



**Forest
Practices
Board**

Forestry Audit: BC Timber Sales

*Chinook Business Area
Squamish District*

FPB/ARC/135

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Table of Contents

Board Commentary..... 1

Audit Results..... 3

 Background..... 3

 Audit Approach and Scope 4

 Planning and Practices Examined 4

 Findings 5

 Audit Opinion 8

Appendix 1: Forest Practices Board Compliance Audit Process10

Board Commentary

This audit examined the activities of the BC Timber Sales (BCTS) program in the Squamish portion of the Chinook business area. BCTS's operating area includes the Sea to Sky corridor – a world-famous recreational destination for both residents and visitors. Substantial First Nations interest, high recreational use and the natural values of the land base create significant challenges for BCTS and timber sale licensees carrying out forestry activities in the area. Overall, the audit found that BCTS and the timber sale licensees did a good job at meeting these challenges and the Board acknowledges their efforts.

Auditors did find a road use permit holder in significant non-compliance with the *Forest and Range Practices Act* (FRPA) for designing a bridge that was inadequate to withstand significant rainfall or a flood. The bridge design indicated that the structure could pass the highest water flow expected in 100 years, but in fact the bridge could only withstand the highest flow expected every 10 years. The bridge is located on a main forest service road and, in a significant rain event, could pose a risk to public safety should it wash out. Further, both FRPA and the road use permit required the holder to give the district manager 30-days notice before constructing the bridge. This notice provides an opportunity for government to review the plans and specify any requirements. The permit holder failed to provide this notice to the district manager, although it did notify BCTS. A government engineer has since visited the site and determined that the bridge must be removed by November 2012.

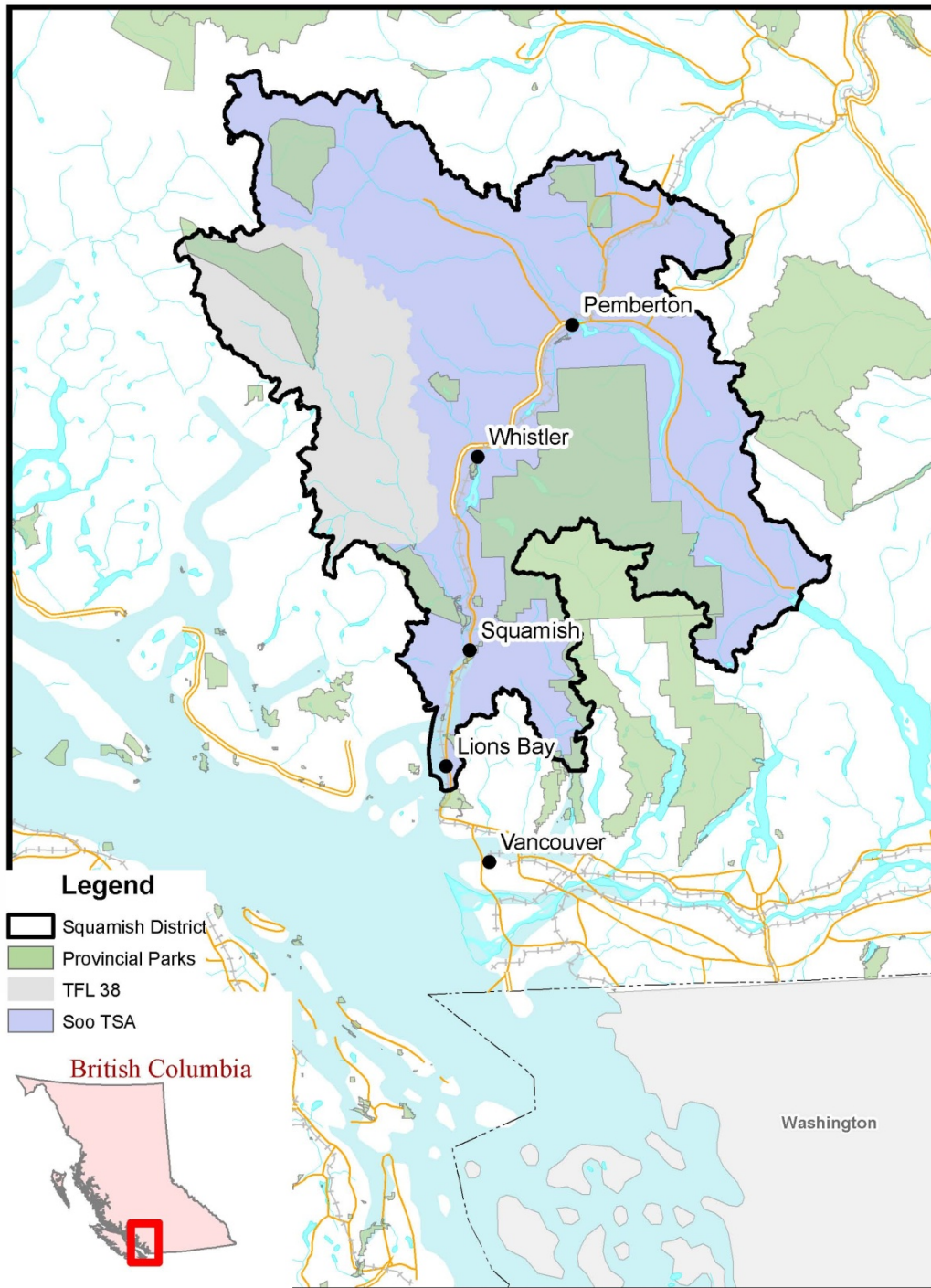
The Board reminds all persons who are ordered to maintain a forest service road of the legislated requirement to provide 30-days notice to the district manager before building a bridge, installing a major culvert, or installing a culvert on a fish stream on a forest service road.

Fire hazard abatement is an issue in the Sea to Sky corridor, where there is public opposition to smoke. The *Wildfire Act* requires licensees to assess the fire hazard created by logging debris and to abate the hazard if required. The most common abatement method is to burn debris piles when weather and wind conditions are favourable. Burning may only be done when “venting” is appropriate, i.e., when smoke will disperse well. Where piles are located adjacent to major roads, chipping the debris may also be economical.

Some licensees are reluctant to burn, or report that it is difficult to find an appropriate window where burning can be done with good venting. Of the 15 timber sale licences audited, the hazard was not abated on two of them, where auditors expected that it should have been. Further, there are currently nine older timber sales where the fire hazard has not been abated. As a way to ensure licensees meet their obligation to abate fire hazard, BCTS withholds deposit refunds until they do. BCTS is also considering other options to ensure fire hazard abatement is met.

The Board is satisfied with BCTS's response to this issue.

Map of the Squamish portion of the Chinook Business Area



Audit Results

Background

As part of the Forest Practices Board's 2011 compliance audit program, the BC Timber Sales (BCTS) program and timber sale licence (TSL) holders in the Squamish portion of the Chinook Business Area were selected for audit.

The 1.1 million hectare Squamish district includes the communities of Lions Bay, Squamish, Whistler and Pemberton. A map of the district appears on page 2. About 40 percent of the district is forested with temperate rain forest and transitional interior forest. Locals and visitors alike take full advantage of the countless world class recreational opportunities within the district.



The mountainous terrain of the Sea to Sky corridor.

BCTS has an allocated volume of 115 789 cubic metres of timber from the Squamish district, and it auctions that timber to registrants in the BCTS program. BCTS prepares operational plans and issues timber sale licences and road permits. Successful bidders are awarded timber sale licences and must fulfill licence, permit, and legislated obligations, including timber harvesting and road work within cutblocks. Approximately 122 000 cubic metres of timber was harvested by TSL holders during the two-year audit period.

The Board's audit fieldwork took place from August 22 to 26, 2011.

Objectives Set by Government

The Sea to Sky Land and Resource Management Plan (LRMP) lays out general management direction for values such as water, wildlife, and recreation. It also identifies land use zones and objectives for old growth management and wildlife habitat to guide the management of resources across the landscape. While not formal legislation, the LRMP is considered government policy, so BCTS's activities should be consistent with it.

BCTS's 2007 to 2012 forest stewardship plan (FSP)ⁱ provides the link between on-the-ground forestry operations and FRPA objectives.

Audit Approach and Scope

The audit examined both BCTS's and timber sale licensees' obligations and activities.

BCTS is responsible for operational planning, including preparing FSPs and site plans, silviculture activities, some bridge maintenance and construction and most road construction, maintenance and deactivation outside of cutblocks.

Timber sale licensees are responsible for timber harvesting, fire protection, most road construction, maintenance and deactivation within cutblocks, and some bridge construction and maintenance.

These activities were assessed for compliance with the *Forest and Range Practices Act* (FRPA), the *Wildfire Act* (WA) and related regulations. All activities, planning and obligations for the period August 1, 2009, to August 26, 2011, were included in the scope of the audit.

The Board's audit reference manual, *Compliance Audit Reference Manual, Version 6.0, May 2003*, and the addendum to the manual for the 2011 audit season, set out the standards and procedures that were used to carry out this audit. Further details about the audit process appear in Appendix 1.

Planning and Practices Examined

BCTS Responsibilities

Operational Planning

BCTS conducted its operational planning under its 2007 to 2012 forest stewardship plan (FSP). The FSP was examined to ensure that it is consistent with legislated requirements. Planning at the stand level was evaluated to ensure consistency with the FSP and legal requirements during harvesting, road and silviculture assessments in the field.

Road Construction, Maintenance, Deactivation

BCTS did not construct or deactivate any roads during the audit period; however, it was responsible for maintaining 172 kilometres of forest service road. It also built 2 bridges on the Sloquet Creek Forest Service Road and maintained a total of 34 forest service road bridges.

The Board audited 132 kilometres of road maintenance, construction of the 2 bridges and maintenance of 28 bridges.

Silviculture Obligations and Activities

Within the audit period, BCTS used chemicals to brush 24 cutblocks, site prepared one cutblock and planted 69 cutblocks. Free growing obligations were due or declared on 22 cutblocks and regeneration obligations were due on 38 cutblocks during the audit period.

The board assessed 5 brushed cutblocks, 1 site prepared cutblock, 7 planted cutblocks, 7 cutblocks with regeneration obligations due, and 7 cutblocks with free-growing obligations due.

Timber Sale Licensee Responsibilities

Timber Harvesting

During the audit period, TSL holders harvested or partially harvested 31 cutblocks totaling 621.8 hectares. Harvesting was done by helicopter, cable and ground-based systems. The Board examined the complete harvest population either by ground, air, or both.

Road Construction, Maintenance and Deactivation

The Board audited all roads built, maintained and deactivated under road permit by timber sale licensees during the audit period. This amounted to 14.4 kilometres built, 23 kilometres maintained, and 6 kilometres of road deactivated. A licensee built two bridges – one to access a cutblock and one on a forest service road – and both were examined.



Fire tool inspection.

Fire Protection

Fire preparedness on two active operations encountered in the field was audited for compliance with the *Wildfire Act*. Fire hazard and abatement activities and obligations were also examined on each of the 15 timber sale licences.

Findings

The audit found the planning and forestry activities undertaken by BCTS complied in all significant respects with the requirements of FRPA, WA and related regulations, as of August 2011.

The audit found, with one exception, the planning and forest activities undertaken by TSL holders complied in all significant respects with the requirements of FRPA, WA and related regulations, as of August 2011.

The audit identified a situation of significant non-compliance with respect to the design of a newly constructed bridge. The bridge was designed by a road use permit holder who is also a timber sale licensee. This issue is discussed below. The audit also found that the road construction practices of the same timber sale licensee require improvement and that is discussed in the *Road Construction on MA2913* section below.

Bridge Construction

A log stringer bridge (DSQ 3213) on the public West Main Forest Service Road required repairs before it could be safely used. The bridge provided access to a timber sale licence and the road use permit (RUP) holder, 0793663 B.C. Ltd., decided to replace the structure rather than repair it. The RUP holder is also a timber sale licensee.

The RUP required the holder to maintain the road. Section 79(7) of the *Forest Planning and Practices Regulation* (FPPR) permits a RUP holder, when required to maintain a road, to build a bridge on a forest service road only after providing 30-days notice to the district manager. This period gives the district manager time to specify any requirements, including the load rating of the bridge, expected life span of the bridge, and construction materials. The RUP holder did not notify the district manager of its intention to construct the bridge and, as a result, did not comply with section 79(7) of the FPPR. More importantly, the district manager and regional engineering staff did not know about the bridge replacement and so did not have the opportunity to specify any requirements. The licensee did, however, notify BCTS of its bridge replacement plans. The licensee told the Board that since BCTS is a government agency, it felt it was meeting regulatory requirements.

Section 74 of the FPPR requires that bridges be designed to pass the highest peak flow expected during the life span of the structure. For example, if a bridge is expected to remain in place for over 15 years, it must be able to pass the “Q100,” or the peak flow expected once every 100 years.

A professional forester employed by the RUP holder designed the replacement structure. The design does not discuss the anticipated life span of the structure; however it indicated that there would be 50 centimetres of clearance between the water and the bridge during a 100-year flood event.

The bridge was built in July 2010. Auditors visited the site on August 22, 2011. Although 31 millimetres of rain fell that day, there had been no precipitation in the area for a month, and the clearance was estimated at 70 centimetres. Auditors were concerned that there might not be adequate clearance during a significant rain event and that public safety could be at risk.

The ministry’s regional engineer reviewed the peak flow calculations and found that the bridge will not be able to pass the 100-year peak flow, nor any debris that might flow down the channel. As a result, the RUP holder did not comply with section 74 of the FPPR when it built the DSQ 3213 log stringer bridge. This is considered a significant non-compliance due to the public safety risk.

The licensee and the regional engineer have since visited the site and determined that the bridge will accommodate the peak flow expected once in 10 years (Q10). The licensee and the engineer agreed the bridge must be removed by November 2012. Access to the bridge is currently blocked by a slump of soil, but the licensee plans to resume logging in spring 2012.

Road Construction on MA2913

A timber sale licensee, 0793663 B.C. Ltd., built a 994-metre long section of road to access part of timber sale A87071. A professionally prepared road plan called for 10 culverts to be installed at specific locations. During construction, two culverts and six cross-ditches were installed. However, one culvert was smaller than planned and the other was plugged with sediment, resulting in water running down the road. At another location, an S6 stream was diverted into a ditch for 20 metres before crossing the road at a cross ditch and spilling onto a landing. At the time of the audit, natural drainage was not maintained, which is in non-compliance with section 39(1) of the *Forest Planning and Practices Regulation* (FPPR).

Although it is permissible for a professional to change the location and type of drainage structures during construction, natural drainage patterns must be maintained both during and after construction. This was an isolated incident and is therefore considered an area requiring improvement.

The licensee has since returned to the road and installed additional cross ditches and unplugged a culvert. Natural drainage patterns have been re-established.

Operational Planning

BCTS incorporated FRPA objectives into its FSP and site plans, and forest practices met the strategies set out in the FSP that were measureable. The FSP was consistent with legislated requirements, and planning at the landscape and stand levels was also consistent with the FSP and legislated requirements.

BCTS addressed site-specific resources in the site plans by accurately identifying and prescribing practices for resource features, including streams and wetlands, sensitive or unstable soils, wildlife habitat, old growth management areas, visually sensitive areas, and recreation trails. BCTS maintains a dialogue with trail users to ensure safety during active operations and to ensure that trails are cleaned if affected by harvesting activities.

Timber Harvesting

The audit found that harvesting conducted by timber sale licensees was in accordance with requirements of legislation and site plans. Riparian management areas, wildlife tree patches and trees reserved from harvest were all respected. Machine-free areas were maintained and trees were felled and yarded away from streams as stated in site plans. Streams and gullies were clean and debris was removed. Soil disturbance was minimal.

Road and Bridge Construction, Maintenance and Deactivation

No concerns were identified with road construction, maintenance or deactivation with the exception of the issue previously discussed. Regular road and bridge inspections were carried out according to BCTS's risk rating process. Roads were stable and stream crossings were well maintained and in good condition. Deactivation work included effective cross-ditching and armouring.

No concerns were identified with bridge construction and maintenance with the exception of the issue previously discussed. Bridges are regularly inspected and removed and or replaced when necessary.

Silviculture Activities and Obligations

There were no significant issues identified with brushing, planting, site preparation, and regeneration or free-to-grow obligations during the audit. BCTS maintained accurate silviculture records and conducted timely silviculture activities. BCTS also met government seed transfer requirements as well as free to grow and regeneration obligations within the required time frames.

Fire Protection Activities

The two active timber sale licences visited were adequately prepared for a fire and met the requirements of the *Wildfire Act*.

Fire hazard was assessed for most completed blocks, and BCTS harvest inspections noted where assessments were due for more recently completed blocks. Fire hazard abatement is an issue in the Sea to Sky corridor, where there is public opposition to smoke. Some licensees are reluctant to burn or report that it is difficult to find an appropriate window where burning can be done with good venting. BCTS is withholding deposits until fire abatement obligations are met as a way to encourage compliance. Of the 15 timber sale licenses in the harvest population, the hazard had not been abated on two, where auditors expected that it should have been abated. Further, there are currently nine older timber sale licenses where the fire hazard has not been abated.

Audit Opinion

In my opinion, except for the bridge construction issue discussed below, 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 Squamish district portion of the Chinook Business Area between August 1, 2009, and August 26, 2011, complied in all significant respects with the requirements of the *Forest and Range Practices Act*, the *Wildfire Act* and related regulations as of August 2011.

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.

As described in the *Bridge Construction* section of this report, the audit identified a situation of significant non-compliance related to the design of bridge DSQ 3213 by a road use permit holder.

Without further qualifying my opinion, I draw attention to the *Road Construction on MA2913* section of the report which describes an area requiring improvement.

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. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with FRPA and WA.



Christopher R. Mosher CA, EP(EMSLA)
Director, Audits

Victoria, British Columbia
January 11, 2012

ⁱ 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 cutblocks. FSPs can have a term of up to five years.

Appendix 1:

Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government and agreement-holders under the *Forest and Range Practices Act* (FRPA), section 122, and the *Wildfire Act* (WA). Compliance audits examine forest or range planning and practices to determine whether or not they meet FRPA and/or WA requirements. (The transitional provisions of FRPA state that the Code continues to apply to forest practices carried out under a forest development plan, until there is an approved forest or range stewardship plan, at which point the requirements of FRPA apply.)

Selection of Auditees

The Board conducts about eight or nine compliance audits annually. Most of these are audits of agreement holders. The Board also audits the government's BC Timber Sales Program (BCTS). This section describes the process for selecting agreement holders to audit.

To begin with, auditors randomly select an area of the Province, such as a forest 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 Board strategic priorities (updated annually), and the type of audit is determined. At this stage, we choose the auditee(s) that best suits the selected risk and priorities. The audit selections are not based on past performance.

For example, in 2007, the Board randomly selected the Robson Valley Timber Supply Area as a location for an audit. After assessing the activities within that area, we discovered that two licensees had recently closed operations due to financial problems. As the Board has expressed concern in the past about financially strapped companies failing to meet outstanding obligations, such as reforestation, and road maintenance, the audit focused on the status of the outstanding obligations of these two licences.

For BCTS audits, a forest district within one of the 12 business areas within the province is selected randomly for audit.

Audit Standards

Audits by the Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with 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 or replanting, and road construction or deactivation activities). 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.

A separate sample is then selected 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.

Audit field work includes assessments of features using helicopters and ground procedures, such as measuring specific features like riparian reserve zone width. The audit teams generally spend one to two weeks in the field.

Evaluating the Results

The Board recognizes that compliance with the many requirements of the Code, FRPA and WA, 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 legislated 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 Code, FRPA and WA requirements.

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, events that are considered not significant non-compliance 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 many non-compliance events.

If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Minister of Forests, Lands and Natural Resource Operations.

Reporting

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

Once the auditor submits the draft report, the Board reviews it 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 representations allow parties that may potentially be adversely affected to present their views to the Board.

The Board then reviews the auditor's draft report and the representations from parties that may potentially be adversely affected before preparing its final report. Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.



**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

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

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BCTS operations near Squamish pass audit

VICTORIA – An audit of BC Timber Sales and 15 timber sale licensees in the Squamish area found that forest planning, silviculture, fire protection, harvesting and road activities were mostly in compliance with legislation, according to a report released today.

“The audit found that a timber sale licence holder designed and built a bridge on a main forest service road that was inadequate to withstand significant rainfall or a flood, which is not in compliance with the legislation,” said board chair Al Gorley. “The board was concerned because of the potential risk to public safety if the bridge was to wash out.”

“Despite this non-compliance, the board recognizes that BCTS’s operating area includes substantial First Nations interest, high recreational use and natural values that create significant challenges for industrial forestry activities in this area. Overall, the audit found that BCTS and the timber sale licensees did a good job at meeting these challenges and the board acknowledges their efforts.

The 1.1-million hectare Squamish district includes the communities of Lions Bay, Squamish, Whistler and Pemberton.

The board looked at harvesting, road construction and maintenance, silviculture, fire preparedness, environmental protection activities and associated planning done between August 2009 and August 2011.

The Forest Practices Board is B.C.’s independent watchdog for sound forest and range practices, reporting its findings and recommendations directly to the public and government. The board audits forest and range practices on public lands and appropriateness of government enforcement. It can also make recommendations for improvement to practices and legislation.

-30-

More information can be obtained by contacting:

Helen Davies, Communications
Forest Practices Board
Phone: 250 213-4708 / 1 800 994-5899