

FORESTRY AUDIT: BC TIMBER SALES & TIMBER SALE LICENCE HOLDERS

Okanagan-Columbia Business Area
Columbia Field Unit

JUNE 2022
FPB/ARC/250



**Forest
Practices
Board**

BC'S INDEPENDENT
WATCHDOG FOR
SOUND FOREST &
RANGE PRACTICES

Table of Contents

Board Commentary.....i

Audit Results 1

 Introduction 1

 Background..... 1

 Audit Approach and Scope 3

 Planning and Practices Examined 3

 Findings 4

Audit Opinion7

Appendix 1: Forest Practices Board’s Compliance Audit Process8

Board Commentary

As part of its annual audit program, the Forest Practices Board conducted a full scope compliance audit of BC Timber Sales' (BCTS) Columbia Field Unit portion of the Okanagan-Columbia Business Area. The audit results are described in detail later in this report. This commentary provides the Board's views on an important issue identified in the audit regarding following the recommendations of professionals.

The *Forest and Range Practices Act* is a results-based management regime that requires professional assessments in certain situations to ensure that environmental risks are appropriately managed during forestry operations. In this case, BCTS properly obtained the services of professionals to design forest roads through challenging terrain and make recommendations to reduce the risk of landslides. However, during construction, BCTS did not follow some of the professionals' recommendations, resulting in increased risk to forest resource values. This led to BCTS obtaining additional professional guidance to address the risk.

The situation could have been avoided by following the initial recommendations of the professionals. BCTS, and all licensees, need to have systems in place to ensure professional recommendations are understood and followed by all their employees and contractors.

The audit also found that BCTS did not have wet weather shutdown procedures during the construction of the roads. While not a requirement, wet weather shutdown procedures are a best practice to minimize the risk that heavy precipitation can create during road construction. To its credit, BCTS implemented new wet weather shutdown procedures, independent of the Board audit.

Audit Results

Introduction

The Forest Practices Board is the public's watchdog for sound forest and range practices in British Columbia. One of the Board's roles is to audit the practices of the forest industry to ensure compliance with the *Forest and Range Practices Act* (FRPA) and the *Wildfire Act*.

As part of the 2021 Forest Practices Board audit program, the Board randomly selected the BC Timber Sales' (BCTS) Columbia Field Unit portion of the Okanagan-Columbia Business Area for audit.

This report explains what the Board audited and the results. Detailed information about the Board's compliance audit process is provided in Appendix 1.



BCTS's operating area typically has steep and rugged mountainous terrain.

Background

Most of BCTS's operating areas subject to this audit are located in the Golden, Revelstoke and Cascadia timber supply areas (TSA), which are within the Selkirk Natural Resource District (NRD), with minor operations in the Okanagan TSA in the Okanagan Shuswap NRD.

This audit took place within the traditional territories of the Neskonlith Indian Band, Ktunaxa Nation Council Society, Shuswap Indian Band, Shuswap Indian Band, Adams Lake Indian Band, Little Shuswap Lake Band, Simpcw First Nation, Okanagan Indian Band, Splatshin First Nation, Penticton Indian Band, Lower Similkameen Indian Band, and Upper Nicola Band. The Forest Practices Board recognizes their deep connection with the land that continues to this day.

BCTS's operations extend from the Kicking Horse River (about 50 kilometres south of Golden) to the north end of Kinbasket Lake (about 130 kilometres north of Golden), and along the Columbia River from the Pingston River (about 65 kilometres south of Revelstoke) to Mica Creek (about 120 kilometres north of Revelstoke). A small portion of BCTS's operations are along the Seymour River at the north end of Shuswap Lake.

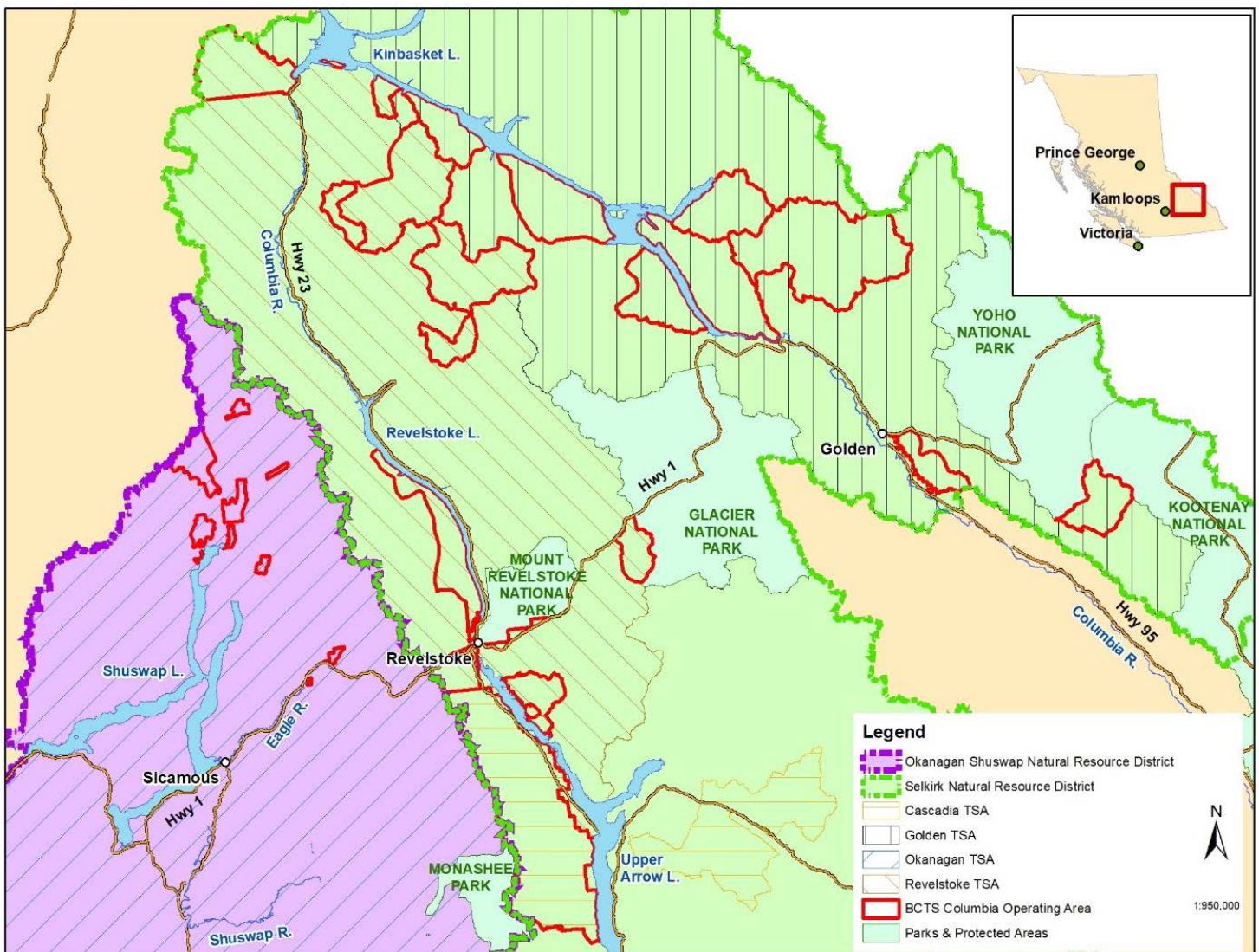
The main communities within the operating area are Revelstoke and Golden in the Selkirk NRD and Sicamous in the Okanagan-Shuswap NRD.

Rugged mountains along Arrow, Revelstoke, and Kinbasket lakes characterize the topography. The forests in the lower elevations contain a mixture of hemlock and western red cedar, with lesser amounts of Douglas-fir, western larch, white and lodgepole pine. Spruce and balsam are found at higher elevations. The operating areas contain complex ecological conditions that support a rich and diverse array of wildlife.

BCTS's Columbia field team is based in Revelstoke, where staff prepare operational plans, auction timber sales, and issue timber sale licences (TSL) and road permits. BCTS awards the successful bidder at each auction a TSL authorizing the holder to harvest the auctioned timber. The TSL holder, in turn, is responsible for fulfilling timber harvesting and road work associated with the licence, permit and operational plan obligations.

During the two-year audit period, BCTS tenure holders harvested about 500 000 cubic metres of timber from the Columbia field unit.

Map of the Audit Area



Audit Approach and Scope

This was a full scope compliance audit with a two-year timeframe. All activities that BCTS and TSL holders carried out between June 1, 2019, and June 25, 2021, were subject to audit. The activities included harvesting, construction, maintenance and deactivation of roads and major structures,ⁱ silviculture, wildfire protection, and associated planning.

BCTS is responsible for operational planning, including preparing forest stewardship plans (FSP)ⁱⁱ and site plans, silviculture activities, major structure maintenance, construction and deactivation, and most road construction, maintenance and deactivation outside of cutblocks.

TSL holders are responsible for timber harvesting, fire protection, and most road construction, maintenance and deactivation within cutblocks.

Auditors assessed these activities for compliance with FRPA, the *Wildfire Act*, applicable regulations and legal orders. Auditor's work included interviewing BCTS staff, reviewing the FSP and site plans, assessing silviculture records and conducting site visits with BCTS staff to review field practices. Sites were accessed by truck and by helicopter. Two forest professionals, one professional engineer, and a chartered professional accountant made up the audit team. The audit team was in the field from June 21 to 25, 2021.

The standards and procedures used to carry out this audit are set out in the Board's *Compliance Audit Reference Manual, Version 7.1, July 2016*.

Planning and Practices Examined

BCTS Responsibilities

Operational Planning

BCTS planned its activities under an approved FSP that expires on September 1, 2023. Auditors examined the FSP to determine if the results and strategies committed to are consistent with FRPA, the *Wildfire Act*, and the applicable legal orders. The legal orders are the *Kootenay Boundary Higher Level Plan Order*, the *Revelstoke Higher Level Plan Order*, and the *Order Establishing Objectives* in the area covered by the Okanagan-Shuswap Land and Resource Management Plan.

Auditors examined the FSP and stand-level site plans to ensure they met legal requirements. Auditors also considered site plans during harvesting, road and silviculture field sampling to ensure that they accurately identified site conditions.

Road and Major Structure Construction, Maintenance and Deactivation

BCTS constructed, maintained and deactivated roads, and constructed and maintained bridges and major structures during the audit period. No bridges were removed during the audit period. The population and sample examined for roads and structures are shown in *Table 1* below. The major structure maintenance population included 53 bridges and 20 major culverts. Auditors sampled 22 bridges and 5 major culverts for a total of 27.

TABLE 1. Population and Sample for Road and Structures

ACTIVITY	POPULATION	SAMPLE
	(Kilometres)	(Kilometres)
Road Construction (FSR)	7.0	6.0
Road Maintenance (FSR)	884.9	381.0
Road Deactivation (FSR)	43.4	237.
	(Structures)	(Structures)
Bridge Construction	1	1
Bridge & Major Culvert Deactivation	73	27

Silviculture Obligations and Activities

BCTS conducted site preparation, planting and brushing activities, and had regeneration and free-growing obligations during the audit period, shown in Table 2.

TABLE 2. Population and Sample for Silviculture Activities and Obligations

OBLIGATIONS AND ACTIVITIES	POPULATION	SAMPLE
	(Cutblocks)	(Cutblocks)
Site Preparation	25	8
Planting	70	18
Brushing	27	10
Regeneration Obligations (due or declared)	93	23
Free-growing Obligations (due or declared)	69	35

Timber Sale Licensee Responsibilities

Timber Harvesting

During the audit period, 20 TSL holders harvested 89 cutblocks covering 1860 hectares and auditors examined harvesting by 15 of the TSL holders on 34 cutblocks, totaling 995 hectares.

Road and Major Structure Construction, Maintenance and Deactivation

During the audit period, TSL holders constructed, maintained and deactivated roads, but did not construct, maintain or deactivate any bridges.

TABLE 3. Population and Sample for Road and Major Structure Activities

ACTIVITY	POPULATION	SAMPLE
	(Kilometres)	(Kilometres)
Road Construction	40.1	17.8
Road Maintenance	21.0	9.3
Road Deactivation	6.5	2.9

Wildfire Protection

Auditors examined fire hazard assessment and abatement practices and wildfire preparedness as part of the harvest sampling.

TABLE 4. Population and Sample of Wildfire Protection Activities

ACTIVITY	POPULATION	SAMPLE
	(Cutblocks)	(Cutblocks)
Fire Preparedness of Active Work Sites	3	2
Fire Hazard Assessment	56	19
Fire Hazard Abatement	25	14

Findings

The audit found BCTS's and TSL holders' planning and practices complied with FRPA and the *Wildfire Act* as of June 2021. However, the audit identified an unsound forest practice related to BCTS road construction.

BCTS Responsibilities

Road and Major Structure Construction, Maintenance and Deactivation

Road Construction

Road construction techniques varied from conventional balanced bench to full benching with end haul. Overall, BCTS maintained natural drainage patterns and ensured that the active roads were structurally sound and safe for industrial use.

However, auditors identified construction concerns on two road sections: one on a road section completed in the spring of 2020 and one on a road still under construction. In both instances, wet weather shutdown procedures were not in place.

On the completed road section, BCTS conducted a terrain stability assessment and prepared a detailed road construction design. However, the road construction did not follow the road design and the road construction contractor did not notify BCTS of changes in ground condition as recommended in the terrain stability assessment. Auditors did not observe any material adverse impact related to this finding and concerns identified on the completed road section have been addressed. However, not following the road design created an unnecessary risk to forest resource values and is considered an unsound practice.

On the road still under construction, BCTS had also conducted a terrain stability assessment and prepared a detailed road construction design. However, BCTS encountered challenges in following the road design due to unexpected subsurface conditions and wet operating conditions. Once BCTS identified the issues, it acted appropriately by halting construction and contracting a professional geoscientist and other specialists to assess the road sections and make recommendations to address the identified deficiencies. Auditors did not observe any material adverse impact related to this finding.

Subsequent to the audit, BCTS staff stated they are continuing to monitor and assess the road that is still under construction using qualified professionals to determine when construction can be completed with appropriate amendments incorporated. In addition, BCTS finalized wet weather shutdown procedures on May 14, 2021, prior to the audit notification.

Road Maintenance

BCTS adequately maintained the roads to retain the structural integrity of the road prism. All of the culverts examined were functional and BCTS managed water to maintain natural drainage patterns. Auditors reviewed roads primarily from the air. Auditors did not observe any road failures on these roads. Roads were safe for industrial use, culverts and ditch lines were functional and natural drainage patterns were maintained.

Road Deactivation

Deactivated roads were marked with signs and adequately barricaded. BCTS removed culverts and maintained natural drainage.

Bridge Construction

Auditors did not identify any administrative or operational issues with the one new bridge constructed. All documentation was complete (i.e., general arrangement designs, structural drawings, fabrication drawings, record drawings and construction assurance statements), accurate and compliant with legislation. The bridge reviewed in the field was well constructed and safe for industrial use.

Bridge and Major Culvert Maintenance

BCTS works in conjunction with the Ministry of Forests' Regional Engineering Group to complete major structure maintenance and inspections on forest service roads. BCTS adequately maintained bridges and culverts and posted load ratings for bridges. All major culverts assessed were functional.

The operating area is very challenging with steep, difficult terrain requiring specialized construction techniques, intensive water management and continual maintenance to ensure that resource roads and bridges are safe for use.

Operational Planning

The FSP incorporates the objectives established in legal orders that apply to forest practices in the audit area. BCTS maintained accurate documentation of planning and operational activities. The files were available and complete. Site plans were consistent with the FSP and addressed site-specific resources by accurately identifying and prescribing practices for resource features such as wildlife tree retention, riparian, wildlife and soils.

BCTS completed assessments at the landscape and operational (cutblock) levels where required. BCTS did not harvest or construct roads within wildlife habitat areas and met the established old growth management objectives.

Auditors noted no issues with operational planning.

Silviculture Activities and Obligations

Site preparation focused on controlling herbaceous vegetation, which is a significant limiting factor in seedling establishment. BCTS planted cutblocks with suitable tree species and stock, and seedlings were planted within approved seed transfer limits. BCTS practice is to plant as close to completion of harvest as possible and use high planting densities to minimize the risk associated with the high vegetative competition. Cutblocks contained the range of healthy, well-spaced, acceptable trees necessary to meet free-growing requirements within the required periods.

BCTS declares that regeneration obligations are met at the time of planting. However, it also conducts walkthrough surveys post planting to determine brushing requirements, and conducts a survival survey near the regen delay due date.

BCTS follows up the planting with an aggressive brushing program to allow seedlings to outgrow the herbaceous vegetation in two to three years to help the plantations meet free-growing obligations within the required time.

BCTS surveys cutblocks prior to declaring free-growing obligations are met. Herbaceous vegetative competition is the main concern with achieving free growing. Surveys completed by BCTS and field observations of free-growing stands by auditors confirmed that free-growing obligations were met. Plantations looked healthy and vigorous.

Activities were reported, milestones declared and forest cover updated within the required time frames.

Silviculture planning and practices were well done and auditors had no concerns.

Timber Sale Licensee Responsibilities

Harvesting

TSL holders conducted harvesting in accordance with the requirements of legislation and site plans. TSL holders used ground-based and cable harvest systems. They maintained natural drainage patterns and achieved wildlife tree retention objectives. TSL holders managed riparian areas along streams and non-classified drainages within cutblocks, respecting machine-free zones and retaining vegetation adjacent to streams. Soil disturbance was below the limit prescribed in the site plans and section 35(3) of the *Forest Planning and Practices Regulation*.

Auditors found no issues with harvesting.

Road and Major Structure Construction, Maintenance and Deactivation

TSL holders are responsible for in-block roads and road sections connecting to forest service roads.

Road Construction

Road construction was well done. Construction techniques varied from conventional balanced bench to full benching with end haul. Auditors had no concerns with the roads TSL holders constructed.

Road Maintenance

TSL holders adequately maintained roads to ensure the structural integrity of the road prism. The roads assessed were safe for industrial use, culverts and ditch lines were functional, and natural drainage patterns were maintained.

Road Deactivation

TSL holders appropriately deactivated in-block roads by removing culverts and maintaining natural drainage.

Bridge Construction and Deactivation

TSL holders did not construct or deactivate any bridges or install any major culverts.

Auditors found no issues with TSL holders' road construction, maintenance or deactivation. All works complied with legislation and all required documentation was complete and accurate.

Wildfire Protection

Auditors evaluated all cutblocks in the harvest audit sample for compliance with the *Wildfire Act* including fire hazard assessment, fire hazard abatement and fire preparedness.

TSL holders completed fire hazard assessments for all 19 cutblocks where an assessment was required.

TSL holders piled slash concurrent with, and following, harvesting activities. Fire hazard was abated by burning the slash piles on all 14 of the blocks where abatement was required. Slash piles were also burned on an additional four cutblocks where abatement was not yet required.

Adequate hand tools and water delivery system were present on the two active sites visited. There were no requirements for fire watch, restricted work hours or shutdown at the time of the field inspection.

Audit Opinion

In my opinion, the operational planning, timber harvesting, road construction, maintenance and deactivation, silviculture, and fire protection activities carried out by BC Timber Sales and its TSL holders in the Columbia Field Unit portion of the Okanagan-Columbia Business Area, between June 1, 2019, and June 25, 2021, complied in all significant respects with the requirements of the *Forest and Range Practices Act*, the *Wildfire Act* and related regulations, as of June 2021.

In reference to compliance, the term "in all significant respects" recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

Without qualifying my opinion, I draw attention to the *BCTS Road Construction* section of the report that describes an unsound forest practice.

The *Audit Approach and Scope and the Planning and Practices Examined* sections of this report describe the basis of the audit work performed in reaching the above conclusion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board, including adherence to the auditor independence standards and the ethical requirements, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with FRPA and the *Wildfire Act*.



Christopher R. Mosher CPA, CA, EP(CEA)
Auditor of Record

Victoria, British Columbia
March 9, 2022

Appendix 1:

Forest Practices Board's Compliance Audit Process

Background

The Forest Practices Board conducts audits of government and agreement-holders under section 122 of the *Forest and Range Practices Act* (FRPA) and section 68 of the *Wildfire Act*. Compliance audits examine forest or range planning and practices to determine whether or not they comply with the applicable requirements of FRPA and the *Wildfire Act*. The Board conducts 6-8 compliance audits annually. Most of these are audits of agreement holders. The Board also audits the government's BC Timber Sales Program (BCTS).

Selection of Auditees

To begin with, auditors randomly select an area of the Province, such as a natural resource district. Then the auditors review the forest resources, geographic features, operating conditions and other factors in the area selected. These are considered in conjunction with the Board's strategic priorities, and the type of audit is determined. At this stage, auditors choose the auditee(s) that best suit(s) the selected risk and priorities.

For example, in 2016, the Board randomly selected the Dawson Creek portion of the Peace Natural Resource District as a location for an audit. After assessing the activities within the area, auditors noted that there were two community forest agreements that had not yet been audited by the Board. As the Board strives to audit an array of licence types and sizes each year, these two community forest agreements were selected for audit.

For BCTS audits, a district or timber supply area within 1 of the 12 BCTS business areas in the province is selected randomly for audit. The audit selections are not based on past performance.

Only those licensees or BCTS operations that have not been audited by the Board in the past five years are eligible for selection.

Audit Standards

The audits are conducted in accordance with auditing standards developed by the Board. These standards include adherence to the auditor independence standards and the ethical requirements, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour and are consistent with Canadian generally accepted auditing standards. The standards for compliance audits are described in the Board's Compliance Audit Reference Manual.

Audit Process

Conducting the Audit

Once the Board randomly selects an area or district and determines the scope of audit to be conducted and the licensee(s) to be audited, all activities carried out during the period subject to audit are identified (such as harvesting, replanting, road construction, road deactivation). Items that make up each forest activity are referred to as a population. For example, all sites harvested form the timber harvesting population and all road sections constructed form the road construction population.

The auditors select a separate sample for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to areas where the risk of non-compliance is greater. For smaller audits, the sample will include the full population. Auditors also consider factors such as geographic distribution and values potentially affected by activities to ensure an adequate sample.

Auditors' work includes interviewing licensee staff, reviewing the auditee's applicable plans, reviewing applicable government orders, assessing some features from helicopters and measuring specific features like riparian reserve zone widths using ground procedures. The audit teams generally spend three to five days in the field.

Evaluating the Results

The Board recognizes that compliance with the requirements of FRPA and the *Wildfire Act* is more a matter of degree than absolute adherence. Determining compliance, and assessing the significance of non-compliance, requires the exercise of professional judgment within the direction provided by the Board.

The audit team, composed of professionals and technical experts, first determines whether forest practices comply with legal requirements. For those practices considered to not be in compliance, the audit team then evaluates the significance of the non-compliance, based on a number of criteria, including the magnitude of the event, the frequency of its occurrence and the severity of the consequences.

Auditors categorize their findings into the following levels of compliance:

Compliance – where the auditor finds that practices meet FRPA and *Wildfire Act* requirements.

Unsound Practice – where the auditor identifies a significant practice that, although in compliance with FRPA or the *Wildfire Act*, is not considered to be sound management.

Not significant non-compliance – where the auditor, upon reaching a non-compliance conclusion, determines that one or more non-compliance event(s) is not significant and not generally worthy of reporting. However, in certain circumstances, these events may be reported as an area requiring improvement.

Significant non-compliance – where the auditor determines a non-compliance event(s) or condition(s) is, or has the potential to be, significant and is considered worthy of reporting.

Significant breach – where the auditor finds that significant harm has occurred, or is beginning to occur, to persons or the environment as a result of one or more non-compliance events.

If a significant breach of the legislation has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the responsible Minister(s).

Reporting

Based on the above evaluation, the auditor then prepares a draft audit report. The party being audited is given a copy of the draft report for review and comment before it is submitted to the Board.

The Board reviews the draft report and determines if the audit findings may adversely affect any party or person. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report. The opportunity to make representations allows parties that may potentially be adversely affected to present their views to the Board.

The Board reviews representations from parties that may potentially be adversely affected, makes any necessary changes to the report, and decides if recommendations are warranted. The report is then finalized and released: first to the auditee and then to the public and government seven days later.

ENDNOTES

ⁱ Major structure includes bridges and major culverts.

- Bridge means a temporary or permanent crossing structure with a span length equal to or greater than 6 metres or an abutment height of 4 metres or greater.
- Major culvert has a pipe diameter of 2 metres or greater or is a pipe or open bottom arch with a span greater than 2.13 metres.

ⁱⁱ A forest stewardship plan (FSP) is a key planning element in the FRPA framework and the only plan subject to public review and comment and government approval. In FSPs, licensees are required to identify results and/or strategies consistent with government objectives for values such as water, wildlife and soils. These results and strategies must be measurable and once approved are subject to government enforcement. FSPs identify areas within which road construction and harvesting will occur but are not required to show the specific locations of future roads and cut blocks. FSPs can have a term of up to five years.



**Forest
Practices
Board**

PO Box 9905 Stn Prov Govt

Victoria, BC V8X 9R1 Canada

Tel. 250.213.4700 | Fax 250.213.4725 | Toll Free 1.800.994.5899

EGBC Permit to Practice #1001000

For more information on the Board, please visit our website at: www.bcfpb.ca