6
4.4	Results of Supplier Verification Programme	6
4.5	Conclusion.....	6
5	Supply Base Evaluation Process	7
6	Stakeholder Consultation.....	8
6.1	Response to stakeholder comments.....	8
7	Overview of Initial Assessment of Risk.....	9
8	Supplier Verification Programme	10
8.1	Description of the Supplier Verification Programme	10
8.2	Site visits	10
8.3	Conclusions from the Supplier Verification Programme	10
9	Mitigation Measures.....	11
9.1	Mitigation measures	11
9.2	Monitoring and outcomes.....	11
10	Detailed Findings for Indicators	12
11	Review of Report.....	13
11.1	Peer review	13
11.2	Public or additional reviews.....	13
12	Approval of Report.....	6

13	Updates	18
13.1	Significant changes in the Supply Base	18
13.2	Effectiveness of previous mitigation measures	18
13.3	New risk ratings and mitigation measures	18
13.4	Actual figures for feedstock over the previous 12 months	18
13.5	Projected figures for feedstock over the next 12 months	19

1 Overview

Producer name: Pinnacle Renewable Energy Inc. – Burns Lake division
Producer location: 22975 Hwy 16, East Burns Lake, British Columbia V0J 1E3, Canada
Geographic position: 125°27'12.94"W 54° 9'19.26"N
Primary contact: Joseph Aquino
 8545 Willow Cale Road
 Prince George, BC V2N 6Z9
 (250) 562-5562 ext. 2220

Company website: www.pinnaclepellet.com
Date report finalised: October 25, 2018
Close of last CB audit: October 12, 2018
Name of CB: SCS Global Services
Translations from English: No
SBP Standard(s) used: Standard 1 ver. 1.0, Standard 2 ver. 1.0 Standard 4 ver. 1.0, Standard 5 ver. 1.0
Weblink to Standard(s) used: <https://sbp-cert.org/documents/standards-documents/standards>
SBP Endorsed Regional Risk Assessment: Not Applicable
Weblink to SBE on Company website: <http://pinnaclepellet.com/sustainability/compliance-reports/>

Indicate how the current evaluation fits within the cycle of Supply Base Evaluations				
Main (Initial) Evaluation	Scope Change Audit	Second Surveillance	Third Surveillance	Fourth Surveillance
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 Description of the Supply Base

2.1 General description

BC's land base is 95 million hectares of which 62% or (55 million hectares) is forested, where only 24% is available for harvest. Approximately 83% of BC's forests are coniferous leading, 6% are mixed forests containing both coniferous and deciduous species and 6% are deciduous leading. Six million hectares (approximately 15%) of BC's forests are in protected areas and 13% of all forests in protected areas are 141-250 years old. BC is Canada's most ecologically diverse province containing coastal and inland temperate rainforests, dry pine forests, sub-alpine forests, and other forested ecosystems.ⁱ

95% of BC's forests are a government/publically owned resource. As such BC is a global leader in terms of forest legislation and certification. Approximately 52 million hectares of forest in BC is covered by third-party certification (e.g. SFI, FSC, CSA) or meets specific criteria required for environmental management systems (e.g. ISO 14001)ⁱⁱ.

Forest tenure provides the authorization for companies to harvest timber from crown land. There are various forms of tenure; the two main categories of tenures are area based and volume based. Main tenure types are Replaceable Forest Licenses, Non-Replaceable Forest Licenses, Tree Farm Licenses and Woodlot Licenses. Tenures are associated with license numbers that identify the type of tenure and to whom it is issued. Under the license, the proponent can apply for cutting authority to harvest a specified area on crown land. Registered professionals who practice forestry in the Province prepare the cutting authority and submit the application to Provincial government for review. The government may approve or reject the permit application based on any number of determining factors. The cutting authority will be valid for a specified term where harvesting and silviculture are required to be completed. All cutting authorities issued in the Province are associated to a unique timbermark that tracks the timber to its origin.

Management of harvesting volume is governed under the Forest Act. Allowable annual cuts (AAC) are calculated in all districts across the Province using growth and yield data within the timber harvesting land base. An AAC is allocated to tenure holders operating in the district. The total harvested volume from each tenure holder represents the district AAC.

Management of harvesting practices is governed under the Forest and Range Practices Act (FRPA). Landscape level and site level forest management objectives are described in FRPA legislation. Proponent cutting authority applications are measured against FRPA objectives. The Provincial government has a compliance and enforcement division that inspects forest practices to ensure proponents are meeting the intent of FRPA.

Private land represents a small portion of British Columbia's overall landbase. Private land is considered outside the timber harvesting and managed forest landbase, and therefore is not reflected when determining district or Provincial level AAC's. Some parcels of private land contain treed areas that when harvested are sold to various wood product manufacturing facilities. Of the 2% of land in British Columbia that is private land, 51% is managed forest land, 22% is forested farmland and 27% is forested residentialⁱⁱⁱ. The timber and the harvesting practices on private land are governed by various pieces of

Provincial and Federal legislation that ensure ownership and legality of timber is legitimate and impacts to natural systems are minimized. Less than 1% of the total fibre procured by PREI is from private land.

Roundwood Calculation

The annual allowable cut for British Columbia is approximately 65 million cubic meters per year ^{iv}. The proportion of the AAC consumed in round wood form at PREI plant is accounted for as follows:

PREI consumes some round wood at Burns Lake Division (PBL) and Meadowbank Division (PPM). The volume of round wood is determined by the volume of long rotation broadleaf harvest. In BC, licensees harvesting commercial conifer trees will be required to harvest a small proportion of deciduous trees where these trees will impact harvest operations. These are called incidental harvest. Pinnacle will purchase the incidental deciduous trees as there are no other markets for deciduous volume close to where these mills operate. The percentage of volume is less than 50% of the overall AAC.

Burns Lake: Total Broadleaf Long rotation logs = 3,297 ODT x 2.3 = 7,583.215 M3

7,583.215m3/total provincial AAC 65 million m3 = 0.012% of AAC

Meadowbank: Broad leaf long rotation logs = 6,164 ODT x 2.3 = 14,177.2 m3

14,177.2m3/total provincial AAC 65 million m3 = 0.022% of AAC

Supply Base Regions

The province is divided into forest Regions and Districts managed by government offices that authorize access to timber resources. The Forest Regions and Districts where PREI sources fibre include^v:

1. Cariboo Region (Williams Lake)	2. Kootenay/Boundary Region (Cranbrook)
<ul style="list-style-type: none"> a. 100 Mile House District b. Cariboo-Chilcotin District c. Quesnel District 	<ul style="list-style-type: none"> a. Rocky Mountain District b. Selkirk District
3. Northeast Region (Fort St. John)	4. Skeena Region (Smithers)
<ul style="list-style-type: none"> a. Peace District 	<ul style="list-style-type: none"> a. Kalum District b. Nadina District c. Skeena Stikine District
5. Thompson/Okanagan Region(Kamloops)	6. Omineca Region (Prince George)
<ul style="list-style-type: none"> a. Thompson Rivers District b. Okanagan Shuswap District c. Cascades District 	<ul style="list-style-type: none"> a. Fort St. James District b. Mackenzie District c. Prince George District d. Vanderhoof District

Fibre Supply

Approximately 89% of the fibre procured by PREI is secondary fibre. Secondary fibre is residual material or bi-products from the lumber, plywood and remanufacturing industry in the form of bark, sawdust, shavings and hog. EC and UK feedstock types correspond to PREI feedstock types as follows:

In total, approximately 1,392,000 oven dry tonnes (odt's) of fibre are converted to biomass fuel in the form of wood pellets. Approximately 84% of the fibre procured by PREI is forest management certified where approximately 75% is accompanied by chain of custody claim certificates. The 75% fibre supply accompanied with a PEFC CoC claim certificate represents the tonnage of SBP compliant material produced PREI. The remaining 25% is considered SBP controlled as determined by the PEFC DDS regional risk assessment. All fibre supplied to Armstrong Division originates from within the supply base area.

PREI controls fibre deliveries to seven biomass production facilities strategically located in areas where residual fibre markets exist. The seven biomass production facilities include:

- Houston Pellet Limited Partnership (**HPLP**)
- Pinnacle Pellet Burns Lake (**PBL**)
- Pinnacle Pellet Meadowbank (**PPM**)
- Pinnacle Pellet Williams Lake (**PWL**)
- Pinnacle Pellet Armstrong (**PPA**)
- Lavington Pellet Limited Partnership (**LPLP**)
- Pinnacle Pellet Entwistle (**PPE**)

Input Groups

EC Feedstock Types	Corresponding Pinnacle Feedstock Types	Feedstock Type
Forest Residues	Bush Grind - with Timber mark	Primary
	Chips – with Timber mark	Primary
Stemwood	Logs - All	Primary
	Pulp Logs	Primary
Wood Industry Residues	Sawdust	Secondary
	Shavings - All	Secondary
	Hog/Hog Mix	Secondary
	Composer	Secondary
	Trim Blocks	Secondary
	Chips – All	Secondary
UK Feedstock Types	Corresponding Pinnacle Feedstock Types	Feedstock Type
Forestry Residues	Bush Grind - with Timber mark	Primary
	Chips – with Timber mark	Primary
Tree Tops	Pulp Logs	Primary
Long Rotation Forestry (Broadleaf and	Logs - Deciduous	Primary
Bark	Hog/Hog Mix	Secondary
Sawmill Residues	Chips - All	Secondary
	Sawdust	Secondary
	Shavings - All	Secondary
	Composer	Secondary
	Trim Blocks	Secondary
	Yard Grind	Secondary
Dryer Fuel	Pellet Fines, pellets	Secondary, Primary

2.2 Actions taken to promote certification amongst feedstock supplier

Customer demand for certified wood products drives extensive forest certification in BC. PREI requires that claim certificates for PEFC certified fibre are issued from PEFC certified suppliers. PREI requires all non-certified suppliers and certified suppliers providing non-certified fibre, sign a supplier declaration verifying their compliance with the various legality, forest management and environmental requirements set out by the certification scheme. Pinnacle promotes certification schemes with suppliers as it is a core value of Pinnacles business. Pinnacle provides suppliers with the tools necessary to achieve certification compliance through shared knowledge.

2.3 Final harvest sampling programme

100% of the forest stands are harvested as final fellings. Only the waste material (all material that does not meet sawlog specifications) is used for biomass production. Data is compiled from annual summary of monthly fibre reports. Fibre inputs other than mill residuals are included as final fellings.

2.4 Flow diagram of feedstock inputs showing feedstock type [optional]

2.5 Quantification of the Supply Base

Provide metrics for the Supply Base including the following. Where estimates are provided these shall be justified.

Supply Base

- a. Total Supply Base area (ha): **≈19,000,000ha**
- b. Tenure by type (ha): **95% Crown Land**
- c. Forest by type (ha): **Coastal 4,750,000ha, Interior 11,400,000ha, Boreal 950,000ha**
- d. Forest by management type (ha): **100% Natural managed forest**
- e. Certified forest by scheme (ha): **Approximately 95%**

Feedstock

- f. **Total PBL volume of Feedstock: 392,323.95 odt**

- g. **Total volume of primary feedstock: 118,161.73 odt**

- h. List percentage of primary feedstock (g), by the following categories. Subdivide by SBP-approved Forest Management Schemes.

PBL:

- Primary feedstock certified to an SBP-approved Forest Management Schemes – **85%**
 - Primary feedstock not certified to an SBP-approved Forest Management Schemes – **15%**
- i. List all species in primary feedstock, including scientific name
- **Lodgepole pine – *Pinus contorta***
 - **Hybrid white spruce – *Picea glauca x engelmannii***
 - **Engelmann Spruce – *Picea engelmannii***
 - **Douglas fir – *Pseudotsuga mensezii***
 - **Black spruce – *Picea mariana***
 - **Western hemlock – *Tsuga heterophylla***
 - **Sub-alpine fir (Balsam) – *Abies lasiocarpa***
 - **Western Red Cedar – *Thuja plicata***
 - **Western Larch – *Larix occidentalis***
 - **Paper Birch – *Betula papyrifera***
 - **Trembling aspen – *Populus tremuloides***
 - **Black cottonwood – *Populus balsamifera***
- j. Volume of primary feedstock from primary forest – **0 odt**
- k. List percentage of primary feedstock from primary forest (i), by the following categories. Subdivide by SBP-approved Forest Management Schemes
- Primary feedstock from primary forest certified to an SBP-approved Forest Management Schemes – **0%**
 - Primary feedstock from primary forest not certified to an SBP-approved Forest Management Schemes – **0%**
- l. **Total volume of secondary feedstock: 274,162.21 odt**
- m. **Origin: BC**
- n. **Type: Sawmill residuals, sawdust, bark, shavings, hog**
- o. **Total Volume of tertiary feedstock: 0 odt**
- p. **Origin:**

3 Requirement for a Supply Base Evaluation

SBE completed	SBE not completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>

The SBE covers a relatively large supply base area in order to capture the extensive list of suppliers within the supply base under one risk assessment. The supply base area falls within the Province of British Columbia, where all suppliers follow the same legislative requirements. PREI does not receive 100% chain of custody claims on all fibre, thus the SBE was the most effective method to provide the highest percentage of SBP compliant claims on finished pellets.

4 Supply Base Evaluation

4.1 Scope

The scope of the supply base includes all primary and secondary feedstock where origin can be traced back to the harvest location.

Remanufacturing facilities and primary fibre from private land were excluded from the scope of the SBE as there was insufficient evidence to prove compliance with some SBE indicators.

The SBE was carried out for the entire province of British Columbia, excluding Vancouver Islands, to account for variation in year-to-year harvesting locations and prospective future harvesting areas.

4.2 Justification

The size of the supply base area (SBA) ensures coverage of all current and potential harvesting areas in the Province. Due to the relatively large SBA and overlap of supply areas between PREI's biomass production facilities, the SBE was chosen to incorporate all supply areas into one SBE. The legislative requirements for fibre procurement and harvesting are consistent throughout the SBE area.

4.3 Results of Risk Assessment

The risk assessment resulted in low risk for all indicators

4.4 Results of Supplier Verification Programme

Not Applicable as all indicators were deemed to be low risk.

4.5 Conclusion

PREI meets low risk designations for all indicators of the SBE. The high percentage of forest management certified forest in BC ensures all feedstock was managed under a forest management regime with multiple layers in place to ensure compliance. Provincial legislation, certification requirements, enforcement and continual improvement measures ensure forests in BC are managed to some of the highest standards globally.

The crown land system in BC ensure consistent land management strategies are carried out across the province. All licensees operating in BC are subject to the same compliance standards, which at their foundation are above and beyond the SBE requirements. The SBE details the findings, evidence reviewed and means of verification applicable to each SBE indicator and how low risk can objectively be determined.

PREI has a risk assessment process and has determined the risk of non compliance for SBE indicators, excluding fibre from remanufacturing facilities and private land, to be low risk of non-compliance.

5 Supply Base Evaluation Process

The SBE was compiled in combination with Pinnacle Renewable Energy Inc. and a team of external certification consultants. The team consisted of subject matter experts that provided thorough analysis on the applicable findings and evidence to base the risk designations. The subject matter experts have extensive certification and risk analysis experience throughout the province of BC. Upon completion, the SBE was reviewed by internal staff to ensure the indicators aligned with company procedures.

6 Stakeholder Consultation

The SBE was provided to various stakeholders across the Province to engage in stakeholder consultation of PREI's supply base area. PREI provided the SBE to various stakeholders representing national level, provincial level, regional level and local level interests. The goal of the stakeholder group was to ensure wide representation of members covering applicable expertise for all SBE indicators. The stakeholder representation included all levels of government, non-government organizations, organizations representing conservation efforts, forest industry at all levels, public representation indigenous peoples and other representation from other certification schemes. The stakeholders were supportive of the risk designations, only positive comments were received from stakeholders.

6.1 Response to stakeholder comments

There were two responses received during the SBE review and comment period. Both responses were positive and displayed support for the risk designations. The two stakeholders offered to provide further information in regards to provincial and regional level strategies implemented to support further sustainable forest management practices. PREI representatives met with stakeholders to discuss. The outcome of those meetings were positive and no further information was required to be added to SBE findings.

7 Overview of Initial Assessment of Risk

Table 1. Overview of results from the risk assessment of all Indicators (prior to SVP)

Indicator	Initial Risk Rating		
	Specified	Low	Unspecified
1.1.1		✓	
1.1.2		✓	
1.1.3		✓	
1.2.1		✓	
1.3.1		✓	
1.4.1		✓	
1.5.1		✓	
1.6.1		✓	
2.1.1		✓	
2.1.2		✓	
2.1.3		✓	
2.2.1		✓	
2.2.2		✓	
2.2.3		✓	
2.2.4		✓	
2.2.5		✓	
2.2.6		✓	
2.2.7		✓	
2.2.8		✓	
2.2.9		✓	

Indicator	Initial Risk Rating		
	Specified	Low	Unspecified
2.3.1		✓	
2.3.2		✓	
2.3.3		✓	
2.4.1		✓	
2.4.2		✓	
2.4.3		✓	
2.5.1		✓	
2.5.2		✓	
2.6.1		✓	
2.7.1		✓	
2.7.2		✓	
2.7.3		✓	
2.7.4		✓	
2.7.5		✓	
2.8.1		✓	
2.9.1		✓	
2.9.2		✓	
2.10.1		✓	

8 Supplier Verification Programme

8.1 Description of the Supplier Verification Programme

Not Applicable - No indicators are considered to be specified or unspecified risk and therefore a supplier verification program is not required.

8.2 Site visits

Not Applicable

8.3 Conclusions from the Supplier Verification Programme

Not Applicable

9 Mitigation Measures

9.1 Mitigation measures

Not Applicable - No indicators are considered to be specified or unspecified risk and therefore a mitigation measures were not required

9.2 Monitoring and outcomes

Not Applicable

10 Detailed Findings for Indicators

Detailed findings for each indicator are given in the SBE Annex 1

11 Review of Report

11.1 Peer review

The Supply Base Report (SBR) was peer reviewed by an external subject matter experts who have extensive knowledge of certification requirements throughout the province of BC. The subject matter experts provide expertise in the resource sector across Canada. The group consists of Registered Professional Foresters in the Province of BC and has extensive knowledge on forest legislation. Upon completion of the peer review, qualified PREI staff reviewed the SBR.

11.2 Public or additional reviews

Not Applicable

12 Approval of Report

Approval of Supply Base Report by senior management			
Report Prepared by:	<i>Joseph Aquino</i>	<i>Head of Sustainability</i>	<i>October 25, 2018</i>
	Name	Title	Date
The undersigned persons confirm that I/we are members of the organisation’s senior management and do hereby affirm that the contents of this evaluation report were duly acknowledged by senior management as being accurate prior to approval and finalisation of the report.			
Report approved by:	<i>Bernard Tobin</i>	<i>General Manager of Fibre</i>	<i>October 25, 2018</i>
	Name	Title	Date
Report approved by:	<i>Vaughan Basset</i>	<i>Senior Vice President of Sales and Logistics</i>	<i>October 25, 2018</i>
	Name	Title	Date

13 Updates

Updated figures reflect actual feedstock deliveries for 2017 and forecasted feedstock deliveries for 2018.

13.1 Significant changes in the Supply Base

N/A

13.2 Effectiveness of previous mitigation measures

N/A

13.3 New risk ratings and mitigation measures

N/A

13.4 Actual figures for feedstock over the previous 12 months

Feedstock

- a. **Total PBL volume of Feedstock:** 392,323.95 odt
- b. **Total volume of primary feedstock:** 118,161.73 odt
- c. List percentage of primary feedstock (g), by the following categories. Subdivide by SBP-approved Forest Management Schemes.
- d. **PBL:**
 - a. Primary feedstock certified to an SBP-approved Forest Management Schemes – **93%**
 - b. Primary feedstock not certified to an SBP-approved Forest Management Schemes – **7%**
- e. List all species in primary feedstock, including scientific name
 - **Lodgepole pine – *Pinus contorta***
 - **Hybrid white spruce – *Picea glauca x engelmannii***
 - **Engelmann Spruce – *Picea engelmannii***
 - **Douglas fir – *Pseudotsuga mensezii***
 - **Black spruce – *Picea mariana***
 - **Western hemlock – *Tsuga heterophylla***
 - **Sub-alpine fir (Balsam) – *Abies lasiocarpa***
 - **Western Red Cedar – *Thuja plicata***
 - **Western Larch – *Larix occidentalis***
 - **Paper Birch – *Betula papyrifera***

- Trembling aspen – *Populus tremuloides*
 - Black cottonwood – *Populus balsamifera*
- f. Volume of primary feedstock from primary forest – **0 odt**
- g. List percentage of primary feedstock from primary forest (i), by the following categories. Subdivide by SBP-approved Forest Management Schemes
- a. Primary feedstock from primary forest certified to an SBP-approved Forest Management Schemes – **0%**
 - b. Primary feedstock from primary forest not certified to an SBP-approved Forest Management Schemes – **0%**
- h. **Total volume of secondary feedstock:** **274,162.21 odt**
- i. **Origin:** BC
- j. **Type:** Sawmill residuals, sawdust, bark, shavings, hog
- k. **Total Volume of tertiary feedstock:** **0 odt**
- l. **Origin:**

13.5 Projected figures for feedstock over the next 12 months

Feedstock

- a. **Total PBL volume of Feedstock:** **350,000 – 425,000 odt**
- A range of raw material values provided to account for supplier production variations throughout the year.
- b. **Total volume of primary feedstock:** **75,000 – 125,000 odt**
- c. List percentage of primary feedstock (g), by the following categories. Subdivide by SBP-approved Forest Management Schemes.
- d. **PBL:**
- Primary feedstock certified to an SBP-approved Forest Management Schemes – **90%**
 - Primary feedstock not certified to an SBP-approved Forest Management Schemes – **10%**
- e. List all species in primary feedstock, including scientific name
- Lodgepole pine – *Pinus contorta*
 - Hybrid white spruce – *Picea glauca x engelmannii*
 - Engelmann Spruce – *Picea engelmannii*
 - Douglas fir – *Pseudotsuga mensezii*
 - Black spruce – *Picea mariana*
 - Western hemlock – *Tsuga heterophylla*
 - Sub-alpine fir (Balsam) – *Abies lasiocarpa*
 - Western Red Cedar – *Thuja plicata*
 - Western Larch – *Larix occidentalis*
 - Paper Birch – *Betula papyrifera*

- **Trembling aspen – *Populus tremuloides***
 - **Black cottonwood – *Populus balsamifera***
- f. Volume of primary feedstock from primary forest – **0 odt**
- g. List percentage of primary feedstock from primary forest (i), by the following categories. Subdivide by SBP-approved Forest Management Schemes
- Primary feedstock from primary forest certified to an SBP-approved Forest Management Schemes – **0%**
 - Primary feedstock from primary forest not certified to an SBP-approved Forest Management Schemes – **0%**
- h. **Total volume of secondary feedstock: 275,000 – 300,000 odt**
- i. **Origin: BC**
- j. **Type: Sawmill residuals, sawdust, bark, shavings, hog**
- k. **Total Volume of tertiary feedstock: 0 odt**
- l. **Origin:**

ⁱ Council of Forest Industries. 2016. Accessed from: <http://www.cofi.org/industry-info/forest-facts/>

ⁱⁱ Certification Canada. 2014. British Columbia - SFM - Year-end 2014.

ⁱⁱⁱ Private Forest Landowners Association. 2017. Accessed from: <http://www.pfla.bc.ca/managed-forest-land/>

^{iv} State of Canada's Forests. Annual Report. 2017. Accessed From: <http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/38871.pdf>

^v Ministry of Forest Lands and Natural Resource Operation. 2016. Accessed from: <http://www.for.gov.bc.ca/>