TIMBER PRICING BRANCH

Interior Appraisal Manual

Effective July 1, 2012

BRITISH COLUMBIA

Table of Contents

4 Tenure Obligation Adjustments

5 Stumpage Rate Determination

6 Miscellaneous Policies

Appendices

Index

Tables

Introduction 1

1.1 Definitions

In this manual:

"Act" means *Forest Act*;

"Agreement" means a form of agreement granting rights to harvest Crown timber referred to in section 12 of the *Act,* or a pulpwood agreement;

"Anniversary date" means the annual recurrence of the month and day when the term of the cutting authority began;

"Applicable Volume" means:

a. Except as provided in sections 2.2.1(e) and 4.3(12), and subject to paragraph (b) of this definition, where the harvesting is authorized on a cutting authority area under an agreement other than a BCTS licence, applicable volume means the total net coniferous volume,
b. Where the cutting authority is cruised based and the deciduous timber has not been reserved, applicable volume means the sum of the total net coniferous volume and the total net deciduous volume,
c. Where the harvesting is authorized on a cutting authority area under a BCTS licence, applicable volume means the sum of the total net coniferous volume and the total net deciduous volume;

"**Appraisal Data Submission (ADS)"** means the information required by the person who determines the stumpage rate to determine the stumpage rate including the forest professional's signed submission in the form required by the director, and any other information required by the regional manager or district manager;

"BCTS" means BC Timber Sales;

"BCTS licence" means a timber sale licence entered into under section 20 of the *Act* or section 21 as it was before it was repealed;

"Billing history record" means a record of log scale data derived from a record kept by Timber Pricing Branch of log scale data reported on stumpage invoices issued by the Timber Pricing Branch for timber scaled under section 94 of the *Act*;

"Bonus Bid" means a bonus bid described in section 103(1)(d) of the *Act*;

"Bonus Offer" means a bonus offer described in section 103(2) of the *Act*;

"Chipped" means having been cut into small pieces by a chipper;

"Coniferous cruise volume" means that part of the total net cruise volume which is coniferous timber;

"Controlled Recreation Area" means controlled recreation area as defined in the *Resort Timber Administration Act*;

"Cruise Based" means a cutting authority where under section 106 of the *Act* the stumpage payable is calculated using information provided by a cruise of the timber conducted before the timber is cut;

"Cutting Authority" means:

1. A cutting permit issued under:
    a. a forest licence,
    b. a timber sale licence that provides for cutting permits,
    c. a tree farm licence,
    d. a community forest agreement,
    e. a woodlot licence,
    f. a timber licence,
    g. a community salvage licence,
    h. a master licence to cut,
    i. a forestry licence to cut, or
    j. a woodland licence,
2. A timber sale licence under which cutting permits have not or will not be issued,
3. All other licences to cut,
4. A road permit;

"Cutting Authority Area" means the area where timber may be harvested under a cutting authority, which has a unique timber mark;

"Deciduous timber" means timber that is not of a coniferous species;

"Decked timber" means timber that has been 100% decked at roadside;

"Director" means director of Timber Pricing Branch of the Ministry of Forests, Lands and Natural Resource Operations;

"District Manager" means:

a. Except as provided in paragraph (b) of this definition, the district manager or district manager's designate,

b. Where the cutting authority area being appraised or reappraised is located in a controlled recreation area designated under the *Resort Timber Administration Act*, then district manager means an employee of the Ministry, to whom the Minister has delegated the minister's powers and duties under section 2 of the *Resort Timber Administration Act*;

"Effective Date" means, unless otherwise specified in the manual:

i. the date the stumpage rate is determined when required for advertising for competitive award, or

ii. the effective date of the cutting authority when the stumpage rate is determined for a cutting permit or a direct award licence;

"Executive Director, BCTS" means Executive Director, BCTS or Executive Director, BCTS' designate;

"F.O.B." means 'free on board'. The specified destination point at which ownership of the goods transfers from the seller to the buyer. 'F.O.B. origin' would mean the buyer assumes responsibility for the goods, shipping costs and insurance once the goods leave the seller's premises;

"Forest Professional" means a Registered Professional Forester (RPF), a Registered Forest Technologist (RFT) or a special permit holder acting within the scope of their permit, registered and in good standing with the Association of British Columbia Forest Professionals;

"Fully Appraised" means stand data (site specific or borrowed) has been used by the general appraisal system to calculate an indicated stumpage rate or has been included in an appraisal for a BCTS cutting authority where the upset was set at the variable cost to prepare the timber for sale;

"Harvest Method" means ground skidding, overhead cable, helicopter or horse;

"Hogged Tree Material" means tree residues or by-products that have been shredded into smaller fragments by mechanical action;

"Licensee" means the holder of a cutting authority;

"Manual" means *Interior Appraisal Manual*;

"Minister" means Minister of Forests, Lands and Natural Resource Operations;

"Ministry" means Ministry of Forests, Lands and Natural Resource Operations;

"Net Merchantable Volume" means unless otherwise specified in the manual, the post reduction cruise volume compiled to the Interior Standard Merchantable Specifications in Table 1-1 of this manual;

"New Construction" means the following construction phases: subgrade construction, placement of additional stabilizing material and the construction and installation of drainage and other pertinent structures;

"Partially Harvested Timber" means timber that has been felled and/or bucked and not yet forwarded to roadside;

"Prescribed Minimum Stumpage Rate" means the minimum stumpage rate prescribed by the *Minimum Stumpage Rate Regulation* (BC Regulation 354/87);

"Timber Pricing Branch" means the Timber Pricing Branch of the Ministry;

"Reconstruction and Replacement" means replacement or structural repair of a major drainage structure (e.g., replacing stringers, cross ties, or cribbing), or major resurfacing, which means resurfacing sections of more than 0.3 km in length that were initially surfaced but have deteriorated due to long term wear and tear, where stabilizing material was not previously used, or major reconstruction, which means restoring at least 0.1 km of road (per occurrence) that requires complete rebuilding of the subgrade;

"Regional Manager" means a regional executive director of the Ministry or except for section 1.2.1(1)(b), the regional executive director's designate;

"Regulations" means regulations under the *Act*;

"Remedial Fence and Wing Fence" means a fence that is required to remedy, reduce or manage the impact of timber harvesting activities on range management;

"Road Permit" means road permit or road timber mark;

"Salvage" except as provided in section 6.4, means a cutting authority area where greater than one-third of the net coniferous cruise volume is attacked by mountain pine beetle or other pests;

"Scale Based" means the stumpage payable is based on a scale of the timber harvested from the cutting authority area in accordance with part 6 of the *Act*;

"Single Unit" means a cutblock has one continuous boundary and it is not made up of two or more pieces separated by timber that is not within the gross area of the cutblock from the cruise compilation;

"**Skyline System**" means a cable logging system used to fully suspend logs for protection of the soil, for crossing streams without damage, or to yard logs for long distances. Skyline systems may use intermediate supports to reduce the sag in long cables.

"Species Net Volume" is the species net volume reported in the appraisal summary report from the cruise compilation for the cutting authority area;

"Stand as a Whole (SAAW) Pricing" means that one stumpage rate is determined for all of the net merchantable timber on the cutting authority area. In a cruise based cutting

authority, the single stumpage rate applies to all of the net merchantable volume identified in the cruise conducted in accordance with the *Cruising Manual*,

"Stud Log Percent" means the net volume of 5 m logs with top diameters under 20 cm expressed as a percentage of the total net cruise volume. The stud log percent is rounded to the nearest whole percentage point;

"Stumpage Appraisal Parameter" means:

a. Interior Average Market Price,
b. BC Consumer Price Index,
c. US Dollar Exchange rate,
d. Lumber Average Market Values,
e. Interior Basic Silviculture Costs by Species,
f. Final Neutrality Adjustment.

"Suitable Secondary Stand Structure Survey" means a suitable secondary stand structure survey as defined in section 1(4) of the *Forest Planning and Practices Regulation*

"Timber Harvesting" means the felling or removal of timber other than on road rights-of-way or landings on a cutblock;

"Timber Sales Manager" means the Timber Sales Manager or the Timber Sales Manager's designate;

"Total Net Coniferous Volume" is the total of the species net volumes for all coniferous species on the cutting authority area;

"Total Net Cruise Volume" means the sum of the species net cruise volumes reported in the appraisal summary report from the cruise compilation for the cutting authority area;

"Total Net Deciduous Volume" is the total of the species net volumes for all deciduous species on the cutting authority area,

"Tributary Cutting Authority Area" means a cutting authority area from which timber must be transported over the road that is developed, or a cutting authority area to which bulk fuels, supplies, equipment and harvesting crews necessary to carry out the day-to-day harvesting activities on that area must be taken on a regular basis over the road that is developed.

1.2 Terms of Reference

1. Pursuant to section 105 of the *Forest Act* the provisions of this manual are policies and procedures to be used in the determination, redetermination and variance of stumpage rates in the Northern Interior Forest Region and in the Southern Interior Forest Region and Manning Park.

1.2.1 Responsibility for Stumpage Determination

1. The following employees are authorized to determine, redetermine and vary stumpage:

    a. director and employees of Timber Pricing Branch of the Ministry.

    b. regional managers, regional timber pricing co-ordinators, and employees of the regional revenue sections of the Ministry.

2. The employees of the Timber Administration section, Resort Development Branch of the Ministry are authorized to determine or redetermine stumpage rates in accordance with section 6.8(1) or (2).

1.2.2 Stumpage Appraisal Parameters

1. The stumpage appraisal parameters are compiled, calculated, and/or adopted by Timber Pricing Branch.

2. Once approved by the director they become an integral part of this manual.

3. The parameters are published by Timber Pricing Branch.

4. Current and historical parameters may be found at the following web site:

http://www.for.gov.bc.ca/hva/

1.2.3 Minimum Stumpage Rate

A stumpage rate or an upset determined using this manual shall not be less than the prescribed minimum stumpage rate.

1.3 Numbering and Calculation Conventions

1. The following exemplifies the numbering system used in this manual:

1. =	Chapter.
1.1 or 1.1.1. =	Section.
1.1.1 (2) =	Section with subsection.
1.1.1(2)(a) =	Section with subsection and paragraph.
Table 4-2 =	Table 2 within chapter 4.

2. The calculation of the Interior Average Market Price must be performed in accordance with the specifications contained in the documents titled: "*Specifications: The Interior Market Pricing System*" as updated from time-to-time, and "*Interior Market Pricing System-Update"* as updated from time-to-time.

3. Where a value is specified as a limit, for example a constraint or a requirement for an equation,

   a. The value will be treated as an absolute value, and

   b. An actual measurement or record will not be rounded before use unless otherwise specified in this manual.

4. Each calculation of a tenure obligation adjustment or specified operation expressed in dollars per cubic metre will be rounded to the nearest cent.

1.4 Cutblocks within a Cutting Authority Area

1. Cutblocks within a cutting authority area must:

    a. Constitute a single unit,

    b. Be within the same forest district,

    c. Be tributary to a common point of appraisal (unless included in a blanket salvage permit),

    d. Must not exceed a maximum distance of ten kilometres between the furthest boundaries of the furthest cutblocks, except when required for blanket salvage.

2. A cutting authority shall not include both an authorization to harvest on a cutblock where 35% or more of the net merchantable coniferous timber is red and grey mountain pine beetle attacked Lodgepole pine and an authorization to harvest on a cutblock that does not have those same characteristics.

1.5 Appraisal Data Submission Requirements

1.5.1 Cruise Information

1. Unless otherwise specified by the director, cruise data must be gathered and compiled according to the approved interior standard timber merchantability specifications in Table 1-1 below and in accordance with the following Ministry publications:

   a. *Cruising Manual* at the following web site:

   http://www.for.gov.bc.ca/hva/manuals/cruising.htm

   b. *Cruise Compilation Manual* at the following web site:

   http://www.for.gov.bc.ca/hva/manuals/cruisecompilation.htm

2. When cruise information is submitted to the district manager or the regional manager in order to determine a stumpage rate or an upset stumpage rate, that information must include:

   a. The Cruise Compilation Report, and

   b. The ASCII data files (if applicable, also the percent reduction ASCII file).

3. When requested by the district manager, a copy of the original field data must be supplied by the licensee.

Table 1-1 Interior Timber Merchantability Specifications

Description	
The following standard timber merchantability specifications must be used for all appraisals.	
Stumps (Measured on the side of the stump adjacent to the highest ground.)	
no higher than	30.0 cm
Diameter (outside bark) at stump height	
lodgepole pine: all timber that meets or exceeds	15.0 cm
all other species: all timber that meets or exceeds	20.0 cm
Top diameter (inside bark or slab thickness)	
for all species and ages, except cedar older than 141 years, all timber that meets or exceeds	10.0 cm
Top diameter (inside bark or slab thickness)	
for cedar older than 141 years, all timber that meets or exceeds	15.0 cm
Minimum length	
log or slab	3.0 m

1.5.1.1 Comparative Cruise Data

1. Comparative cruise data is cruise data from an existing cutting authority area with similar stand and terrain characteristics that is used in the appraisal of a new cutting authority area.

2. The district manager may require the selection of a comparable cutting authority to be in accordance with procedures set out in section 2.10 of the *Cruising Manual*.

3. Except for subsection (5), if there is time to perform a full cruise, then the timber will be cruised.

4. If there is insufficient time to perform a full cruise then comparative cruise data may be utilized:

    a. For cutting authorities with volumes greater than 5 000 m^3 if:

        i. the area is in an approved Emergency Bark Beetle Management Area (EBBMA) as designated by the Minister and within an approved Emergency Management Unit (EMU) as designated by the beetle management coordinator,

        ii. the licensee has previously harvested comparative cutting authorities in a timely manner, and

        iii. the regional manager has determined that the requirement to perform a full operational cruise will delay expeditious harvesting and result in further damage.

5. Comparative cruise data may be utilized when the stumpage rate is determined according to sections 6.2(6), 6.2.1 and 6.7(4).

1.5.2 Appraisal Data Forms

1. Unless otherwise specified in paragraph (b) of this section, the form of ADS required by the director for:

   a. The Market Pricing System is the Electronic Commerce Appraisal System (ECAS) which can be found at:

      http://www.for.gov.bc.ca/hva/ECAS/index.htm

      A submission in ECAS must be signed by a forest professional.

   b. Miscellaneous timber pricing is the Interior Stumpage Rate Request Form (short form). Contact the appropriate regional office for the form. The short form must be signed by a forest professional unless appraised under sections 6.1.1, 6.1.2 or 6.3.

1.5.3 Appraisal Map

The appraisal map must be completed in accordance with the requirements of Appendix IV and must be submitted with the ADS in ECAS.

Appraisals, Reappraisals and Stumpage Adjustments 2

2.1 Appraisal Process

1. Except where the sawlog stumpage rate or an upset stumpage rate is determined in section 5.1 or chapter 6:

    a. an appraisal process is used to determine a stumpage rate for a cutting authority area using the manual in effect on the effective date of the cutting authority.

    b. the appraisal is effective on the effective date of the cutting authority.

2. In accordance with section 1.5.2, a forest professional on behalf of a licensee or BCTS shall submit an ADS to the district manager when the licensee or BCTS makes an application for a cutting authority.

3. The district manager may review the ADS, and may inform the forest professional, of any omissions or errors, or provisions of the manual that, in the opinion of the district manager, the forest professional may not have considered.

4. The forest professional may consider the district manager's information and may revise the ADS.

5. The district manager shall give any information supplied by the forest professional under this section to the person who determines the stumpage rate together with any other information that the district manager considers relevant to the appraisal.

6. The person who determines the stumpage rate may review the ADS, and information supplied by the district manager, and may inform the forest professional, of any omissions or errors, or provisions of the manual that, in the opinion of the person who determines the stumpage rate, the forest professional may not have considered.

7. The forest professional may consider the notification and may revise the ADS.

8. The person who determines the stumpage rate shall consider:

    a. the information provided by the forest professional,

    b. the information provided by the district manager, and

    c. any other information available to the person who determines the stumpage rate that is relevant to the appraisal.

9. The information in ECAS may be changed by the person who determines the stumpage rate in order to determine the stumpage rate.

10. Once Regional revenue staff determines the upset, BCTS will be advised by email from Timber Pricing Branch's General Appraisal System of the upset determination.

11. a. Once Regional revenue staff determines the stumpage rate, Timber Pricing Branch's General Appraisal System will advise those licensees who have submitted an email address that the stumpage determination has been made.

    b. The details of the licensee's stumpage determination will be made available on Timber Pricing Branch's website.

2.2 Reappraisals

1. Where these policies and procedures require a reappraisal to be performed, the stumpage rate must be redetermined in accordance with the relevant policies and procedures that are or were in effect as the case may be on the effective date of the reappraisal.

2. Except as provided in subsection (3) or (4) of this section or section 2.2.3 or otherwise directed by the Minister in section 2.2.2.1, a reappraisal is a complete reassessment of the cutting authority area at the time of the reappraisal by the person who determines the stumpage rate taking into account:

    a. A revised appraisal data submission submitted by the licensee in accordance with this manual, and/or

    b. Information available to the person who determines the stumpage rate.

3. At the time of a reappraisal, initial detailed engineering cost estimates may be re-estimated once after construction in accordance with section 4.3.3(4).

4. Where a reappraisal under sections 2.2.1.2(2) or 2.2.2 is warranted but there isn't any timber remaining on the cutting authority area to apply the redetermined stumpage rate to, then the reappraisal is redundant and not required.

2.2.1 Changed Circumstances

1. In this manual a changed circumstance means a circumstance where:

    a. i. the licensee or a contractor working on the licensee's behalf has harvested or will harvest at least 15% of the volume of timber on the cutting authority area using a harvest method that is different from the harvest method used in the most recent appraisal or reappraisal of the cutting authority area, and

        ii. the different harvest method when taken into account in a changed circumstance reappraisal will produce the highest stumpage rate within the meaning of section 3.1.

    b. The licensee or a contractor working on the licensee's behalf carries out or will carry out development on the cutting authority area such that there will be a difference of at least 15% between:

        i. the total appraised development cost estimate if it is recalculated under chapter 4 on the basis of the development actually carried out, to the extent this development is in accordance with chapter 4, and

ii. the total appraised development cost estimate used in the most recent appraisal or reappraisal, where this difference results from circumstances other than a change in the manual or a change as a result of a stumpage adjustment.

c. If the cutting authority is scale based and there has been a change in the harvest area when compared to the appraisal map submitted that exceeds the lesser of:

i. 15 hectares, or

ii. 15 percent of the harvest area for the cutting authority indicated on the appraisal map prior to the change,

d. If the cutting authority is cruise based and there has been a change in the harvest area when compared to the appraisal map submitted that exceeds the greater of:

i. three hectares; or

ii. three percent of the harvest area indicated on the appraisal map prior to the change.

If the change in the harvest area does not exceed the above thresholds of this subsection, the net merchantable area used for billing purposes shall still be updated to the new harvest area in the ministry's billing system.

e. i. except where timber on a cutting authority area has been damaged by a fire for which the licensee was responsible and the licensee failed to comply with the *Wildfire Act* or *Wildfire Regulations*, where timber is authorized for harvest under a cutting authority that has either a fixed stumpage rate or a stumpage rate that is adjusted quarterly and at least 15% of the volume of the timber that was considered in the appraisal of the cutting authority area authorized for harvest under that cutting authority has been suddenly and severely damaged.

ii. where the cutting authority area is reappraised because of sudden and severe damage the only timber that can be considered in the reappraisal is the standing timber remaining on the cutting authority area after the sudden and severe damage.

f. A cutting permit authorizing the harvesting of timber was issued before July 1, 2010 and surrendered on or after July 1, 2010, because of the planned Interior pricing policy changes July 1, 2010, and

i. the volume of all of the timber in all of the cutblocks where harvesting has not started, hereinafter referred to as the remaining timber, is greater than 25% of the volume of timber that was on the cutting authority area when the cutting permit was issued, and

ii. the district manager is satisfied that the remaining timber or harvest method is significantly different from the timber that has been harvested under the cutting permit.

g. A cutting permit authorizing the harvesting of timber on the cutting authority area was issued before July 1, 2010, timber harvesting has started on the cutting authority area, and

i. the right to harvest timber remaining on the cutting authority area hereinafter referred to as the remaining timber has been transferred by the timber sales manager after July 1, 2010 on behalf of the licensee to whom the cutting permit had been issued, and

ii. the district manager is satisfied that the remaining timber or harvest method is significantly different from the timber that was harvested on the cutting authority area prior to the transfer of the right to harvest the remaining timber.

h. The most recent appraisal or reappraisal included:

i. a Skyline or Camp specified operation; or

ii. root disease control as part of the tenure obligation adjustment; and

iii. a Camp or skyline was never used or skyline, or root disease control was never carried out on the cutting authority area in an amount greater than three hectares or three percent of the area indicated on the appraisal map; or

iv. the operations listed in paragraphs i. and ii in this subsection were not included in the most recent appraisal or reappraisal but were subsequently carried out by the licensee beyond the threshold in paragraph iii. of this subsection and met the requirements of this manual.

2. Except as provided in subsections 3 or 4 of this section, where a changed circumstance has occurred with respect to a cutting authority area, other than a cutting authority area that is subject of a road permit or a cutting authority area with a non-adjusting stumpage rate, the cutting authority area must be reappraised in accordance with section 2.2.1.1.

3. Where a licensee has notified the ministry in writing that a changed circumstance has occurred and the indicated stumpage rate for the cutting authority area has been less than $\$0.25/m^3$ since the cutting authority area was first appraised, and the indicated stumpage rate that would be calculated in a changed circumstance reappraisal would remain less than $\$0.25/m^3$, a changed circumstance reappraisal is not required.

4. Where a licensee has notified the ministry in writing that a changed circumstance has occurred, log transportation activities have been completed on the cutting authority area and the amount of stumpage payable as a result of a changed circumstance

reappraisal under section 2.2.1(1) would be reduced, the changed circumstance reappraisal must be done only at the licensee's request.

5. Where a cutting authority is reappraised because of a changed circumstance, any bonus bid or bonus offer in existence does not change and remains in effect.

2.2.1.1 Changed Circumstance Reappraisal Procedure

1. Where the cutting authority was issued prior to August 1, 2005, the licensee must submit an appraisal data submission to the district manager immediately if a changed circumstance has occurred.

2. a. Except for a changed circumstance under section 2.2.1(1)(e), the licensee must submit an appraisal data submission to the district manager within sixty days of completion of log transportation activities or no later than thirty days prior to the expiry of the cutting permit whichever comes first, if the cutting authority must be reappraised because of a changed circumstance under section 2.2.1.

   b. If the change in harvest area referred to under sections 2.2.1(c) and (d) includes a portion of the cutting authority area for which cruise information is not available, the person who determines the stumpage rate may use the best information that person deems available in the reappraisal.

   c. For a changed circumstance under section 2.2.1(1)(e), the licensee must submit an appraisal data submission to the district manager within thirty days of the date when the event that caused the sudden and severe damage stopped on the cutting authority area.

   d. Thereafter the changed circumstance procedure for paragraph (a) or (b) of this section is the same as required by sections 2.1(3) to 2.1(11).

3. Where the district manager believes that a changed circumstance has occurred under subsections (1) or (2) of section 2.2.1, and the licensee fails to provide the district manager with an appraisal data submission as described in subsection (2) of this section, the district manager may initiate a changed circumstance reappraisal using information that is available to the district manager and may notify the licensee of that action. Thereafter the changed circumstance reappraisal procedure is the same procedure as that required by section 2.1(6) through 2.1(11).

2.2.1.2 Effective Date of a Changed Circumstance Reappraisal

1. Except as otherwise provided in this section, a reappraisal because of a changed circumstance is effective on the day after the effective date of the most recent appraisal or reappraisal of the cutting authority area prior to the changed circumstance reappraisal.

2. Where the cutting authority to which the reappraisal pertains was issued prior to August 1, 2005, and the date of the changed circumstance is on or after July 1, 2010,

the changed circumstance reappraisal is effective on the day after the date the changed circumstance reappraisal stumpage rate is calculated.

3. Where the changed circumstance is a result of sudden and severe damage referred to in subsection 2.2.1(1)(e), the effective date of the reappraisal is the first day of the month following the date when the event that caused the sudden and severe damage stopped on the cutting authority area.

4. Except as provided in subsection 2 of this section, where the most recent reappraisal is a minister's directed reappraisal under section 2.2.2 or an insect damage reappraisal under section 2.2.3, the effective date of a changed circumstance reappraisal:

    a. Under section 2.2.1(1)(f) or 2.2.1(1)(g) is the day after the date of the most recent appraisal or reappraisal that is not a reappraisal under section 2.2.2 or section 2.2.3.

    b. Under any other subsection of this section, is the day after the date of the most recent appraisal or reappraisal that is not a reappraisal under section 2.2.2 dated after July 1, 2010, or a reappraisal under section 2.2.3.

2.2.2 Minister's Direction

1. The Minister may at any time direct the determination, redetermination or variance of a stumpage rate and that,

    a. a determined, redetermined or varied stumpage rate be effective on any future date, and that,

    b. the determination, redetermination or variance be made in accordance with any other directions that the Minister may direct.

2.2.2.1 Minister's Direction Procedure

1. The licensee shall submit to the district manager an interior appraisal data submission, if requested by the district manager within forty-five days of the Minister's direction.

2. Thereafter, the procedure for determining, redetermining or varying a stumpage rate under section 2.2.2 shall be the same procedure as that required by subsections 2.1(3) through 2.1(11) except as may otherwise be directed by the Minister.

2.2.3 Reappraisals Due to Insect Damage

1. a. A cutting authority with an adjustable stumpage rate or a cutting authority issued under a licence entered into under section 21 of the *Act* as it was before it was repealed may be reappraised on or after April 1, 2006 only twice under this section during the term and all extensions of the cutting authority on the basis of a revised appraisal data submission if the licensee submits a revised appraisal data submission to the district manager.

   b. The revised appraisal data submission is the appraisal data submission that was used in the most recent appraisal or reappraisal of the cutting authority area prior to the revision, hereinafter referred to in this section as the original ADS, with changes permitted only to the cruise data in the original ADS in accordance with the paragraphs (c) and (d) of this subsection.

   c. The licensee may either:

      i. update the insect attack code information from the field for each species of timber in the cruise data for codes 1, 2, 3, 5, 6, 7 and 8 as defined in the *Cruising Manual* and recompile the cruise for the cutting authority area by using the cruise data from the cruise in the original ADS for the plots in that part of the cutting authority area where timber has been harvested and combining that with the cruise data with updated insect attack codes for the plots in that part of the cutting authority area where timber has not been harvested, or

      ii. recompile the cruise data that was in the cruise in the original ADS.

   d. If a cutting authority area is reappraised in accordance with section 2.2.1.1 and the effective date of the changed circumstance reappraisal is prior to a reappraisal for that cutting authority area under section 2.2.3, then cutting authority area shall be reappraised subsequent to the changed circumstance reappraisal using only the same information and effective date as the original reappraisal under section 2.2.3 (except for information that has changed as a result of the changed circumstance reappraisal under section 2.2.1).

   e. Notwithstanding any other paragraph of this section, other data must be changed if it is required by the manual in effect at the time of the reappraisal and was not submitted in the original ADS.

2.2.3.1 Insect Damage Reappraisal Procedure

1. The insect damage reappraisal procedure is the procedure required by section 2.1(2) through 2.1(7).

2.2.3.2 Effective Date of an Insect Damage Reappraisal

1. The effective date of an insect damage reappraisal is the first day of the month following the month in which the district manager receives the revised appraisal data submission.

2.3 Stumpage Adjustments

1. Unless otherwise specified by this manual or by the Minister, and subject to section 6.6, a stumpage rate must be adjusted quarterly on each of January 1, April 1, July 1 and October 1, of each year.

2. The adjustment will be the recalculation of the stumpage rate that was determined in the most recent appraisal or reappraisal by using:

   a. the appraisal data used in the most recent appraisal or reappraisal,

   b. the manual in effect on the effective date of the most recent appraisal or reappraisal, and

   c. the stumpage appraisal parameters that the director approves for use in the recalculation of stumpage rates for that quarter.

3. Woodlot Adjustable Stumpage Rates:

   The stumpage rate for a cutting authority issued for a woodlot that meets the criteria in section 6.1.2(2) shall be adjusted quarterly.

2.4 Correctable Errors

1. In this section, a correctable error means:

    a. an error in transcribing or compiling approved cruise field data or in the application of approved loss factor and taper equations,

    b. an error in a calculation made as part of the appraisal data submission,

    c. an error in transcribing the data from an appraisal data submission or in performing the calculations specified in the manual, or

    d. an error in the calculation or application of published appraisal parameters.

2. Where a person believes that a correctable error has been made in a stumpage determination, that person shall give written notice of the correctable error as follows:

    a. in the case of an appraisal or a reappraisal, the notice shall be given to the regional manager, and in the case of a quarterly adjustment, the notice shall be given to the director, and

    b. the notice shall identify the stumpage determination, the correctable error, and the cause of the correctable error to the extent reasonably possible.

3. The regional manager or the director, upon receipt of the notice shall determine whether or not a correctable error was made.

4. Where the regional manager or the director determines that a correctable error has not been made, the person who determined the stumpage rate or director shall notify the person who gave the notice of the correctable error.

5. Where the regional manager or the director determines that a correctable error has been made, then:

    a. the regional manager or the director will notify the person who gave the notice of the correctable error,

    b. the regional manager or the director will take reasonable steps to ensure that all licensees who may have been affected by the error are informed of the decision, and

    c. i. where the regional manager determines that a correctable error has been made in an appraisal or a reappraisal the cutting authority area shall be reappraised to correct the error by the person who determined the stumpage rate.

        ii. the effective date of the reappraisal shall be the first day of the month following the date on which the notice of the correctable error was received

by the regional manager.

d. i. where the director has determined that a correctable error has been made in the calculation of a quarterly stumpage adjustment, the adjustment must be correctly recalculated unless the cutting authority, the appraisal manual or the application and tender for a timber sale licence specifies that the stumpage rate is fixed, and

ii. the effective date of the redetermined rate shall be the first day of the month following the date on which the notice of the correctable error was received by the director.

2.5 Redetermination of Stumpage Rate by Agreement

1. Where, within twenty-one days of the date of a Stumpage Advisory Notice, the person to whom the Notice has been sent and an employee authorized to redetermine a stumpage rate under section 1.2.1 of this manual agree, the stumpage rate set out in the Notice, hereinafter referred to as the original stumpage rate, may be redetermined by the employee in accordance with manual in effect on the effective date of the original stumpage rate, and the redetermined stumpage rate shall be effective on the effective date of the original stumpage rate.

2. The twenty-one day period referred to in subsection (1) of this section may be extended by agreement between the person to whom the Notice has been sent and the employee.

Final Estimated Winning Bid 3

3.1 Appraisal Methodology

1. Except as provided in section 5.1 and chapter 6 of this manual, the licensee must submit an appraisal data submission that is capable of being used by the person who determines the stumpage rate for the cutting authority area in a manner that will produce the highest stumpage rate.

2. Except as provided in section 5.1 and chapter 6, the person who determines the stumpage rate must estimate the stumpage rate for a cutting authority area in a manner that will produce the highest stumpage rate for the cutting authority area.

3. For each part of the cutting authority area, the person who determines the stumpage rate must use the procedures in this manual that must be used for the harvest method that produces the highest stumpage rate other than a method that the district manager states is unsuitable for that part of the cutting authority area.

4. Regardless of the harvest method that the holder of a cutting authority uses or intends to use on the cutting authority area or a part of the cutting authority area, or any other fact or law pertaining to the harvest method to be used, the district manager when deciding whether a harvest method is unsuitable may only consider:

    a. the physical features and terrain stability of the cutting authority area and the areas through which access to the cutting authority area may be gained,

    b. the physical features of the areas outside of the cutting authority area that may be affected by the harvesting in or the transportation of the timber from the cutting authority area,

    c. visual quality objectives.

3.2 MPS Lumber Selling Prices

1. Selling prices for MPS are based on three-month averages of lumber market values reported by licensees and published monthly by Timber Pricing Branch. They are aggregated by zone based on Points of Appraisal in Table 3-4. When the average market values (AMVs) are approved by the director they become an integral part of this manual.

3.2.1 Lumber AMVs

1. Unless otherwise specified in this section, the species lumber AMVs are based on a three month average of lumber selling prices two (2) months prior to the date of publication. They are derived by dividing the total sales value by the total sales volume.

2. If there is insufficient data reported the AMVs for a species may be determined using a procedure approved by the director.

3. The volume that is manufactured to Canadian Lumber Standard/American Lumber Standard (CLS/ALS) sizes is reported in foot board measure (fbm). Lumber manufactured in non-CLS/ALS sizes is adjusted to equivalent CLS/ALS sizes. The total volume for each species includes all sizes and grades of rough and dressed lumber in the green and dried state. Also included is finger-jointed lumber and machine stress rated lumber.

4. The total net sales value for each species or species group is reported in Canadian dollars (FOB) mill.

3.2.2 Calculation of the Real Stand Selling Price (RSP)

1. The total lumber selling price (SP) in $\$/m^3$ is determined for each coniferous species using lumber recovery factors (LRF) from the cruise compilation summary, LRF update add-ons and the current applicable lumber AMV for the species and zone.

    a. Zonal LRF update add-ons are found in Table 3-1, by species.

    b. Lumber AMVs as published every month.

    c. Calculation of total species lumber selling price.

        i. If the cruise LRF for Lodgepole pine (LO) has been reduced for Mountain Pine Beetle volume, the reduction must be added back as follows:

            Final LO Cruise LRF = LO Cruise LRF + (LO green attack volume * 3 + LO red attack volume * 33 + LO grey attack volume * 83) ÷ LO pine volume.

        ii. Species Appraisal LRF = Species Cruise LRF + Species LRF update add-on.

        iii. Species SP ($/m3) = Species AMV($/mbm)/1000 * Species Appraisal LRF.

d. The stand SP is the volume-prorated sum of the species SP.

e. The real stand SP (RSP) is the stand SP divided by the CPIF, as defined in section 3.3.

Table 3-1 LRF Update Add-ons for MPS

Species	**Zone 5** (Northern Interior)	**Zone 6** (Skeena)	**Zone 7** (Southern Interior)	**Zone 8** (Southern Cariboo)	**Zone 9** (Ft. Nelson-Peace)
Lodgepole Pine	107	81	89	94	92
Spruce	128	107	113	115	110
Balsam	120	101	102	108	101
Douglas Fir	97	-	76	84	-
Larch	93	-	76	84	-
Cedar	72	52	58	60	-
Hemlock	74	55	61	65	-
White Pine	91	-	74	80	-
Yellow Pine	-	-	77	88	-

3.3 Estimated Winning Bid Variables

Where volume data is used in the calculation of the variable that calculation must include the total net deciduous volume unless otherwise indicated in the description of that variable below.

RSP = Real Stand Selling Price for coniferous species ($/m^3). See section 3.2.

PC = Fraction of harvest method volume that is appraised as partial cut. PC = (100 – CAPCUT %)/100. See section 4.5 for definition of CAPCUT %. The 80% limit in the definition of CAPCUT in section 4.5 does not apply.

VOL = Total net coniferous volume (m^3).

a. If the cutting authority being appraised is a BCTS licence, use the total net coniferous volume from the cutting authority area cruise compilation.

b. If the cutting authority being appraised is issued under a licence indicated in the small volume table and procedures approved by the Director, the initial small volume (ISV) is the greater of:

i. The volume of the cutting authority being appraised, or
ii. The volume indicated in the table and procedures approved by the director for the licence under which the cutting authority being appraised has been issued.

If the ISV is less than the applicable zonal volume indicated in Table 3-3 for the cutting authority being appraised, then use the ISV. If not, use the Zonal volume from Table 3-3. Otherwise,

c. Use the applicable zonal volume from table 3-3 for the cutting authority being appraised.

CABLE = Fraction of total harvest method volume that is appraised as overhead cable yarding (includes Skyline < 600m horizontal)

HELI = Fraction of total harvest method volume that is appraised as helicopter yarding.

FIRE = Fraction of total net coniferous volume that is fire damaged.

CYCLE	=	Hauling round trip cycle time (Primary CT (hrs) + Secondary CT (hrs)). See sections 3.5.1.1 and 3.5.1.3.
HEMBAL	=	Fraction of total net coniferous volume that is hemlock and balsam.
CEDAR	=	Fraction of total net coniferous volume that is cedar.
VPT	=	Cutting permit average volume per tree from cruise (m^3).
SLOPE	=	Cutting permit average slope from cruise (%).
DANB	=	Average number of bidders by district from the auction dataset (see Table 3-2).
DECAY	=	Prorated coniferous species decay % (from cruise)/100.
CEDAR DECAY	=	Cedar decay % (from cruise)/100
ZONE 6	=	Skeena selling price zone variable. Zone 6 = 1 if cutting authority is appraised with selling price zone 6, otherwise zone 6 = 0.
ZONE 9	=	Fort Nelson - Peace selling price zone variable. Zone 9 = 1 if cutting authority is appraised with selling price zone 9, otherwise Zone 9 = 0.
VPH_CON	=	Net coniferous volume per hectare (m^3/ha).
OTHER ATTACK	=	Fraction of total net coniferous cruise volume that is other insect attack (not green, red, or grey mountain pine beetle attack).
CB	=	Cruise based billing for mountain pine beetle damage variable. CB = 1 if section 6.9 is applicable, otherwise CB = 0.
AUC2011	=	2011 Auctions variable. AUC2011 = 1.
HWY	=	1 if primary haul method is Highway, otherwise HWY = 0.
ER	=	Exchange Rate ($US per $C). Bank of Canada three-month average rate beginning five months prior to the stumpage rate effective date, as published by Timber Pricing Branch.
CD	=	Competitive Deciduous Equals 1 if the upset stumpage rate is determined under section 5.1.1(5), otherwise CD = 0.
DECID	=	Fraction of deciduous volume of total net cruise volume.
CPI	=	Monthly B.C. Consumer Price Index (CANSIM 326-0020, 2002 = 100) x 1.1787.

CPIF	=	Consumer Price Index Factor calculated as CPI/109.3.
FIR	=	Fraction of total net coniferous volume that is Douglas Fir.
DRY BELT	=	Fraction of area in Dry Belt Douglas Fir Zones as per the definition in the *Cruising Manual*.

Table 3-2 District Average Number of Bidders (DANB)[1]

Forest District	DANB	Forest District	DANB
100 Mile House	4.0	Kootenay Lake	2.4
Arrow Boundary	2.3	Mackenzie	1.7
Cascades	3.9	Nadina	3.4
Central Cariboo	4.4	Okanagan Shuswap	3.4
Chilcotin	3.0	Peace	1.7
Columbia	2.5	Prince George	3.5
Fort Nelson	1.0	Quesnel	4.3
Fort St. James	2.1	Rocky Mountain	2.2
Headwaters	2.6	Skeena Stikine	3.2
Kalum	1.9	Vanderhoof	2.0
Kamloops	3.7		

Table 3-3 Zonal Volume[2]

Zone	Volume (m^3)
5	64945
6	41209
7 OK	50971
7 SE	43154
8	62532
9	34566

[1] From the 5-year auction dataset.

[2] For the purposes of applying the volume variable in the estimated winning bid equation determine the applicable selling price (SP) zone based on the POA from Table 3-4 used in the appraisal. If in SP zone 7, then determine the district. Zone 7 is split into 2 components:

7OK = Cascades Forest District, Kamloops Forest District, Okanagan Shuswap Forest District, 100 Mile House Forest District.

7SE = Headwaters Forest District, Columbia Forest District, Prince George Forest District, Central Cariboo Forest District, Quesnel Forest District, Arrow Boundary Forest District, Rocky Mountain Forest District, Kootenay Lake Forest District.

3.4 Estimated Winning Bid Equation

Using the variables defined in section 3.3, the selling price calculated in section 3.2.2 and the equation below, calculate the estimated winning bid (EWB).

EWB ($/m^3) = [22.23 + 0.157 * RSP – 3.35 * PC + 1.12 * ln (VOL/1000) – 8.32 * CABLE – 62.79 * HELI – 12.56 * FIRE – 1.39 * CYCLE – 11.92 * HEMBAL + 37.39 * CEDAR * (1 – CEDAR DECAY) * (1 – ZONE6) – 9.20 * FIR * DRY BELT – 0.0376 * SLOPE + 1.046 * DANB – 16.70* DECAY – 5.60 * ZONE9 – 4.07 * AUC2011 + 6.03 * ln (VPT) + 0.494 * HWY – 11.01 * ER – 8.59 * CD * DECID + 1.76 * ln (VPH_CON) – 5.83 * [OTHER ATTACK * (1 - CB)] – 5.42 * CB] * CPIF

If EWB less than $0.25/m^3 then EWB = $0.25/m^3

Note: ln = natural logarithm.

3.5 Log Transportation

The log transportation phase covers all aspects of log movement from the place of initial loading to the point of appraisal, including truck haul, rail, water and other specialized transportation. The use of section 3.5.1.1(3)(c) does not affect any other provision that requires the use of the point of appraisal, as per section 3.5.2.

3.5.1 Cycle Time Variables

3.5.1.1 Primary Cycle Time (CT):

1. The cycle consists of loading, hauling, weighing, unloading, return time, and unavoidable delays. The cycle time will normally be determined by taking into consideration all the factors that may affect it: distance, expected rate of speed, necessary delays, expected standard of roads and their maintenance, traffic density, and seasonal weather conditions.

2. If a district has developed standard cycle time schedules from specific road junctions to the point of appraisal, the person who determines the stumpage rate must use these schedules to calculate the Primary Cycle Time, except to the extent that he or she considers variation necessary to account for sudden and significant changes in road accessibility not reflected in the existing schedules.

3. For appraisal purposes, weighted average Primary Cycle Time (CT) is the estimated time in hours (rounded to the nearest 0.1 hour) for transporting logs from the centre of a cutting authority area to:

    a. the point of appraisal as per section 3.5.2,

    b. the appraisal place of unloading in the case of water or rail transport, or

    c. where the regional manager is satisfied that a transfer of current cutting rights to address a bark beetle infestation will result in:

        i. equal or higher sawlog stumpage rates for the timber to which the current cutting rights are transferred to, when compared to the sawlog stumpage rates for the timber where the current cutting rights are transferred from, and

        ii. an increase in milling consumption of beetle infested timber by the licensee whose current cutting rights are transferred, then the place that would have been the point of appraisal if the timber had been harvested in the area from which the current cutting rights are transferred from.

4. To determine weighted average primary cycle time:

    a. establish the geographical centre point of each cutblock and project a line from this point to the nearest road. The intersection of that line and the nearest road is the junction for the cutblock.

b. from the junction in subparagraph (a), determine the cycle time to the nearest point over which all appraised timber on the cutting authority area must travel on the way to the POA. This will be the common junction.

c. weight the cycle time from the junction for each cutblock by the cutblock volume to determine the average weighted cycle time to the common junction.

d. Determine the cycle time from the common junction to:

i. the point of appraisal as per section 3.5.2,

ii. the appraisal place of unloading,

iii. if the conditions under section 3.5.1.1 (3)(c) are met, then the place that would have been the point of appraisal if the timber had been harvested in the area from which the current cutting rights are transferred from.

5. Unavoidable delays are periods when the truck is on the job but not operating due to unpredictable delays such as; tightening binder chains, minor repairs made by driver, checking and adjusting brakes, minor delays prior to loading and unloading, refuelling, etc. Unavoidable delay time does not include any breakdown which requires shop repair, the services of a skilled mechanic, or a spilled load of logs. The time for load, unload and unavoidable delay is set at 75 minutes for cable yarding systems and 60 minutes for all other systems.

6. Total CT is the sum of the times calculated under subsections 4(c), 4(d) and 5.

3.5.1.2 Haul Method

Cost estimates do not recognize different types of logging trucks. The estimate is based upon the possible haul method, either highway or off-highway and not specifically on the licensee's particular method.

Highway hauling is assumed when loaded logging trucks must travel in part over roads administered under the *Highway Act*, without truck-to-truck transfer, to the point of appraisal, or on roads administered under the *Industrial Road Act* and Forest Service Roads as defined in *Forest Act* where prolonged known road restrictions prevent the use of oversize loads.

Off-highway hauling is assumed when loaded logging trucks can travel over roads administered under the *Industrial Road Act* and Forest Service Roads as defined in *Forest Act* to the point of appraisal, or to a recognized reload. Where prolonged known restrictions (e.g., bridge load limit, narrow road, through rock cut, Regulations under the *Workers Compensation Act*, etc.) prevent the use of oversize loads, highway haul is assumed.

3.5.1.3 Secondary Haul

Secondary haul is when logs must be truck hauled between the dewater and reload site to the appraisal point.

3.5.2 Point of Appraisal

1. The points of appraisal that may be considered for use in the appraisal are set out in Table 3-4.

2. The point of appraisal that when used in the calculation of the stumpage rate will produce the highest stumpage rate for the cutting authority area is the point of appraisal used unless:

    a. five years have passed from the date that a milling facility was permanently rendered incapable of producing lumber and chips, and

    b. it was the only milling facility associated with that point of appraisal.

3. Where a point of appraisal cannot be selected under subsection (2) of this section because of the conditions of paragraphs (a) and (b) of that subsection, the point of appraisal that produces the next highest stumpage rate is used.

4. The process in subsection (3) of this section is continued until a point of appraisal can be selected without being excluded by the conditions of paragraphs (2)(a) and (b).

5. Except for Table 3-3, the selling price zone in Table 3-4 for the point of appraisal selected under paragraphs (2), (3) or (4) must be used in the appraisal.

Table 3-4 Points of Appraisal

Northern Interior (Zone 5)			
Bear Lake	Fort St. James	Mackenzie	Smithers
Burns Lake	Fraser Lake	Prince George	Strathnaver
Clear Lake	Houston	Quesnel	Vanderhoof
Engen	Isle Pierre		

Skeena (Zone 6)		
Terrace	Hazelton	Kitwanga

Southern Interior (Zone 7)			
Adams Lake	Galloway	Merritt	Thrums
Armstrong	Grand Forks	Midway	Valemount
Canal Flats	Kamloops	Okanagan Falls	Vavenby
Canoe	Kelowna	Princeton	Westbank
Castlegar	Lavington	Radium	Ymir
Craigellachie	Lumby	Revelstoke	
Creston	McBride	Slocan	
Elko			

South Cariboo (Zone 8)				
100 Mile House	Chasm	Lytton	Squamish	Williams Lake

Fort Nelson - Peace (Zone 9)	
Chetwynd	Fort St. John

6. The following Points of Appraisal will expire on the dates indicated: Okanagan Falls (November 30, 2012), Kamloops (May 12, 2013), Clear Lake (April 30, 2016).

3.6 Specified Operations

1. Only the specified operations described in sections 3.6.1 to 3.6.6 may be considered in an appraisal or reappraisal.

2. Where appropriate, specified operations are weighted according to the applicable net cruise volume.

3. Before a specified operation is used in an appraisal it must be approved by the person who determines the stumpage rate and the supporting information must be made available upon request.

3.6.1 Water Transportation

Water transportation occurs when logs must be transported by water between the cutting authority and the point of appraisal or reload. This includes the costs of strapping logs on the truck, dumping, booming, developing and operating dumping and booming grounds, and towing. The specified operation for reservoir lakes applies to all marine appraisals and to Arrow, Kinbasket, Ootsa, Revelstoke and Williston Lakes. All other lakes receive the natural lake specified operation.

1. Dump and Boom:

   Reservoir Lakes and Marine: = $2.01/m^3$

   Natural Lakes: = $2.01/m^3$

2. Tow:

   All = $1.31/m^3$

3. Dewater and Reload:

   All = $1.36/m^3$

   Only considered if the mill infeed is not located on the same lake, or a dam transfer is required.

3.6.2 Special Transportation Systems

A special transportation system specified operation may be used in the appraisal where geographic conditions dictate its use.

The cost estimates include all costs associated with servicing the appropriate cutting authorities, (excluding all on-site costs of owning and operating a camp facility) and operation of bubble systems where applicable.

The recognized special transportation systems are as follows:

1. Railway

    a. Truck-to-Rail Transfer

    When logs are appraised by railway for part of the way between the cutting authority and the point of appraisal, the cost estimate for the truck-to-rail transfer part of the phase is:

    All = $1.36/m^3$

    b. Railway Transportation

    The railway transportation cost estimate is based on the following table for the points of origin shown. Otherwise, the best information on hand is used.

Table 3-5 Rail Log Transportation

Origin	Cost Estimate	Point of Appraisal
Leo Creek	$\$13.18/m^3$	Fort St. James
Lovell	$\$17.31/m^3$	Fort St. James
Bear Lake	$\$24.27/m^3$	Fort St. James
Minaret Creek	$\$26.66/m^3$	Fort St. James
Niteal	$\$23.23/m^3$	Fort St. John

2. Barge/Ferry Used for Truck Haul (Private)

   When a truck haul road is interrupted by a body of water and the operation of a barge/ferry system is the most efficient means to provide a transportation link to harvesting areas, the specified operation for this phase, regardless of ownership is:

   All lakes = $5.76/m^3$

3. Barge/Ferry Not Used for Truck Haul (Private)

   When a cutting authority can be served only by water, and daily (operating days only) ferry/barge services are feasible for crew transportation, the specified operation for this phase, regardless of ownership is:

   All lakes = $1.29/m^3$

3.6.3 Camp Costs

1. A camp specified operation may be included in an appraisal if all of the criteria in this section are met for the cutting authority area being appraised.
2. Workers, who work on the cutting authority area, will reside in the camp and travel each day of work during timber harvesting and hauling operations from the camp to the cutting authority area.
3. The licensee submitting the appraisal must incur the following:
   a. Costs to establish the camp either through capital expenditure or through long term lease arrangements, and
   b. Costs to operate and maintain the camp.
4. The camp must:
   a. Be comprised of buildings or structures of a permanent or semi-permanent nature,
   b. Have a cookhouse(s) and a bunkhouse(s),
   c. Have full time camp staff, and
   d. Be located outside of a support centre listed in Table 3-6.

Table 3-6 Support Centres

Northern Interior Forest Region

Burns Lake	Kitwanga	Smithers	Terrace
Houston	New Hazelton	Stewart	Prince George
Kitimat	Fort St. James	Fraser Lake	Fort St. John
Chetwynd	Fort Nelson	Mackenzie	Dawson Creek
Vanderhoof			

Southern Interior Forest Region

Boston Bar	Kamloops	Merritt	Salmon Arm
Clearwater	Kelowna	Pemberton	Vernon
Hope	Lillooet	Penticton	Nakusp
Canal Flats	Creston	Grand Forks	Nelson
Castlegar	Fernie	Greenwood	Revelstoke
Cranbrook	Golden	Invermere	100 Mile House
McBride	Valemount	Princeton	Quesnel
Williams Lake			

5. Where two licensees share the costs referred to in paragraph three and four of this section for a single camp:

   a. There is a written agreement between the two licensees documenting the cost sharing arrangement and specifying each party's contribution,

   b. One of the two licensees does not contribute more than 60% of the costs, and

   c. Each licensee compiles a statement of costs net of recoveries and volume attributable to its harvesting operations serviced by the camp.

6. Where a cutting authority area serviced by a camp may be accessed only by rail, the camp specified operation is $\$2.50/m^3$, otherwise the specified operation is $\$1.33/m^3$for all other types of access.

3.6.4 Skyline and Intermediate Support Skyline

1. Except as provided in paragraph 4 of this section, a skyline specified operation cost estimate may be included in an appraisal for each cut block where the average yarding distance (slope) is greater than 300 meters, or intermediate supports are used.

2. The average yarding distance is determined by:
   a. Drawing a series of transects (minimum four) with their origin at a tower landing, being equi-angle apart and measured to the back-line. This is done for each block; blocks will not be amalgamated for the purpose of average yarding distance calculation. The volume for the system is the sum of the volumes of qualifying blocks.

   b. Yarding distance will be measured as slope distance from the centre of the tower landing to the falling boundary.

   c. The sum of transect lengths divided by the number of transects equals the average yarding distance.

3. Where the ministry and the licensee agree that Forest and Land Management is better served by the use of a "skyline system" in a particular logging chance, then the average yarding distance greater than 300 meters requirement is waived.

4. Cut blocks where the average yarding distance is 600 meters or greater (measured horizontally) will be considered as helicopter in the appraisal.

5. The specified operation is $\$1.39/m^3$ for the volume appraised as skyline.

3.6.5 Horse Logging

The specified operation is $\$8.67/m^3$ for the volume appraised as horse logging.

3.6.6 High Development Cost

For BCTS timber sale licences only, where the development cost estimate (DC) determined under chapter 4, is greater than $\$3.09/m^3$, the high development cost specified operations estimate (HDC) is calculated as follows:

HDC $\$/m^3$ = DC – 1.29

If DC < = 3.09, HDC = 0

3.7 Final Estimated Winning Bid

1. Subject to subsection (3) of this section, the Final Estimated Winning Bid (FEWB) is the difference between the estimated winning bid and the total of the specified operations that are applicable to the appraisal or reappraisal of the cutting authority area.

2. Expressed as an equation:

$$FEWB = EWB - (SO \times (CPI \div 133.3))$$

Where:

EWB = The Estimated Winning Bid determined under section 3.4.

SO = The sum of the applicable specified operations in the appraisal or a reappraisal of a cutting authority area as may be calculated under section 3.6 expressed in $\$/m^3$.

CPI = Monthly BC Consumer Price Index (refer to section 3.3).

3. Where the FEWB calculated under subsection 2 of this section is less than $\$0.25/m^3$, then the FEWB shall be $\$0.25/m^3$.

This page is intentionally left blank.

Tenure Obligation Adjustments 4

4.1 Tenure Obligation Adjustment (TOA)

1. Except where a cutting authority area is the area authorized for harvest under a timber sale licence entered into under section 20 of the *Act* or section 21 as it was before it was repealed, and subject to subsection (2) of this section, the types of costs that may be used in the calculation of the tenure obligation adjustment in the appraisal or reappraisal of a cutting authority area are:

    a. the final forest management administration cost,

    b. the total development cost,

    c. the final total road management cost, and

    d. the total silviculture cost.

2. A cost referred to in subsection 1 of this section may only be used in the appraisal or reappraisal of a cutting authority area if:

    a. The holder of the cutting authority authorizing harvesting on the cutting authority area will incur that kind of cost:

        i. when exercising an authority or carrying out an obligation under the cutting authority, or

        ii. subject to section 4.3, when carrying out an activity on a road when acting under the authority of the Crown, a road permit holder, a road use permit holder, or a private road owner.

3. In this chapter:

    a. “development” means road development, cattleguards, fencing and pipeline crossings.

    b. "road" includes a bridge, drainage and any other pertinent structure that is part of the road.

4. The tenure obligation adjustment is calculated under section 4.9.

4.2 Administration Costs

4.2.1 Forest Management Administration (FMA)

Forest management administration costs are those costs directly related to supervision and administration of the activities listed below:

- Office Operations,
- Scaling,
- Cruising,
- Environmental Protection,
- Consultants fees (section 4.3.3),
- Archaeological surveys,
- Waste and Residue surveys,
- Right-of-way easements,
- Foreshore and other land leases,
- Tree marking Beetle probing & Pheromone baiting,
- Engineering (road layout, survey including geotechnical surveys, and design, other than those applicable as engineered cost estimate).
- Suitable Secondary Stand Structure Survey.

The forest management administration cost estimate in an appraisal is determined as follows:

$$FMA (\$/m^3) = 0.8748 + (0.2318 \times CP\ slope\ \%)$$

Where:

CP Slope % - is the cutting permit average slope from the Cruise Appraisal Summary Report.

There is a minimum value of $\$1.20/m^3$ for this equation and a maximum value of $\$14.19/m^3$.

4.2.2 Final Forest Management Administration (FFMA)

1. For cruise based cutting authorities:

$$FFMA (\$/m^3) = FMA (\$/m^3)$$

2. For scale based cutting authorities:

$$FFMA (\$/m^3) = FMA (\$/m^3) * \frac{[TNCV (m^3) + D(m^3)]}{TNCV(m^3)}$$

Where:

TNCV = Total net coniferous volume from the cruise

D = Total net deciduous volume from the cruise

4.3 Development

1. The total development cost estimate in an appraisal or reappraisal must be determined in accordance with and subject to the conditions of this section.

2. There are two categories of development, namely:

   a. New construction projects.

   b. Reconstruction and replacement projects.

3. A development cost estimate that may be calculated under this section is calculated for each road, bridge or other drainage structure that is required to be newly constructed, reconstructed or replaced by the licensee on Crown land, or as provided in section 4.3.1.2, in order for the licensee to access Crown timber that it is authorized to harvest.

4. The total development cost estimate is the total of all of the development cost estimates that are calculated under subsection 3 in accordance with the procedures in the document titled "*Specifications: the Interior Market Pricing System.*"

5. The two methods of estimating development costs are as follows:

   a. Tabular cost estimate: A tabular cost estimate is made in accordance with sections 4.3.2 through 4.3.2.6 when the project is a new construction project, other than a situation listed in section 4.3.3(7).

   b. Detailed engineering cost estimate (ECE): an ECE is made in accordance with sections 4.3.3 and 4.3.3.1 when:

      i. a new construction project is a situation listed in section 4.3.3(7), or,

      ii. the project is a reconstruction or replacement project.

6. Subject to section 4.3.1.4 and to subsection 12 of this section, the development cost estimate of a project, or the licensee's share of the cost of a project, that has been authorized may only be used in the appraisal or reappraisal of the licensee's first fully appraised tributary cutting authority area that is authorized for harvest by the licence under which or because of which that authorization has been given.

7. A development cost allocation made in accordance with section 4.3.1 applies to all development cost estimates made under this section.

8. Where a licensee undertakes a new construction project or a reconstruction or replacement project using materials that it has either purchased from a person who is not at arm's length from the licensee or that it has previously used at another location, the cost estimate of the project may only include the cost of:

a. dismantling the materials at the site where they were previously used,

b. transporting the materials to the project location, and

c. installing the materials at the project location.

9. No development costs for a project may be included in an appraisal or reappraisal where they have been paid for by another party, including the provincial or federal government.

10. Where a road that is administered by the Ministry of Transportation and Infrastructure requires reconstruction or an upgrade in order to be used for the hauling of Crown timber, the cost of the project may not be used in an appraisal or reappraisal unless:

    a. the use of the cost of that project has received prior approval from the director of Timber Pricing Branch, and

    b. it is based on competitive bids from persons operating at arm's length from the licensee that undertakes the project.

11. Where the cost of an authorized project is shared by two or more licensees, a licensee's share of the total development cost estimate may be apportioned in accordance with section 4.3.1.4.

12. Where a reconstruction and replacement project was not planned at the time of the appraisal of the first cutting authority area and was not used in either the appraisal or reappraisal of that cutting authority area, the cost estimate of that project may be used in the appraisal of the tributary cutting authority area from which harvested timber is the first to be transported over that project.

13. The development cost estimate for a reconstruction or replacement project may not exceed the development cost estimate that would have been made if the project had been a new construction project at that same location.

14. No cost may be considered in an appraisal or reappraisal if the cost was as a result of the licensee's negligence, or failure to comply with legislation.

4.3.1 Development Cost Allocation

Where proration is required for section 4.3.1.1 and 4.3.1.2:

$$\text{Crown Share} = \text{Total Estimated Cost} * \frac{\text{Appraised Timber Volume}}{\text{Total Timber Volume}}$$

Where:

Crown Share ($)	=	Dollar amount to be allocated to stumpage-bearing timber in the cutting authority being appraised.
Total Estimated Cost ($)	=	Dollar amount of the total development cost estimate.
Appraised Timber Volume (m^3)	=	Volume of Crown timber that is tributary to the project and under the control of the licensee or a company legally associated with the licensee, including volume in all areas contributing to the allowable annual cut determination.
Total Timber Volume (m^3)	=	Total volume of Crown and private timber that is tributary to the project and under the control of the licensee or a company legally associated with the licensee.

In all cases volumes are estimated from the latest approved operational or inventory cruise data and maps of the area within the drainage to the height of land.

The Crown share is a dollar amount which is included in the appraisal of a tributary cutting authority, subject to section 4.3.1.4.

Development cost estimate is allocated according to the outline below (see also Appendix II).

4.3.1.1 Development Cost Estimates on Crown Lands

1. Development providing access to appraised timber only:

   Total estimated costs are included in the appraisal.

2. Development providing access to non-appraised timber or non-timber resources only:

   Cost estimates are not included in the appraisal.

3. Development in appraised timber areas that provide access to both the appraised timber and non-appraised timber or non-timber resources in a tenure held by the licensee or company legally associated with the licensee:

   All cost estimates are prorated between appraised timber and non-appraised timber or non-timber resources as determined by the person who determines the stumpage rate. The appraised timber portion is then included in the appraisal.

4.3.1.2 Development Cost Estimates on Private Land

1. When a new or reconstructed road or structure on private land is required for Crown timber extraction, the estimated cost of the road or structure will be included in the appraisal of a tributary cutting authority according to the procedures of section 4.3.1 and the following:

   a. If development provides access to appraised timber only, the total estimated costs are included in the appraisal.

   b. If development provides access to non-appraised timber only, cost estimates are not included in any appraisal.

   c. If development provides access to both non-appraised and appraised timber, all cost estimates are prorated between non-appraised and appraised timber (section 4.3.1) and then the Crown portion is included in the appraisal.

4.3.1.3 Existing Roads and Structures

1. The following are defined as existing roads for the cutting authority being appraised and are not eligible for inclusion in development cost estimates:

   a. Constructed roads that have been previously considered in appraisals of Crown timber within another cutting authority.

   b. Roads previously constructed and used to haul non-appraised timber (excluding right-of-way).

   c. Roads previously constructed all or in part for purposes unrelated to logging the cutting authority area being appraised.

   d. Roads previously constructed, repaired or reconstructed on private land before August 1, 1996.

2. Winter roads over muskeg or organic soils that use snow and ice for a driving surface are not considered as existing roads.

3. If the existing road requires reconstruction or replacement after August 1, 1996, the cost estimate is made as described in section 4.3. If the existing road is on private land, road and land use charges may be included in the appraisal as per section 4.4.1.

4. A road on private land that has previously been included in an appraisal because it was required for only short term timber extraction shall continue to be included upon reappraisal.

4.3.1.4 Amortization Agreements

1. Where the development cost estimate for an authorized project in respect of a road or roads accessing more than one tributary cutting authority exceeds $4.00 per cubic metre, the regional manager may enter into a written agreement with the licensee which authorizes the distribution of that portion of the development cost estimate that the person who determines the stumpage rate determines is required in order to access future tributary timber, between or among, as the case may be, two or more tributary cutting authorities that are issued under the licence under which or because of which the authorization for the project was given.

2. An agreement under subsection (1) is subject to the following conditions:

    a. For the purposes of this section, "authorized project" means a project that the person who determines the stumpage rate has accepted as consistent with this manual.

    b. Previously apportioned costs may not be used to exceed the $4.00 per cubic metre threshold specified in subsection (1) of this section.

    c. The agreement must identify any future tributary timber included in the agreement by a unique identifier for each future cutting authority along with the costs being apportioned to each cutting authority identified in the agreement.

    d. Costs for in-block development are not eligible for inclusion in the agreement unless the person who determines the stumpage rate is satisfied that they are required to access future tributary timber.

    e. The road portion that may be included in the agreement ends at the far boundary of the first cutting authority being appraised.

    f. The agreement is entered into only for the purposes of calculating a stumpage rate and confers no obligation on the Crown to compensate the licensee for any unamortized costs.

    g. The agreement must be signed by the licensee and the regional manager.

3. The regional manager will not enter into any new extended road amortization agreements for cutting permits issued under a woodlot licence with an effective date after November 30, 2008.

4.3.2 Tabular Cost Estimates

Tabular costs are determined using the procedures and criteria in this section for the total length of road that the submitting professional certifies is required to remove the timber from the cutting authority area.

4.3.2.1 Subgrade Construction

The subgrade construction cost estimate includes:

- clearing,
- grubbing,
- stripping,
- debris disposal,
- stump removal,
- ditch construction,
- turnout construction (not landings),
- material costs, and
- installation of culverts with diameters under 950 mm or the equivalent cross-section area or single log abutment culverts up to 3.4 m span.

Right-of-way felling and logging is excluded.

4.3.2.2 Subgrade Construction Variables

For appraisal purposes the following subgrade construction variables are recognized:

1. Section length: (L)

    a. Each section should be representative of a single moisture class. Section lengths are recorded to the nearest 0.1 km. Each section should be 1 km or longer, although some individual section lengths less than 1 km but greater than or equal to 0.100 km are acceptable for extreme variations of slope or % rock. The section length includes that portion traversing through landings.

    b. All road segments less than 0.100 km, are to be aggregated with other adjacent road segments, making appropriate adjustments to average site conditions using the distance-weighted averages for the site variables for that section.

    c. A short spur road less than 0.100 km that does not access a single landing may be aggregated with a similar stand-alone non-adjacent road section.

2. Road Types :

   - Snow/Ice Road : - A snow/ice road is a single lane seasonal winter road including turnouts, with a flat road profile that is built with a combination of snow, ice and dirt, on a surface that may or may not have been stumped. The driving surface is built up using multiple layers of snow and ice such that extra stabilizing material costs are not applicable. A flat road profile means the side slope is less than or equal to 15% and there is minimal side cut. Minimal means that cuts into mineral or organic soil must not exceed 0.5 m in depth for distances up to 0.1 km. Seismic lines being used for roads, that have not previously been used as roads, will be considered as new construction and qualify as snow/ice roads provided they fall within the above criteria.

   - Long Term (LT) - A long term road is a road with a continuous raised sub-grade and ditch line (the raised sub-grade and ditch line may be interrupted for short section <100 m in length (e.g., when crossing a short section of rock or at the crest of a hill). In flat terrain the ditch line may simply be the depression created when sub-grade material is excavated to create a raised sub-grade.

   - Short Term (S) - A short term road is a road with the stumps removed and a bladed running surface. There may be elements of ditching and elevated grade, particularly around wet areas but these features are not continuous.

3. Uphill Side Slope: (SLOPE %)

   Uphill side slope % may show a variation of (+/- 15% about the average) within any section length and represents the average of all slopes in the section to a maximum of 50%. To derive an average for uphill side slope %, several representative cross-section measurements are taken along the section length and the sum of one-half of the distance on each side of the measurement is applied as a weight against the measurement at that cross-section. The uphill side slope % is measured at right angles to the road centreline and is recorded to the nearest integer. Where the road is located on a bench, the uphill side slope of the bench is used.

4. Percent Rock: (ROCK %)

Rock includes bedrock and large boulders (each greater than 1.5m in diameter). It may be rippable or may require drilling and blasting. Rock % may show a variation (+/- 15% about the average) within any section length and represents the average of all rock % in the section to a maximum of 50%. To derive an average % rock, representative cross-section measurements are taken along the section length and the % rock calculated. The sum of one-half of the distance on each side of where the measurements were taken is applied as a weight against the % rock calculated at that cross-section. The percent rock is determined as follows:

$$\text{ROCK \%} = \frac{h^2}{H^2} * 100$$

Where:

h = the vertical cut height of all rock measured from the bottom of the ditch.

H = the total vertical cut height of all materials above the bottom of the ditch.

To determine the percent rock for roads not yet constructed, constructed roads on similar land/rock forms are used as a guide. Alternately, where estimates of rock volume from commercial road design programs are available for tabular sections, that information may be used to estimate the rock %.

5. Soil Moisture Regime (SMR):

Those biogeoclimatic zones/subzones with site series identified as “M”, “VM” or “W” in the dark shaded area of the table in Appendix III are considered “Wet” for appraisal purposes. The zones/subzones with site series identified as “SD” and “F” in the light shaded area are considered “Moist”. Those zones/subzones with the site series identified as “ED”, “VD”, “MD” in the unshaded area are considered “DRY”.

6. Biogeoclimatic Zone Abbreviations Used in This Chapter

SBS	-	Sub-Boreal Spruce
ESSF	-	Engelmann Spruce Subalpine Fir
IDF	-	Interior Douglas Fir
MS	-	Montane Spruce

4.3.2.3 Subgrade Cost Estimate

For each road type, except snow/ice roads, the subgrade cost estimate in $/km is determined from the equation for the appropriate road group.

Road Group	Equation
1	Refer to subsection 4.3.3(7)(n)
2	7998 + (110 * SLOPE%)
3	3857 + (75 * SLOPE%) + (1911 * LT)
4	2862 + (104 * SLOPE%) + (3346 * LT) + (1193 * SBS)
5	4683 + (59 * SLOPE%) + (2464 * LT) – (892 * ESSF)
6	4683 + (59 * SLOPE%) + (2464 * LT) – (892 * ESSF)
7	4737 + (100 * SLOPE%) + (1929 * LT)
8	3870 + (2188 * LT) + (1100 * SBS) - (1255 * IDF)
9	3846 + (82 * SLOPE%) + (130 * ROCK%) + (7296 * LT) – (1714 * MS)
10	1647 + (234 * SLOPE%) + (7285 * LT)
11	- 18 + (438 * SLOPE%) + (474 * ROCK%) + (14384 * LT) ($5812/km set as minimum. If equation yields less than $5812 then use $5812)
12	3264 + (348 * SLOPE%) + (5154 * LT) ($3283/km set as minimum. If equation yields less than $3283 then use $3283)

Where:

Road groups are defined in Table 4-1.

LT = 1 if a long term road, otherwise = 0

SBS = 1 if road construction is within this biogeoclimatic zone. Otherwise SBS = 0

ESSF = 1 if road construction is within this biogeoclimatic zone. Otherwise ESSF = 0

IDF = 1 if road construction is within this biogeoclimatic zone. Otherwise IDF = 0

MS = 1 if road construction is within this biogeoclimatic zone Otherwise MS = 0

Snow and Ice (Winter) Roads

The subgrade cost estimate for new snow and ice roads is $2870/km.

Table 4-1 Road Groups

Road Group #	Districts Included	Within the Geographic Boundary of a TSA, SB and TFL
1	Kalum	Cascadia TSA Blks 9, 10, 11, Pacific TSA Blk 28A, 28B
2	Skeena Stikine	
3	Nadina	
4		Williams Lake TSA, SBs J, K & L Prince George TSA, SBs G & H, TFLs 30, 53 Quesnel TSA, SBs E, F, G, H & I, TFL52 100 Mile House TSA, SBs, G & H Cascadia TSA Blks 5, 6, 7
5	Vanderhoof	Prince George TSA, SBs C, E, F & I, TFL 5[1], TFL 42, Cascadia TSA Blk 8
6		Mackenzie TSA, SBs G through P, Prince George TSA SB's A & B
7	Peace Fort Nelson	Mackenzie TSA, SBs A through F
8	Chilcotin	Williams Lake TSA, SBs E, F, G, H, and I Quesnel TSA, SBs A, B, C & D 100 Mile House TSA, SBs A, B, C, D, E, F
9	Kamloops Cascades	TFL 15, 49, 59, Okanagan TSA, SBs 1, 2, 3, 4, 5
10	Rocky Mountain	Boundary TSA, TFL 8
11	Columbia Kootenay Lake	Arrow TSA, TFL 23, 3, 33 Okanagan TSA SBs 8, 9 Cascadia TSA Blks 1, 2, 3, 4
12	Headwaters	Williams Lake TSA, SBs M & N Okanagan TSA, SBs 6, 7

Woodlot and Timber Licence cutting authorities are assigned to the road group for the area in which they are geographically located.

[1] Portion of TFL 52 that was within the former TFL5.

4.3.2.4 Drainage Structures

An appraisal may include a cost estimate for large drainage structures only where their requirement is substantiated by field data. All pipe culverts under 950 mm in diameter or the equivalent cross-section area and all single log abutment culverts up to 3.4 m span length are included in the subgrade cost estimates (see section 4.3.2.1).

For a detailed description of large drainage structures see page 37 of the *Forest Road Engineering Guidebook* (June 2002) for a detailed description.

For a detailed description of smaller drainage structures see pages 104 (Pipe Culverts) and 106 (Log Culverts) of the *Forest Road Engineering Guidebook* (June 2002) for detailed description.

An electronic version of the above guidebook can be accessed at:

http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Guidetoc.htm

1. Culverts

   The cost estimates for the supply and installation of culverts from 0.3 m to 1.8 m in diameter are determined from Table 4-2. Culverts smaller than 0.95 m are included in the subgrade cost estimates in section 4.3.2.3.

   Costs for culverts smaller than 0.95 m are included in Table 4-2 for use where a detailed engineering cost estimate in section 4.3.3 requires the use of culverts smaller than 0.95 m. Detailed engineering cost estimates are required for culverts larger than 1.8 m, no interpolation of values is permitted. Total installation cost for culverts includes all costs of transporting the culvert to the jobsite and all costs of installation of the culvert to the final subgrade stage.

Table 4-2 Culvert Appraisal Cost Estimates

INSTALLED CULVERT COST ESTIMATE ($)														
Culvert length (m)	Equivalent Round Diameter													
	0.3	0.4	0.45	0.5	0.6	0.7	0.8	0.9	0.95	1	1.2	1.4	1.6	1.8
	X-Sectional Area (m^2)													
	0.07	0.13	0.16	0.2	0.28	0.38	0.5	0.64	0.71	0.79	1.13	1.54	2.01	2.54
9	533	655	728	811	1002	1228	1488	1783	1944	2113	2877	3780	4822	6003
10	550	685	767	859	1071	1322	1612	1940	2118	2306	3155	4158	5316	6628
11	568	716	807	907	1141	1417	1735	2096	2292	2499	3433	4537	5810	7253
12	585	747	846	956	1210	1511	1859	2252	2466	2692	3711	4915	6304	7878
13	603	778	885	1004	1280	1606	1982	2408	2640	2885	3989	5293	6798	8504
14	620	809	924	1052	1349	1700	2106	2565	2815	3078	4267	5671	7292	9129
15	637	840	963	1100	1419	1795	2229	2721	2989	3271	4544	6049	7786	9754
16	655	871	1002	1149	1488	1889	2353	2877	3163	3464	4822	6428	8280	10379
17	672	902	1041	1197	1558	1984	2476	3034	3337	3657	5100	6806	8774	11004
18	689	932	1080	1245	1627	2079	2599	3190	3511	3850	5378	7184	9268	11629
19	707	963	1119	1293	1696	2173	2723	3346	3685	4043	5656	7562	9762	12254
20	724	994	1158	1341	1766	2268	2846	3502	3859	4236	5934	7940	10256	12880
21	741	1025	1197	1390	1835	2362	2970	3659	4034	4429	6211	8318	10749	13505
22	759	1056	1236	1438	1905	2457	3093	3815	4208	4622	6489	8697	11243	14130
23	776	1087	1275	1486	1974	2551	3217	3971	4382	4814	6767	9075	11737	14755
24	794	1118	1314	1534	2044	2646	3340	4128	4556	5007	7045	9453	12231	15380
25	811	1149	1354	1583	2113	2740	3464	4284	4730	5200	7323	9831	12725	16005
26	828	1179	1393	1631	2183	2835	3587	4440	4904	5393	7601	10209	13219	16630
27	846	1210	1432	1679	2252	2929	3711	4596	5078	5586	7878	10587	13713	17256
28	863	1241	1471	1727	2322	3024	3834	4753	5252	5779	8156	10966	14207	17881
29	880	1272	1510	1776	2391	3119	3958	4909	5427	5972	8434	11344	14701	18506
30	898	1303	1549	1824	2461	3213	4081	5065	5601	6165	8712	11722	15195	19131

2. Bridges

   Cost estimates for both log bridges and non-log bridges, where required and not included in subgrade cost estimates, are made as detailed engineering cost estimates (section 4.3.3).

4.3.2.5 Additional Stabilizing Material

Additional stabilizing material is the placement of gravel or broken rock on the road subgrade to provide stable support and a running surface for logging equipment using the road during the harvesting of tributary timber (see section 4.3.3(7)(l) for cost estimates pertaining to the use of special materials). Where stabilizing material developed during the subgrade or ditch construction is insufficient, a cost estimate for additional stabilizing material to be trucked in from selected borrow pits may be included in the appraisal.

Unit Cost Estimate

The unit cost estimate ($/km) for the additional stabilizing material includes:

- borrow pit preparation,
- rock drilling, explosives, loading of explosives and blasting,
- loosening and/or pushing materials in borrow pits when required (e.g., compacted or cemented gravel, oversize material, etc.),
- loading gravel trucks,
- truck hauling, and
- spreading and compacting the material.

The cost estimates assume borrow pits are located adjacent to the road side and are not part of the subgrade excavation. If a new road needs to be constructed to access the borrow pit, then an access road cost estimate is required in addition to the in-place unit cost estimates.

For each road, the additional stabilizing material cost estimate ($/km) is determined from the equation for the appropriate road group.

Road Groups	Equation
1	Refer to section 4.3.3(7)(n)
2	7771
3	9609
4	5381 + (486 * D)
5	10282
6	10282
7	10282
8	6863
9	6863
10	9533
11	9533
12	9533

Where:

Road groups are defined in Table 4-1.

D = Distance in kilometres from source of ballast to the centre of the section that requires ballast (rounded to the nearest 0.1 km)

No cost estimate for additional stabilizing material is allowed for any snow and ice roads.

4.3.2.6 Cattle Guards, Fencing and Pipeline Crossings

1. Where the installation of cattle guards, remedial fences or wing fences are required to mitigate the impacts to range barriers resulting from harvesting on the cutting authority area, the following cost estimates apply:

a.	Cattle Guards	$5546 each
b.	Remedial Fences and Wing Fences	$830 per 100 m (post and wire, post and rail and/or log snake fence construction only)

2. For pipeline crossings, the following cost estimates apply:

	$4271 per single pipe crossing
	$2570 per pipe in multiple pipe crossings (where 2 or more pipes are crossed within the same right-of-way)

3. The cost estimates for subsections (1) and (2) include materials, transportation and installation.

4.3.3 Detailed Engineering Cost Estimates (ECE)

1. Where the tabular cost estimating procedures of this manual cannot be used due to their physical limitations, the cost of a project shall be estimated by preparing a detailed engineering cost estimate. The regional manager may approve standardized procedures to generate cost estimates for use in projects as listed below.

2. Where specific development projects involve detailed engineering cost estimates, the district manager shall be advised of project details no later than 60 days before the start of work on the project.

3. For appraisal purposes, the estimated development project costs are made on the basis of the site-specific data using the definitions found in section 4.3.2.2 for common subgrade construction variables, the culvert costs included in Table 4-2, and the equipment and labour rates specified in Appendix I from the manual in effect at the time the costs were incurred. Due consideration is given to arm's length competitive bids for any specific project. The Crown is not liable for any difference between the appraisal estimate and the licensee's actual costs.

4. If the ECE is re-estimated once after construction as provided in section 2.2(3) (using more accurate on site information) the new detailed engineering cost estimate replaces the original (used in the initial appraisal). Detailed engineering cost estimates originally estimated using ministry approved competitive bids may be re-estimated once after construction provided the original call to tender included a methodology for adjusting the bid price based on more accurate site information and re-estimation of those costs is performed in accordance with that methodology. ECE's are not re-estimated due to labour and/or equipment rates being updated periodically in Appendix I.

5. Where the actual on–site information is known prior to the appraisal that information shall be used in the ECE as determined by the person who determines the stumpage rate.

6. Where road sections estimated as a detailed engineered cost estimate are contiguous with tabular cost estimates, costs for mobilization and demobilization will only be

allowed for special equipment not required for the construction of the tabular roads. The costs for replacement or addition of stabilizing material must be determined using section 4.3.2.5 unless the material is placed in conjunction with geo fabric, geo grids, corduroy or where the stabilizing material requires processing such as screening or crushing.

7. The following specific situations are considered for detailed engineering cost estimates:

   a. New construction of long term, primary access road sections, that will have 300 000 cubic metres of harvested Crown timber hauled over them annually for at least ten years.

   b. Road construction on uphill side slopes greater than 50%.

   c. When rock percent as calculated in section 4.3.2.2(4) is greater than 50%, or terrain class 4 and 5.

   d. End haul construction (of roads and landings) requiring removal by truck of excavated material to a separate area to avoid side casting on steep and/or sensitive sites.

   e. Overland construction to provide a roadbed by trucking in material for extensive filling; see page 81 of *Forest Road Engineering Guidebook* for a more detailed description.

   f. Log bridges and non-log bridges (including ice bridges) that are not included in the subgrade cost estimates. Eligible costs are described in section 4.3.3(8).

   g. Structural maintenance of bridges, substructure and cribwork.

   h. Reconstruction of roads and pertinent structures. Cost estimates for reconstruction are not to exceed the tabular cost for new construction under similar conditions.

   i. Upgrade of roads and pertinent structures resulting in a change in the standard of the road and structure or where the licensee was not obligated to carry out road maintenance prior to the appraisal. Where road maintenance obligations exist, road upgrade is limited to widening the running surface, vertical and horizontal realignment, and additional culverts.

   j. i. Replacement or addition of stabilizing material to the existing road running surface or where stabilizing material was not previously used, for uninterrupted road lengths of 0.3 km, or greater.

      ii. Road lengths less than 0.3 km are included in the road management cost estimate.

k. Culverts greater than 1.8 m in diameter, or culverts greater than 30 m in length regardless of diameter. The cost estimate includes all costs of transporting the culvert to the jobsite and all costs of installation of the culvert to the final subgrade stage.

l. Placement of additional stabilizing material where geo fabric, corduroy, crushed and/or screened rock/gravel are used.

m. Retaining walls, railway crossings and other structures (such as multiple culverts, baffled culverts, arched culverts and other structures determined by the timber pricing co-ordinator).

n. Subgrade and ballast cost estimate in road group 1, Kalum District. The subgrade and ballast cost estimate will be determined using the detailed engineering cost methodology specified by the Northern Interior Forest Region.

o. The costs of designing and constructing a forwarding road, where the timber pricing co-ordinator is satisfied that it will produce the highest stumpage rate. A forwarding road is not a trail but a road built to a designed standard which includes stripping, grubbing, stumping and primary excavation to establish subgrade that is used for transporting crews and equipment and forwarding timber but not for hauling logs.

8. The data which may be required for excavation and fill estimates are:

   a. Plans, profiles, cross-sections showing the ground and design grade lines.

   b. Volume summary sheets showing excavation quantities by various soil types, for subgrade and stabilization.

   c. Type of construction equipment and quantity of material to be used, or Ministry approved competitive bid costing.

   d. Location of borrow and waste areas to calculate material haul distances.

9. The data required for bridges, culverts and for other structures are:

   a. Where the bridge span is 15.4 m or less and the crib height is 5.4 m or less and a permanent structure is proposed, an economic life cycle comparison between a log structure and the permanent proposal is required.

   b. Where the bridge span is greater than 15.4 m, and/or the crib height is greater than 5.4 m or more and for pipe culverts greater than 1.8 m in diameter or 30 m in length: plans, specifications and design for the proposed structure; detailed estimate of costs of materials; equipment and labour or ministry approved competitive bid pricing; amount of timber accessed by the structure and the number of years of use for harvesting all timber are required.

10. Costs that may be included in the detailed engineered cost estimate are:

    a. Freight (for materials).

    b. Provincial sales tax if applicable (for materials purchased prior to July 1, 2010).

    c. Supervision of construction of complex structures by a professional engineer.

    d. Bridge Costs

        i. In addition to other costs described in this section, bridge costs may include:

            - Crib back fills to a maximum distance of 15 m on either end.
            - Site preparation.
            - Protection features such as rip rap.
            - Material and equipment supply and delivery (subject to paragraphs (ii) and (iii) in this subsection).
            - Bridge certification by a professional engineer either employed by the licensee or contracted. A maximum of three field visits are permitted unless otherwise approved by the regional timber pricing co-ordinator.

        ii. Where bridge materials are re-used by the original purchaser at a different site, the bridge cost estimate may include the cost of dismantling the materials at the site where they were previously used, and transportation to and installation at the different site, but may not include the initial materials and delivery costs.

        iii. Where used bridge materials are purchased by the licensee from a legally non-associated party, only the cost of purchasing and transporting those materials approved by the person determining the stumpage rate may be included in the bridge cost estimate in addition to the costs listed above.

    e. Site plans, designs and layouts.

    f. Where equipment is not, or will not be already on site for adjoining tabular road, bridge or culvert construction, then the costs of mob and demob may be included in the engineered cost estimate.

11. GST/HST and supervision costs other than as stated above, are not to be included in the engineered estimate.

12. Where different timber volumes are used for separate cost estimates, the unit costs are rounded to the nearest cent before totalling.

4.3.3.1 Trending of Detailed Engineering Costs

1. All detailed engineering costs must be adjusted to match the cost base of the manual in effect at the time of the appraisal or reappraisal (refer to Table 4-3). This includes development costs in apportionment agreements, ministry approved competitive bid tenders, and ECE's prepared using Appendix I.

2. ECE Cost Year means:

    a. For ECEs (or portion(s) thereof) which are calculated using this manual, the ECE Cost Year is 2010.

    b. For ECEs (or portions(s) thereof) which are calculated using tenders, materials costs, design and survey costs, etc. the year the costs are based on or incurred is the ECE Cost Year.

    c. Where all components of an ECE have a common ECE Cost Year, the trend factor can be directly determined from Table 4-3.

    d. For new or re-estimated (section 2.2(3)) ECEs where components of an ECE have different ECE Cost Years, it is necessary to trend all components to the Cost Base Year of the manual in effect at the time (based on the effective date of the cutting authority). The Cost Base Year then becomes the ECE Cost Year for future trending.

Table 4-3 Trend Factors for ECE Costs

ECE Cost Year	Multiply by this Trend Factor to Match the 2010 Cost Base
1995	0.925
1996	0.872
1997	0.811
1998	0.856
1999	0.899
2000	0.879
2001	0.894
2002	0.904
2003	0.978
2004	0.978
2005	1.0
2006	1.0
2007	1.0
2008	1.0
2009	1.0
2010	1.0
2011	1.0
2012	1.0

4.4 Road Management

Where the licensee is obliged to carry out road management, activities, the road management cost estimate includes but is not limited to, costs for the following:

- grading
- snowplowing and refreezing
- sanding
- spot gravelling (< 0.3 km distance)
- culvert repairs and thawing
- culvert removal
- culvert replacement
- non-structural maintenance of bridges
- bridge re-decking/wearing surface replacement
- ditching
- cattle guard cleanout
- road use charges paid to other licensees
- all access management
- seasonal erosion control
- roadside treatments
- sign maintenance
- dust control
- brushing
- minor flood and storm damage repair
- slough removal
- water bar construction (seasonal)
- road ripping
- cross ditch construction
- grass seeding
- all deactivation

The cost estimate for all road management carried out on logging operations depends on the geographic location of the cutting authority area (refer to Table 4-4).

Cutting authorities issued under forms of tenure not located administratively within a tree farm licence area or timber supply area will be assigned the road management cost estimate for the TFL or TSA/supply block in which the cutting authority is geographically located.

Table 4-4 Road Management Cost Estimates

Region	TFL #	TSA	TSA #	Supply Block	$/m^3
Northern Interior		Bulkley	3	All	2.53
		Cascadia	45	9, 10 & 11	2.53
		Cassiar	4	All	2.53
		Cranberry	42	All	2.53
		Dawson Creek	41	All	0.32
		Fort Nelson	8	All	0.32
		Fort St. John	40	All	0.32
		Kalum	10	All	2.53
		Kispiox	12	All	2.53
		Lakes	14	All	1.41
		Mackenzie	16	All	1.22
		Morice	20	All	1.41
		Nass	43	All	2.53
		Pacific	44	28-A, 28-B	2.53
		Prince George	24	A, B, C	1.22
		Prince George	24	D	1.38
		Prince George	24	E, F, I	1.41
		Prince George	24	G, H	1.13
	1				2.53
	30				1.13
	41				2.53
	42				1.22
	48				0.32
	53				1.13
Southern Interior		100 Mile House	23	A, B, C, D	0.79
		100 Mile House	23	E, F, G. H	0.94
		Arrow	1	All	1.85
		Boundary	2	C, D, G	1.85
		Boundary	2	E, F	2.01
		Cascadia		5, 6, 7 & 8	1.13
		Cascadia		1, 2, 3 & 4	1.85
		Cranbrook	5	All	1.54
		Golden	7	All	2.95
		Invermere	9	All	1.54
		Kamloops	11	1	1.82
		Kamloops	11	2, 3, 4	0.91
		Kootenay Lake	13	All	2.23

Region	TFL #	TSA	TSA #	Supply Block	$/m^3
Southern Interior		Lillooet	15	All	2.53
		Merritt	18	All	1.07
		Okanagan	22	1, 2, 3	2.01
		Okanagan	22	4, 5, 6, 7	2.01
		Okanagan	22	8, 9	2.95
		Quesnel	26	A, B, C, D	0.49
		Quesnel	26	E, F, G, H, I	1.13
		Revelstoke	27	All	2.95
		Robson Valley	17	All	1.82
		Williams Lake	29	A, B, C, D, E, I	0.79
		Williams Lake	29	F, G, H, J	0.79
		Williams Lake	29	K, L, M, N	0.94
	3				1.85
	5[1]				1.41
	8				2.01
	14				1.54
	15				2.01
	18				1.82
	23				1.85
	33				2.95
	35				0.91
	49				2.01
	52				1.13
	55				2.95
	56				2.95
	59				2.01

[1] That portion of TFL 52 that was within the former TFL5.

4.4.1 Road and Land Use Charges

Prior to a road or land use charge being included in the TOA, the licensee must:

a. submit a "Request for Approval of a Road Use Charge" form with the appraisal data submission; and

b. receive written approval of the road or land use charge from the regional manager.

1. Charges as a Share of Road Management

   a. No recognition is made of such charges. The road management cost estimate in section 4.4 includes all relevant costs whether incurred directly by the licensee or by payment to another party for services performed.

2. Charges Other Than for Road Management

   There are three main categories of road status:

   a. Forest Service Roads

      No road use charges will be included in the TOA for a road that is declared, determined, built, maintained or modified by the provincial government.

   b. Permitted Roads

      No road use charges will be included in the TOA for roads built on Crown land, authorized by road permit or other cutting authority documents. This category also includes foreshore leases, camp areas and dryland sorts.

   c. Other Roads

      Road use charges for roads on Indian Reserves or on private land owned by an arm's length third party and not subject to a lease held by the licensee, their affiliate or an agent of either, may be included in the TOA provided there is no lower cost route capable of development through Crown land.

      The charges recognized must be reasonable, must not exceed compensation that might be determined under forest legislation and must be proven through the presentation of auditable documents.

3. Other Land Use Charges

   Only non-governmental land use charges may be included in the TOA.

4.4.2 Final Road Management (FRM)

The Final Road Management (FRM) cost estimate is determined as follows:

1. For cruise based cutting authorities:

$$FRM\ (\$/m^3) = RM\ (\$/m^3) + RU\ (\$/m^3)$$

2. For scale based cutting authorities:

$$IRM\ (\$/m^3) = \frac{RM\ (\$/m^3) * [TNCV\ (m^3) + D\ (m^3)]}{TNCV\ (m^3)}$$

$$IRU\ (\$/m^3) = \frac{RU\ (\$/m^3) * [TNCV\ (m^3) + D\ (m^3)]}{TNCV\ (m^3)}$$

$$FRM\ (\$/m^3) = IRM\ (\$/m^3) + IRU\ (\$/m^3)$$

Where:

IRM = Interim Road Management cost estimate

IRU = Interim Road and Land Use Charges

RM = Road Management cost estimate from table 4-4

RU = Road and land use charges applicable under section 4.4.1

TNCV = Total Net Coniferous Volume from the cruise

D = Total net deciduous volume from the cruise

4.5 Basic Silviculture Cost Estimate

1. The basic silviculture cost estimate includes the cost of all activities that are required to achieve a licensee's free-growing stand obligations (except root disease control) on the cutting authority area.

    a. A basic silviculture cost estimate may not be included in the TOA unless:

        i. the licensee is obligated to establish a free growing stand, and,

        ii. the activity is not funded by another agency.

2. The area of land where an activity is to be applied that may be considered in the basic silviculture cost estimate is the gross silviculture area (GSA) for which the licensee has an obligation to establish a free-growing stand. The GSA includes the net merchantable area (NMA) from the cruise.

3. Table 4-5 lists the cost estimates ($/ha) for Biogeoclimatic Ecosystem Classification (BEC) zone, subzone, and variant combinations across the interior. Where the subzone/variant combination is not listed in the table, the BEC undifferentiated subzone "un" cost estimate is used.

4. Where a cutting authority area includes more than one BEC zone/subzone/variant combination, a prorated BEC zone/subzone/variant cost estimate will be determined by prorating the cost estimates from Table 4-5 for the primary and secondary BEC combination identified in the appraisal data submission based on their respective % by net merchantable area identified in the appraisal data submission.

5. The basic silviculture cost estimate is calculated as follows:

$$\text{Basic Silviculture } (\$/m^3) = \frac{[NMA * Cost * (CAPCUT\%/100) * 1.25] + [(GSA - NMA) * Cost]}{(TNCV \text{ or } NMV)^1}$$

[1] For scale based CAs, use TNCV. For cruise based CAs use NMV.

Where:

NMA	=	Net merchantable area (ha) from the cruise appraisal summary report. This area must be the same area directly attributable to the appraised net merchantable volume for the cutting authority.
Cost	=	Prorated BECzone/subzone/variant cost ($/ha) from Table 4-5.
TNCV	=	Total Net Coniferous Volume (m^3).

GSA = Gross silviculture area (ha) within the cutting authority area for which the licensee has free-growing obligations and has not yet received a basic silviculture cost estimate in any appraisal. For the purpose of this section the GSA cannot be less than the NMA and includes any pre-harvested areas outside the NMA of a fully appraised cutting permit that the licensee is responsible for silviculture.

NMV = Net merchantable volume (m^3) for the cutting authority area from the cruise appraisal summary report.

PCUT = Partial cutting includes all forms of harvesting, other than clear cutting.

Clear cutting is defined as those areas with block opening sizes equal to or greater than 1 hectare and where the volume removal is equal to or greater than 90% based on the net volume measured to the Interior Standard Timber Merchantability Specifications (section 1.5).

Partial cut areas that have less than 90% volume removal are not to be averaged with those areas that are equal to or greater than 90%. Clear cut areas are to be stratified out before calculating an overall weighted partial cut percent for the cutting authority.

Where a partial cut is comprised of openings of less than 1 hectare in size, the PCUT percent is based on the cumulative volume of these openings divided by the volume of the block area surrounding them.

$$PCUT = \frac{\textit{Net cruise volume required to be removed using a partial cut system}}{\textit{Total net cruise volume on the area where Partial Cutting is required}} * 100$$

(except if partial cut percent > = 90%, then PCUT = 0)

CAPCUT = Cutting Authority (CA) partial cut %. If CAPCUT%>80% CAPCUT% = 80, otherwise:

CAPCUT% = (CA NMV/CA Gross NMV) * 100

CA Gross NMV(m^3) = ^{v}GS(C) + (^{v}GS(P) / GS(PCUT/100)) + ^{v}OC(C) + (^{v}OC(P) / OC(PCUT/100)) + ^{v}SK(C) + ^{v}Horse(C) + ^{v}Heli(C) + (^{v}Heli(P) / Heli(PCUT/100))

Where:

PCUT	=	Logging method PCUT (%)
CAPCUT	=	Cutting Authority (CA) partial cut percent
V	=	Net merchantable volume (m^3) required to be logged by each system
Heli (C)	=	helicopter logging (clear cut)
Heli (P)	=	helicopter logging (partial cut)
Horse(C)	=	horse logging (clear cut)
GS (C)	=	ground skidding (clear cut)
GS (P)	=	ground skidding (partial cut)
OC(C)	=	overhead cable logging (clear cut)
OC(P)	=	overhead cable logging (partial cut)
SK(C)	=	skyline logging (clear cut)

4.5.1 Root Disease Control

1. Costs for root disease control may only be included in the calculation of the TOA when the treatment is required in a Site Plan, is indicated on the appraisal map, or meets the requirements in this manual.

2. The cost estimates are determined on the basis of information at hand using the procedures approved by the region or Timber Pricing Branch.

4.5.2 Total Silviculture Cost Estimate

$$\text{Total Silviculture } (\$/m^3) = \text{Basic Silviculture } (\$/m^3) \frac{+ \text{ Root Disease Control } (\$)}{\text{TNCV or NMV } (m^3)^1}$$

1. For scale based CAs, use TNCV. For cruise based CAs, use NMV.

Table 4-5 BEC Silviculture Cost Estimates*

BEC Zone	Subzone	Variant	$/ha
BWBS	dk	1	1386
BWBS	dk	2	1386
BWBS	mw	1	1148
BWBS	mw	2	1866
BWBS	un		1386
BWBS	vk		1386
BWBS	wk	1	1018
BWBS	wk	2	1172
BWBS	wk	3	1172
CWH	un		595
CWH	vh	1	595
CWH	vh	2	595
CWH	vm		595
CWH	vm	1	595
CWH	vm	2	595
CWH	vm	3	595
CWH	wh	1	595
CWH	wh	2	595
CWH	wm		595
CWH	ws	1	595
CWH	ws	2	595
CWH	xm	1	595
CWH	xm	2	595
ESSF	dc	1	1369
ESSF	dc	2	1156
ESSF	dcp	1	1232
ESSF	dcp	2	1232
ESSF	dk		1090
ESSF	dk	1	1090
ESSF	dk	3	1090
ESSF	dk	4	1090
ESSF	dkp		1232
ESSF	dku		1232
ESSF	dv		1232
ESSF	dvp		1232
ESSF	mc		1042

BEC Zone	Subzone	Variant	$/ha
ESSF	mcp		1232
ESSF	mk		1232
ESSF	mkp		1232
ESSF	mm	1	1232
ESSF	mm	2	1232
ESSF	mmp	1	1232
ESSF	mmp	2	1232
ESSF	mv	1	733
ESSF	mv	2	1123
ESSF	mv	3	941
ESSF	mv	4	1533
ESSF	mvp	1	1232
ESSF	mvp	2	1232
ESSF	mvp	3	1232
ESSF	mvp	4	1232
ESSF	mw		991
ESSF	mwp		1232
ESSF	un		1232
ESSF	vc		3343
ESSF	vc	2	3343
ESSF	vcp		1232
ESSF	vv		1232
ESSF	vvp		1232
ESSF	wc	1	1472
ESSF	wc	2	1789
ESSF	wc	3	1492
ESSF	wc	4	1568
ESSF	wcp	2	1232
ESSF	wcp	3	1232
ESSF	wcp	4	1232
ESSF	wk	1	1404
ESSF	wk	2	1373
ESSF	wm		1425
ESSF	wmp		1232
ESSF	wv		1232
ESSF	wvp		1232

BEC Zone	Subzone	Variant	$/ha
ESSF	xc		988
ESSF	xc	1	988
ESSF	xcp		1232
ESSF	xv	1	1232
ESSF	xv	2	1232
ESSF	xvp	2	1232
ICH	dk		1667
ICH	dm		1667
ICH	dw		2119
ICH	dw	1	2119
ICH	dw	2	1922
ICH	mc	1	1667
ICH	mc	2	1667
ICH	mk	1	1318
ICH	mk	2	1328
ICH	mk	3	1169
ICH	mm		1667
ICH	mw	1	1725
ICH	mw	2	1683
ICH	mw	3	1741
ICH	un		1667
ICH	vc		1667
ICH	vk	1	2963
ICH	vk	2	2812
ICH	wc		1667
ICH	wk	1	2345
ICH	wk	2	1921
ICH	wk	3	1921
ICH	wk	4	1242
ICH	xw		1667
IDF	dk		605
IDF	dk	1	908
IDF	dk	2	992
IDF	dk	3	476
IDF	dk	4	605
IDF	dm	1	1126
IDF	dm	2	758
IDF	dw		661
IDF	mw	1	1569
IDF	mw	2	1438
IDF	un		661
IDF	ww		661

BEC	Subzone	Variant	$/ha
IDF	xh	1	2050
IDF	xh	2	2050
IDF	xh	4	2050
IDF	xm		661
IDF	xw		661
MH	un		1515
MS	dc	1	825
MS	dc	2	825
MS	dk		962
MS	dk	1	962
MS	dk	4	962
MS	dm	1	929
MS	dm	2	1013
MS	dv		825
MS	un		825
MS	xk		832
MS	xk	2	758
MS	xv		337
PP	dh	1	25
PP	dh	2	25
PP	un		25
PP	wh	1	25
PP	xh	2	25
SBPS	dc		944
SBPS	mc		507
SBPS	mk		448
SBPS	un		507
SBPS	xc		302
SBS	dh		887
SBS	dh	1	887
SBS	dh	2	887
SBS	dk		818
SBS	dw	1	842
SBS	dw	2	758
SBS	dw	3	786
SBS	mc	1	908
SBS	mc	2	840
SBS	mc	3	617
SBS	mh		887
SBS	mk	1	879
SBS	mk	2	875

BEC	Subzone	Variant	$/ha
SBS	mm		1083
SBS	mw		1152
SBS	un		887
SBS	vk		1531
SBS	wk	1	1144
SBS	wk	2	1169
SBS	wk	3	1113
SWB	dk		1161
SWB	dks		1161
SWB	mk		1161
SWB	mks		1161
SWB	un		1161
SWB	vk		1161
SWB	vks		1161

* The dollar per hectare ($/ha) cost estimates are net of overhead.

4.6 Low Grade Percent Adjustment

1. The POA low grade percent adjustment by timber species as shown in Tables 4-6 and 4-7 shall be used in the calculation of the tenure obligation adjustment to account for the timber that is priced at the statutory rate.

2. The low grade percent adjustment for each timber species to be used in the appraisal or reappraisal of the cutting authority area shall be the percent adjustment by timber species by the POA to which the cutting authority area is appraised. Where the net merchantable coniferous volume of timber on the cutting authority area is comprised of 35% or greater red and grey Mountain Pine Beetle (MPB) attacked Lodgepole pine, the adjustment from Table 4-7 is used. For cutting authorities with less than 35% red and grey MPB attacked Lodgepole pine, the adjustment is used from Table 4-6.

3. The low grade percent adjustment to be used in the calculation of the tenure obligation adjustment for a cutting authority area being appraised or reappraised is the sum of the products of the net coniferous cruise volume of each timber species in the cutting authority area multiplied by the low grade percent adjustment for that species, divided by the total net coniferous cruise volume on the cutting authority area.

4. The low grade percent adjustment does not apply to cruise based cutting authorities.

Table 4-6: Point of Appraisal (POA) Low Grade Percent Adjustment by Timber Species

POA	BA	CE	FI	HE	LA	LO	SP	WH	YE
100 Mile	0.3268	0.1297	0.0644	0.3459	0.1164	0.5126	0.1114	0.4960	0.1166
Adams Lake	0.2828	0.1359	0.0472	0.0879	0.0362	0.3618	0.1123	0.0592	0.1166
Armstrong	0.3260	0.2242	0.0476	0.1719	0.0509	0.3961	0.0736	0.4938	0.5553
Bear Lake	0.2860	0.2130	0.0852	0.5442	0.1164	0.8035	0.1464	0.4960	0.1166
Boston Bar	0.3303	0.1297	0.0410	0.3459	0.1164	0.3030	0.0948	0.9162	0.1166
Burns Lake	0.2252	0.2130	0.0578	0.5442	0.1164	0.6736	0.1800	0.4960	0.1166
Canal Flats	0.1421	0.0638	0.0710	0.2827	0.1724	0.1138	0.0779	0.1477	0.0549
Canoe	0.2648	0.1246	0.0318	0.0949	0.0593	0.4811	0.0519	0.2658	0.1166
Carnaby	0.1773	0.1777	0.0520	0.2693	0.1164	0.4887	0.1011	0.4960	0.1166
Castlegar	0.3593	0.1340	0.0291	0.1325	0.0825	0.3900	0.0685	0.4744	0.1166
Chetwynd	0.2339	0.2130	0.0520	0.3459	0.1164	0.3667	0.1049	0.4960	0.1166
Chasm	0.3268	0.1297	0.0644	0.3459	0.1164	0.5126	0.1114	0.4960	0.1166
Clear Lake	0.2328	0.2130	0.0961	0.5442	0.1164	0.7259	0.1045	0.4960	0.1166
Craigellachie	0.3847	0.2472	0.0173	0.3660	0.1191	0.7609	0.1831	0.3080	0.1166
Cranbrook	0.1589	0.2207	0.0465	0.2663	0.1440	0.0817	0.0543	0.1815	0.0482
Creston	0.1440	0.0965	0.0372	0.0641	0.0951	0.0878	0.0558	0.2898	0.1166
Elko	0.1567	0.0106	0.1246	0.2836	0.2076	0.1147	0.0703	0.1047	0.1049
Engen	0.2255	0.2130	0.0578	0.5442	0.1164	0.8353	0.2202	0.4960	0.1166
Fort Nelson	0.3315	0.2130	0.0520	0.3459	0.1164	0.3398	0.1599	0.4960	0.1166
Fort St. James	0.2577	0.2130	0.1703	0.5442	0.1164	0.5585	0.1598	0.4960	0.1166
Fort St. John	0.1771	0.2130	0.0520	0.3459	0.1164	0.1961	0.0977	0.4960	0.1166
Fraser Lake	0.2255	0.2130	0.0578	0.5442	0.1164	0.8353	0.2202	0.4960	0.1166
Galloway	0.1589	0.2207	0.0465	0.2663	0.1440	0.0817	0.0543	0.1815	0.0482
Grand Forks	0.2734	0.0837	0.0996	0.0800	0.1071	0.2073	0.1242	0.6845	0.1166
Hazelton	0.1773	0.1777	0.0520	0.2693	0.1164	0.4887	0.1011	0.4960	0.1166
Houston	0.2607	0.2130	0.0578	0.5442	0.1164	0.4821	0.1555	0.4960	0.1166
Isle Pierre	0.2328	0.2130	0.0961	0.5442	0.1164	0.7259	0.1045	0.4960	0.1166
Kamloops	0.3456	0.1581	0.0644	0.3924	0.0388	0.4612	0.1676	0.1649	0.1166
Kelowna	0.3315	0.2281	0.0622	0.2072	0.0759	0.2671	0.0936	0.8599	0.1166
Kitwanga	0.1858	0.0527	0.0520	0.3935	0.1164	0.0374	0.0263	0.4960	0.1166
Lavington	0.3183	0.1465	0.0827	0.2475	0.1407	0.4041	0.0739	0.3223	0.5556
Lillooet	0.3303	0.1297	0.0410	0.3459	0.1164	0.3030	0.0948	0.9162	0.1166
Louis Creek	0.3456	0.1581	0.0644	0.3924	0.0388	0.4612	0.1676	0.1649	0.1166
Lumby	0.3549	0.2352	0.0724	0.2739	0.1012	0.4084	0.0999	0.7660	0.5394
Lytton	0.3303	0.1297	0.0410	0.3459	0.1164	0.3030	0.0948	0.9162	0.1166
McBride	0.1995	0.3823	0.0617	0.1590	0.1164	0.3412	0.0804	0.4938	0.1166
Mackenzie	0.2000	0.2130	0.4503	0.5442	0.1164	0.6146	0.1251	0.4960	0.1166
Merritt	0.3725	0.0900	0.1030	0.2771	0.0760	0.3429	0.1184	0.4938	0.1166
Midway	0.2910	0.2055	0.0817	0.1844	0.0932	0.1740	0.0906	0.6057	0.1166
Okanagan Falls	0.3168	0.2207	0.0811	0.2663	0.0307	0.1940	0.0842	0.4938	0.1166
Park Siding	0.3468	0.1408	0.0582	0.1686	0.0826	0.3652	0.0929	0.5630	0.0339
Prince George	0.2328	0.2130	0.0961	0.5442	0.1164	0.7259	0.1045	0.4960	0.1166
Princeton	0.2967	0.2207	0.1026	0.3402	0.0625	0.2808	0.1328	0.4938	0.9424
Quesnel	0.1805	0.2130	0.0343	0.5442	0.1164	0.6817	0.0657	0.4960	0.1166
Radium	0.1398	0.1266	0.0217	0.1302	0.3886	0.1087	0.0613	0.3084	0.0614
Revelstoke	0.3334	0.4086	0.0334	0.4692	0.1557	0.5417	0.1229	0.6812	0.1166
Slocan	0.3001	0.1129	0.0386	0.1253	0.0616	0.5670	0.1149	0.5184	0.1166
Smithers	0.1917	0.2130	0.0578	0.6936	0.1164	0.3068	0.0956	0.4960	0.1166
Squamish	0.3303	0.1297	0.0410	0.3459	0.1164	0.3030	0.0948	0.9162	0.1166
Strathnaver	0.2574	0.2130	0.0240	0.5442	0.1164	0.6316	0.0848	0.4960	0.1166
Taylor	0.1771	0.2130	0.0520	0.3459	0.1164	0.1961	0.0977	0.4960	0.1166
Terrace	0.1773	0.0993	0.0520	0.4261	0.1164	0.1063	0.0936	0.4960	0.1166
Thrums	0.3468	0.1408	0.0582	0.1686	0.0826	0.3652	0.0929	0.5630	0.0339
Upper Fraser	0.2328	0.2130	0.0961	0.5442	0.1164	0.7259	0.1045	0.4960	0.1166
Valemount	0.1995	0.3823	0.0617	0.1590	0.1164	0.3412	0.0804	0.4938	0.1166

POA	BA	CE	FI	HE	LA	LO	SP	WH	YE
Vanderhoof	0.2255	0.2130	0.0578	0.5442	0.1164	0.8353	0.2202	0.4960	0.1166
Vavenby	0.3053	0.2689	0.0413	0.4215	0.0529	0.4007	0.1085	0.0982	0.1166
Westbank	0.3301	0.2207	0.1253	0.2849	0.1388	0.2790	0.0791	0.7043	0.1166
Williams Lake	0.2353	0.0800	0.0451	0.3459	0.1164	0.5273	0.0839	0.4960	0.1166
Ymir	0.4071	0.0747	0.0542	0.1654	0.1569	0.5864	0.1142	0.6844	0.1166

Table 4-7 Point of Appraisal (POA) Low Grade Percent Adjustment by Timber Species

POA	BA	CE	FI	HE	LA	LO	SP	WH	YE
100 Mile	0.3766	0.1791	0.1062	0.2233	0.5769	0.6858	0.1550	0.3226	0.8364
Adams Lake	0.2740	0.6669	0.0201	0.1025	0.0647	0.4296	0.0630	0.5172	0.8364
Armstrong	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Bear Lake	0.3257	0.2123	0.1064	0.2235	0.1941	0.8582	0.1850	0.0043	0.8364
Boston Bar	0.2719	0.1791	0.0900	0.2233	0.5769	0.6669	0.1434	0.3226	0.8364
Burns Lake	0.2644	0.2123	0.0710	0.2235	0.1941	0.6669	0.1670	0.0043	0.8364
Canal Flats	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Canoe	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Carnaby	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Castlegar	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Chetwynd	0.2180	0.4030	0.0762	0.1417	0.1679	0.2517	0.0761	0.5183	0.8364
Chasm	0.2719	0.1791	0.0900	0.2233	0.5769	0.6669	0.1434	0.3226	0.8364
Clear Lake	0.3040	0.2123	0.0724	0.2235	0.1941	0.7627	0.1704	0.0043	0.8364
Craigellachie	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Cranbrook	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Creston	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Elko	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Engen	0.3275	0.2123	0.0710	0.2235	0.1941	0.7778	0.2003	0.0043	0.8364
Fort Nelson	0.2180	0.4030	0.0762	0.1417	0.1679	0.2517	0.0761	0.5183	0.8364
Fort St. James	0.2986	0.2123	0.0648	0.2235	0.1941	0.6793	0.1669	0.0043	0.8364
Fort St. John	0.2180	0.4030	0.0762	0.1417	0.1679	0.2517	0.0761	0.5183	0.8364
Fraser Lake	0.1684	0.2123	0.0710	0.2235	0.1941	0.8193	0.1666	0.0043	0.8364
Galloway	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Grand Forks	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Hazelton	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Houston	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Isle Pierre	0.3534	0.2123	0.0880	0.2235	0.1941	0.8172	0.2109	0.0043	0.8364
Kamloops	0.2079	0.1582	0.0942	0.1025	0.1045	0.6044	0.1446	0.8199	0.8364
Kelowna	0.2589	0.4081	0.0710	0.1025	0.0647	0.3852	0.0738	0.5507	0.8364
Kitwanga	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Lavington	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Lillooet	0.2719	0.1791	0.0900	0.2233	0.5769	0.6669	0.1434	0.3226	0.8364
Louis Creek	0.2028	0.4081	0.0496	0.1025	0.0647	0.5826	0.0799	0.5507	0.8364
Lumby	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Lytton	0.2719	0.1791	0.0900	0.2233	0.5769	0.6669	0.1434	0.3226	0.8364
McBride	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Mackenzie	0.2668	0.2123	0.0710	0.2235	0.1941	0.6467	0.1588	0.0043	0.8364
Merritt	0.2173	0.4081	0.0853	0.1025	0.0647	0.3557	0.0883	0.5507	0.8660
Midway	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Okanagan Falls	0.2589	0.4081	0.0710	0.1025	0.0647	0.3852	0.0738	0.5507	0.8364
Park Siding	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Prince George	0.3515	0.2123	0.0780	0.2235	0.1941	0.8105	0.2052	0.0043	0.8364
Princeton	0.2729	0.4081	0.0529	0.1025	0.0486	0.3661	0.1475	0.5507	0.8364
Quesnel	0.1964	0.2123	0.0705	0.2235	0.1941	0.6129	0.1250	0.0043	0.8364
Radium	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Revelstoke	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Slocan	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Smithers	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Squamish	0.2719	0.1791	0.0900	0.2233	0.5769	0.6669	0.1434	0.3226	0.8364
Strathnaver	0.3105	0.2123	0.0363	0.2235	0.1941	0.7423	0.1325	0.0043	0.8364
Taylor	0.2180	0.4030	0.0762	0.1417	0.1679	0.2517	0.0761	0.5183	0.8364
Terrace	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Thrums	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364

POA	BA	CE	FI	HE	LA	LO	SP	WH	YE
Upper Fraser	0.3515	0.2123	0.0780	0.2235	0.1941	0.8105	0.2052	0.0043	0.8364
Valemount	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Vanderhoof	0.2900	0.2123	0.0154	0.2235	0.1941	0.7683	0.1852	0.0043	0.8364
Vavenby	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Westbank	0.2589	0.4081	0.0710	0.1025	0.0647	0.3852	0.0738	0.5507	0.8364
Williams Lake	0.2998	0.1791	0.0967	0.2681	0.7827	0.5856	0.1046	0.3226	0.8364
Ymir	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364

4.7 Market Logger Cost

1. The market logger cost (MLC) is used in the calculation of the tenure obligation adjustment in an appraisal or reappraisal of a cutting authority area.

2. MLC is expressed in $/m^3 and is calculated from the MPS data set

$$MLC = \left[\left(\frac{1.29}{1 - LG}\right) + 0.08\right] x \left[\frac{CPI}{133.3}\right]$$

Where:

$1.29/m^3 is the average market logger development cost for the auction dataset.

LG is the low grade percent adjustment from Tables 4-6 or 4-7 (for cruise based cutting authorities, LG = 0).

$0.08/m^3 is the market logger specified operation cost from the auction dataset.

CPI is the monthly BC Consumer Price Index (refer to section 3.3).

133.3 is the average CPI cost base (2009/10).

4.8 Return to Forest Management (RFM)

The return to forest management factor is 1.031.

4.9 Final Tenure Obligation Adjustment

1. The tenure obligation adjustment is used in the determination of the stumpage rate for a cutting authority other than a timber sale licence entered into under section 20 of the *Act*.

2. The final tenure obligation adjustment (FTOA) is calculated as follows:

$$FTOA = \left[\frac{TTOA}{1 - LG}\right] * RFM - MLC$$

$$TTOA = (FFMA + DC + FRM + TS)\ x\ \left[\frac{CPI}{133.3}\right]$$

Where:

TTOA	=	Total Tenure Obligation Adjustment ($/m^3)
FFMA	=	Final Forest Management Administration cost ($/m^3)
DC	=	Total Development cost ($/m^3)
FRM	=	Final Road Management cost ($/m^3)
TS	=	Total Silviculture cost ($/m^3)
LG	=	Low Grade percent adjustment (for cruise based cutting authorities, LG = 0)
RFM	=	Return to Forest Management
MLC	=	Market Logger Cost ($/m^3)
CPI	=	*Monthly BC Consumer Price Index* (see section 3.3)

Stumpage Rate Determination 5

5.1 Stumpage Rate Determination for a Cutting Authority Entered into Under a BCTS Licence

1. Sections 5.1.1 through 5.1.3 are the policies and procedures for determining the upset for a cutting authority that is entered into under a BCTS licence.

2. a. The Market Pricing System for BCTS can only be used in the appraisal of a BCTS licence and a forestry licence to cut entered into under Section 47.6(3) of the *Act* where data is available to do a full appraisal.

   b. Where the data is not available to do a full appraisal of a cutting authority area, the appraisal must use the procedures outlined in chapter 6 of this manual.

3 a. All upsets for section 20 timber sale licences advertised on or after November 1, 2003 and Forestry Licences to Cut entered into under section 47.6(3) of the *Forest Act* are fixed for the term and all extensions except where:

   i. a reappraisal is done under section 2.2.1(1)(e) due to sudden and severe damage, or

   ii. a Minister's directed reappraisal is done under section 2.2.2,

5.1.1 Upset Stumpage Rates (Upset)

1. Except as provided by subsections (2), (3), (4), (5) and (6) of this section, the upset for a timber sale licence shall be no less than the greater of either the indicated upset stumpage rate (IU) calculated according to section 5.1.2, by regional revenue staff, or the variable cost to prepare the timber for sale (VCU).

2. Where applications for a timber sale licence with an upset determined under subsections (1) or (5) of this section have been invited but no applications have been received, the upset for the re-advertised timber sale shall be no less than the VCU.

3. Where the Executive Director, BCTS, does not anticipate that applications for a timber sale licence with an upset determined under subsections (1) or (5) of this section will be received due to market conditions or timber profile, the upset shall be equal to the upset proposed by the Executive Director.

4. a. The upset for decked timber or partially harvested timber that is over three years old and is administered by BCTS, shall be equal to the upset rate requested by the Timber Sales Manager.

b. The upset for decked timber or partially harvested timber that has been decked or felled for three years or less and is administered by BCTS shall be the upset rate requested by the Timber Sales Manager.

c. If the timber sales manager intends to sell the decked timber under paragraph (a) or (b) above competitively as a lump sum amount then the upset value is the upset rate from the appropriate paragraph (a) or (b) of this subsection multiplied by the volume of the decked or partially harvested timber determined by an authorized licenced scaler using a method approved by the minister.

5. Except as provided in subsections 2 or 3 of this section, the upset for a timber sale licence where the volume of deciduous timber to be harvested on the cutting authority area is equal to or greater than sixty percent of the total net cruise volume, shall be determined in accordance with sections 5.1.2 except that the market price determined under section 3.4 shall use CD = 1.

6. Where the invitation to tender for timber authorized for harvest under a timber sale requires a bonus offer, and the amount of stumpage payable will be based on a cruise of the timber as authorized under section 106 of the *Forest Act*, the upset shall be no less than the greater of:

   a. the upset stumpage value derived by regional revenue staff using subsection (1) of this section, or

   b. the VCU,

7. The VCU is calculated by the Timber Sales Manager.

8. The upset determined under subsections (1), (2), (3), (4)(b), (5) and (6) of this section shall not be less than the VCU unless approved by the Executive Director, BCTS.

5.1.2 IU Calculation

IU = FEWB x (1- DF)

Where: IU = Indicated upset
FEWB = Final estimated winning bid from section 3.7

DF = 0.00 if the cutting authority being appraised was entered into under section 47.6(3) of the *Act*, otherwise DF = 0.30

5.1.3 Total Stumpage

1. The total stumpage is the total of the upset stumpage rate plus the bonus bid or the upset stumpage value plus the bonus offer, if any, that must be paid by the licensee.

2. Where the upset is determined under subsections (1), (2), (3), and (4) of section 5.1.1, the total stumpage applies to Grade Code 1 and 2 coniferous sawlogs.

3. Where the upset is determined under subsection (5) of section 5.1.1, the total stumpage applies to Grade Code 1 and 2 coniferous and deciduous sawlogs.

4. Where the upset is determined under section 5.1.1(6) total stumpage applies to the timber species and volumes specified by the Executive Director, BCTS.

5.2 Stumpage Rate Determination for a Cutting Authority Other than a Cutting Authority Entered into Under a BCTS Licence, or a Cutting Authority for Which a Stumpage Rate is Determined Under Chapter 6

Sections 5.2.1 through 5.2.5 are the policies and procedures for determining a stumpage rate for a cutting authority other than a cutting authority entered into under a BCTS licence or a cutting authority for which a stumpage rate is determined under chapter 6.

5.2.1 Indicated Rate (IR)

1. The IR is the difference between the final estimated winning bid (FEWB) calculated for the cutting authority under section 3.7 and the tenure obligation adjustment (TOA) calculated under section 4.9.

2. Expressed as an equation:

$$IR = FEWB - FTOA$$

5.2.2 Reserve Stumpage

The reserve stumpage for a cutting authority is determined by selecting:

1. The greater of:

    a. the indicated rate, or
    b. the minimum stumpage rate.

2. The greater of:

    c. the upset stumpage rate or value, or
    d. the minimum stumpage rate or equivalent value.

5.2.3 Stumpage Rate

1. Unless otherwise provided in subsection 2 of this section, the total stumpage is the sum of the reserve stumpage plus any administration and silviculture levies which may apply under section 5.2.4.

2. If the cutting authority is awarded on the basis of competition, the total stumpage is:

    a. the sum of the reserve stumpage plus the bonus bid, or
    b. the sum of the reserve stumpage plus the bonus offer.

5.2.4 Levies

1. A silviculture levy may be added to:

    a. the reserve stumpage rate determined under section 5.2.2,

    b. the stumpage rate determined under subsections 6.1.3, 6.2(1), 6.2(2), 6.2(3) or section 6.5,

    c. the reserve stumpage rate indicated in Table 6-6 for all species grades 4 and 6 and deciduous sawlogs.

2. The levy is equal to the district manager's or timber sales manager's cost estimate of silviculture costs to be incurred by the Crown.

3. Development/Administration Levy:

    a. A development levy may be added to the reserve stumpage rate. The development levy is equal to the appraisal cost estimate of road construction provided by the Crown as approved by the regional manager.

    b. An administration levy may be added to the reserve stumpage rate. The administration levy is equal to the district manager's cost estimate of administration provided by the Crown for preparing a Forestry Licence to Cut for salvage timber. An administration cost estimate is made for every cutting authority where the district office has to prepare all details of a Forestry Licence to Cut for salvage. No levy is applicable to professional applications.

4. The amount of any levy may be re-determined at reappraisal only.

Miscellaneous Policies 6

6.1 Coniferous Average Sawlog Stumpage Rates by Forest Zone and Species

1. a. Each of the following forest zones referred to in Tables 6-1, 6-2, 6-4 and 6-5 is made up of the following forest districts:

   i. North Central Zone - Fort St. James, Mackenzie, Nadina, Prince George, Quesnel and Vanderhoof Forest Districts.

   ii. North East Zone - Fort Nelson and Peace Forest Districts.

   iii. North West Zone - Kalum and Skeena Stikine Forest Districts.

   iv. South East Zone - Arrow Boundary, Columbia, Headwaters, Kamloops, Kootenay Lake, Okanagan Shuswap and Rocky Mountain Forest Districts.

   v. South West Zone - 100 Mile House, Cascades, Central Cariboo and Chilcotin Forest Districts.

   b. Where a species of coniferous timber is not listed in Table 6-1, 6-2, 6-4 and 6-5, the rate that shall be used for that species of timber is the rate listed in the column headed as OTHER.

Table 6-1 Coniferous Average Sawlog Stumpage Rates in $/m^3 by Forest Zone and Species

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	SPRUCE	Y. PINE	OTHER[1]
North Central	5.64	-	14.04	-	-	3.74	7.77	-	6.52
North East	0.97	-	-	-	-	2.11	2.77	-	2.53
North West	1.77	3.85	-	2.86	-	4.62	2.94	-	3.02
South East	6.86	13.22	10.82	8.51	10.41	7.05	6.67	9.21	8.37
South West	7.15	10.47	9.49	5.79	-	8.29	6.34	-	7.93

[1] Average for the Forest Zone

6.1.1 Community Forest Agreements

1. The sawlog stumpage rate for each species of coniferous timber harvested under any cutting authority issued under a Community Forest Agreement is the rate prescribed in Table 6-2 for the forest zone in which the cutting authority area is located.

2. Sections 1.4(1)(d), sections 6.1.2 through 6.5 and section 6.7 through 6.9 of this chapter do not apply to Community Forest Agreement cutting authorities.

3. The stumpage rate determined under this section is redetermined on August 1 of each year in accordance with this section.

6.1.2 Woodlot Licences

1. Except as provided in subsection (2) of this section, the sawlog stumpage rate for each species of coniferous timber harvested under a cutting permit issued for a woodlot licence with an effective date after November 30, 2008 is the rate prescribed in Table 6-2 for the forest zone in which the cutting authority area is located.

2. Where a woodlot licence cutting permit has been issued with an effective date after November 30, 2008 for the purpose of using amounts from an eligible extended road amortization agreement in an appraisal, then the stumpage rate will be determined using the procedures in this manual excluding this section.

3. Except as provided in subsection (4) of this section, the sawlog stumpage rate for coniferous timber harvested under a road permit issued for a woodlot licence is the rate prescribed in Table 6-2 for the forest zone in which the timber mark applies.

4. Where a woodlot has an eligible extended road amortization agreement before December 1, 2008 the sawlog stumpage rate for a road permit with an effective date on or after December 1, 2008 is calculated using the procedures in section 6.3.

5. The sawlog stumpage rate for each species of coniferous timber harvested under a blanket salvage permit issued for a woodlot licence is the rate prescribed in Table 6-2 for the forest zone in which the blanket salvage permit applies.

6. The stumpage rate determined under subsections (1), (3) and (5) of this section is redetermined on August 1, each year in accordance with this section.

7. Except as provided in subsections (2) and (4) of this section, sections 1.4(1)(d), 6.1.1, 6.1.3 through 6.5, 6.7 and 6.8 do not apply to woodlot licences.

Table 6-2 Community Forest Agreements and Woodlot Licences: Coniferous Average Sawlog Stumpage Rates in $/m^3

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	SPRUCE	Y. PINE	OTHER[1]
North Central	0.85	-	2.11	-	-	0.56	1.17	-	0.98
North East	0.25	-	-	-	-	0.32	0.42	-	0.38
North West	0.27	0.58	-	0.43	-	0.69	0.44	-	0.45
South East	1.03	1.98	1.62	1.28	1.56	1.06	1.00	1.38	1.26
South West	1.07	1.57	1.42	0.87	-	1.24	0.95	-	1.19

[1] Average for the Forest Zone

6.1.3 Incidental Conifer in Deciduous Leading Stands

1. Except as provided in section 5.1.1(5), this section applies to coniferous timber in a cutting authority area where the total volume of all deciduous species to be harvested is greater than 70% of the total estimated net volume to be harvested.

2. a. The stumpage rate for each species of coniferous timber must be determined by using the stumpage rate prescribed in Table 6-1 for the forest zone in which the cutting authority area is located.

   b. Where the Crown is responsible for basic silviculture on the cutting authority area, the stumpage rate for each species of coniferous timber shall be the sum of the rate determined under paragraph (a) of this subsection and the silviculture levy determined under section 5.2.4.

3. A stumpage rate determined under subsection 2 shall be redetermined on June 1, of each year in accordance with this section.

4. Notwithstanding subsection (2) in this section, the stumpage rate may be determined through a full appraisal in accordance with chapters 1, 2, 3, 4, and 5.

6.2 Cutting Authorities With 5 000 m^3 or Less Volume

1. Where the total coniferous volume to be harvested in a cutting authority area is 2 000 m^3 or less, and where the agreement under which the cutting authority authorizing harvesting on the cutting authority area has been issued has a coniferous allowable annual cut of not more than 3 000 cubic metres, or no coniferous annual allowable cut:

    a. The stumpage rate for each species of coniferous timber in the cutting authority area must be determined using the stumpage rate in Table 6-1 for the forest zone in which the cutting authority area is located, except that,

    b. Where the agreement holder is not required to establish a free growing crop of trees on the cutting authority area, the stumpage rate for each species of timber shall be

        i. the sum of the rate determined under paragraph (a) of this subsection and the basic silviculture cost for the species in the forest region, or

        ii. where the Crown has the responsibility for silviculture, the sum of the rate determined under paragraph (a) of this subsection and the silviculture levy determined under section 5.2.4.

2. Except as provided in subsection 4 of this section or section 6.2.1, where the total coniferous volume to be harvested on a cutting authority area is 5 000 m^3 or less, and the cutting authority authorizing harvesting on the cutting authority area is a competitively awarded forestry licence to cut, other than a BCTS licence:

    a. Except as provided in paragraph (d) of this subsection, the upset stumpage rate for each species of coniferous timber in the cutting authority area will be 70 % of the stumpage rate for that species in Table 6-1 for the forest zone in which the cutting authority area is located, except that,

    b. Where applications for a forestry licence to cut have been invited with upset stumpage rates determined under this subsection and no applications have been received, the upset stumpage rate for each species of coniferous timber shall be the rate requested by the district manager and approved by the regional manager.

    c. Where the regional manager does not anticipate that applications for a forestry licence to cut will be received due to market conditions or timber profile, the upset stumpage rate for each species of coniferous timber shall be the rate requested by the district manager and approved by the regional manager.

    d. Where the Crown is responsible for basic silviculture on the cutting authority area, the upset stumpage rate for each species of coniferous timber in the cutting authority area will be the sum of the stumpage rate determined under paragraphs (a), (b) or (c) of this subsection and the basic silviculture levy determined under section 5.2.4.

3. Where the cutting authority authorizing harvesting is a competitively awarded licence to cut other than a BCTS licence, and

   a. The total net cruise volume is 5000m^3 or less, and

   b. The cutting authority has been approved as cruise based under section 106 of the Act,

   the upset shall be no less than the district's cost to prepare the timber for sale as calculated by the district manager and the total stumpage shall apply to all species of timber on the cutting authority area.

4. An upset stumpage rate determined under subsection (2) of this section shall not be less than the district's variable cost per cubic meter to prepare the timber for sale as calculated by the district manager.

5. Except as provided in section 2.2.2, where the upset stumpage rate is determined under this section, the total stumpage is fixed for the term of the cutting authority and all extensions.

6. a. Notwithstanding subsections (1), (2) or (3) of this section, where the total coniferous volume to be harvested on a cutting authority area is 5 000 m^3 or less, the stumpage rate may be determined in accordance with chapters 1, 2, 3, 4 and 5.

   b. Where the stumpage rate is determined in accordance with this subsection the total stumpage rate is fixed for the term and all extensions.

6.2.1 Forestry Licences to Cut for Specific Purposes (No Volume Limit)

1. a. Where the cutting authority is a forestry licence to cut awarded to the highest bidder, other than a BCTS licence and it has been issued:

      i. For the purpose of protecting a community from wildfire as prescribed under section 1 of the *Forestry Licence to Cut Regulation*, or

      ii. For the purpose of removing damaged timber from natural stands or plantations where:

         aa. at least 70% of all of the merchantable timber volume on the cutting authority area is Pine that has been damaged by mountain pine beetle, and either

         bb. at the time of death, the age of the damaged timber was not more than 60 years, or

         cc. a field survey indicates that the average stems per hectare on the cutting authority area is greater than 2 000 with a minimum diameter at breast height of 5 centimeters, or

      iii. For the purpose of utilizing post harvest material in piles on landings or at

roadside after a waste assessment has been made.

Then, the upset stumpage rate shall be the rate approved by the Regional Manager.

b. Where the invitation for applications for a forestry licence to cut awarded to the highest bidder referred to in paragraph (a) of this subsection requires a bonus offer, and the amount of stumpage payable will be based on a cruise instead of a scale of the timber under section 106 of the *Act*, the upset stumpage rate shall be the rate approved by the Regional Manager, and shall apply to the net merchantable volume on the cutting authority area.

c. Where the forestry licence to cut is issued without competition for the purposes described in paragraph (a)(i) of this section the sawlog stumpage rate for such species of coniferous timber shall be:

   i. Except as provided in (ii), the stumpage rate in Table 6-1 for the forest zone in which the cutting authority area is located.

   ii. If more than one-third of the total volume of coniferous timber on the cutting authority area is damaged timber as defined in section 6.4(3) then the stumpage rate in Table 6-4 for the forest zone in which the cutting authority area is located.

   iii. When the licence to cut is issued to the lowest eligible bidder on a contract issued for the purpose referred to in paragraph (a)(i) of this subsection, the stumpage rate determined from the applicable paragraph (c)(i) or (c)(ii) above.

d. Where the forestry licence to cut is issued without competition meets the requirements set out in paragraph (a)(ii) of this section, the coniferous sawlog stumpage rate shall be $\$1.20/m^3$ when the licence to cut is issued to the lowest eligible bidder on a contract issued for the purpose referred to in paragraph (a)(ii).

e. Notwithstanding any paragraph in this subsection when the timber on the cutting authority area will be scaled as chips or hogged tree material the reserve stumpage rate shall be the rate from Table 6.6.

2. An upset stumpage rate determined under this section must be calculated using the *Interior Appraisal Manual* in effect on the date that the rate is determined and must not be less than the district's variable cost to prepare the timber for sale as calculated by the district manager.

3. Notwithstanding subsections 1(c) or (d) the stumpage rate for the forestry licence to cut may be determined in accordance with chapters 1, 2, 3, 4 and 5. The cruise data that is used in the appraisal may be from the cruise of a comparable cutting authority as per section 1.5.1.1.

4. Except as provided in section 2.2.2, when the upset stumpage rate or stumpage rate is determined under this section, the total stumpage rate is fixed for the term of the cutting authority and all extensions.

6.3 Road and Blanket Salvage Permits

1. a. In this section the area of a forest district or the area of a timber supply area does not include the area of a park located within that district or timber supply area.
   b. In this section the area of a Tree Farm Licence will be included in the area of the district or timber supply area in which it is geographically located.
2. Except as provided in 6.1.2(3) and (5) and subsections (3) and (4) of this section, the stumpage rate for a road permit or a blanket salvage permit shall be the weighted average sawlog stumpage rate:
   a. from the table provided to the regions by Timber Pricing Branch for all cutting authorities, authorizing harvesting on cutting authority areas that have been fully appraised, that authorize the harvesting of timber in the same forest district in which the road or blanket salvage permit cutting authority area is located, and that are issued under the licence that entitles the licensee to apply for the road or blanket salvage permit, if there is a minimum positive scaled based billed volume of 500 cubic metres of coniferous sawlogs from which the weighted average sawlog stumpage rate may be determined, or
   b. the stumpage rate is the stumpage rate prescribed in Table 6-3 for the smaller of the area of the same forest district or the area of the same timber supply area in which the road permit or blanket salvage permit cutting authority area is located.
3. The bonus bid if applicable will be added to the stumpage rate determined under subsection 2(b).

Table 6-3 Coniferous Average Sawlog Stumpage Rates by Smallest Geographic Unit

TSA is Smallest Geographic Unit			
District	**Rate ($/m^3)**	**TSA**	**Rate ($/m^3)**
Arrow Boundary Forest District	7.22	Arrow TSA	8.27
		Boundary TSA	6.15
		Cascadia TSA Blks 1, 2, 3, 4	8.27
Cascades Forest District	9.58	Merritt TSA	10.32
		Lillooet TSA	1.61
Columbia Forest District	3.70	Golden TSA	3.37
		Revelstoke TSA	3.95
Headwaters Forest District	7.55	Robson Valley TSA	0.73
Kalum Forest District	0.70	Nass TSA	0.25
		Kalum TSA	0.76
		Cascadia TSA Blks 9, 10, 11	0.76
		Pacific TSA Blks 28A, 28B	0.76
Nadina Forest District	2.29	Lakes TSA	2.88
		Morice TSA	2.20
Peace Forest District	2.13	Dawson Creek TSA	1.63
		Fort St John TSA	2.62
Rocky Mountain Forest District	4.67	Cranbrook TSA	5.24
		Invermere TSA	3.94
Skeena Stikine Forest District	3.58	Bulkley TSA	4.82
		Kispiox TSA	4.92
		Cassiar TSA	0.25

District is Smallest Unit[1]			
TSA	**Rate ($/m^3)**	**District**	**Rate ($/m^3)**
Kamloops TSA	8.45	Kamloops Forest District	8.26
		Headwaters Forest District	7.55
Williams Lake TSA	6.31	Central Cariboo Forest District	7.21
		Chilcotin Forest District	0.31
Prince George TSA	8.16	Fort St. James Forest District	5.83
		Prince George Forest District	9.64
		Vanderhoof Forest District	6.04

[1]Smallest geographic unit

District & TSA are the same		
District	**TSA**	**$/m^3**
100 Mile House Forest District	100 Mile House TSA	4.12
Kootenay Lake Forest District	Kootenay Lake TSA	6.12
Fort Nelson Forest District	Fort Nelson TSA	4.56*
Mackenzie Forest District	Mackenzie TSA	4.95
Okanagan Shushwap Forest District	Okanagan TSA	9.01
Quesnel Forest District	Quesnel TSA	6.62
	Cascadia TSA Blks 5, 6, 7, 8	6.62

* Regional rate

Regions	
Regions	**Rate ($/m^3)**
RNI	4.56
RSI	7.22

4. If there are no records from which the weighted average sawlog stumpage rate may be determined under paragraphs (a) or (b) of subsection (2) of this section, then the stumpage rate, for each species of coniferous timber, is the rate in Table 6-1 for the forest zone in which the road or blanket salvage permit cutting authority area is located.

5. a. The total stumpage rate ($/m^3) for a road permit granted to the holder of a timber sale licence entered into under section 20 of the *Act* shall be the same as the total stumpage rate for the timber sale licence which entitled the holder to apply for the road permit.

   b. The total stumpage value ($/ha) for a road permit granted to the holder of cruise based timber sale licence entered into under section 20 of the *Act* shall be the same as the total stumpage value of the timber sale licence which entitled the holder to apply for the road permit.

6. The stumpage rate for a road permit for a licence other than a BCTS licence shall be redetermined on June 1 of each year in accordance with the procedure in this section.

7. The costs of roads authorized for construction under road permits are eligible for inclusion as development cost estimates under section 4.3 in the appraisal of the

licensees' first fully appraised tributary cutting authority. These roads will not be considered as existing roads under section 4.3.1.3(2).

8. Where a woodlot has an eligible extended road amortization agreement before December 1, 2008 the sawlog stumpage rate for a road permit with an effective date on or after December 1, 2008 is calculated using the procedures in this section.
9. The stumpage rate for a blanket salvage cutting permit shall be redetermined on June 1 each year in accordance with the procedures in this section.
10. Except as provided in 6.3(5), all new Road and Blanket Salvage Permits must be scale based for billing.

6.4 Salvage Timber Stumpage Rates

1. This section applies to cutting authorities issued under licences which do not have an allowable annual cut. Salvaged timber is either post harvest material or damaged timber:

2. Post Harvest Material is either:

    a. wooden culverts and bridges, or

    b. post logging residue.

3. Damaged Timber is timber that:

    a. Has been blown down,

    b. Has been damaged by fire, disease, snow press, or

    c. Will die within one year, as determined by the district manager, as a result of the affects of the mountain pine beetle, or other forest pests.

    d. Will be or has been used for trap trees and associated overflow trees.

4. Except as provided in section 6.2.1(1)(c)(ii), the criteria and methodology for the calculation of salvaged timber stumpage rates are:

    a. Post harvest material may not be combined in the same cutting authority area with damaged timber.

    b. Except where damage to adjacent or contiguous timber occurs after harvesting is completed on the adjacent primary logging cutting permit area and the harvesting equipment has been demobilized from the area, damaged timber salvage cutting authority areas must be scattered, and not be adjacent to or contiguous with an existing cutting authority area.

    c. Except as provided in subsection (4)(d) of this section the total area of a clearcut salvage harvesting area shall not exceed 5 hectares.

    d. Where salvage of only damaged stems through partial cutting will leave a stand that meets minimum stocking standards, the area harvested may be larger than 5 hectares.

    e. Salvage logging stumpage rates may only be determined for a cutting authority where more than one-third of the total volume of coniferous timber to be harvested in the cutting authority area is damaged timber.

    f. Post harvest salvage may only occur after primary logging has been satisfactorily completed and residue and waste assessments have been submitted to and accepted by the Ministry.

g. Salvage cannot occur on a road right-of-way which has an active timber mark associated with it.

h. Except as provided in section 2.2.2, a stumpage rate determined under this section is fixed for the term of the cutting authority and all extensions.

5. Where salvaged timber is damaged timber, the sawlog stumpage rate for each species of coniferous timber shall be the rate in Table 6-4 for the Forest Zone in which the cutting authority area is located.

6. Where the salvaged timber is post harvest material, the sawlog stumpage rate for each species of coniferous timber shall be the rate in Table 6-5 for the forest zone in which the cutting authority area is located.

Table 6-4 Coniferous Average Sawlog Stumpage Rates for Salvage of Damaged Timber by Forest Zone and Species in $/m^3

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	SPRUCE	Y. PINE	OTHER[1]
North Central	3.38	-	12.64	-	-	2.81	6.99	-	3.91
North East	0.58	-	-	-	-	1.58	2.49	-	1.52
North West	1.06	3.47	-	1.72	-	3.47	2.65	-	1.81
South East	4.12	11.90	9.74	5.11	9.37	5.29	6.00	6.91	5.02
South West	4.29	9.42	8.54	3.47	-	6.22	5.71	-	4.76

[1] Average for the Forest Zone

Table 6-5 Coniferous Average Sawlog Stumpage Rates for Salvage of Post Harvest Material by Forest Zone and Species in $/m^3

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	SPRUCE	Y. PINE	OTHER[1]
North Central	1.41	-	7.02	-	-	1.87	3.89	-	1.63
North East	0.25	-	-	-	-	1.06	1.39	-	0.63
North West	0.44	3.08	-	0.72	-	2.31	1.47	-	0.76
South East	1.72	10.58	5.41	2.13	5.21	3.53	3.34	4.61	2.09
South West	1.79	8.38	4.75	1.45	-	4.15	3.17	-	1.98

[1] Average for the Forest Zone

6.5 Decked and Partially Harvested Timber for a Cutting Authority Other than a Cutting Authority Entered Into Under a BCTS Licence

1. When decked timber only is advertised for sale to the highest bidder, the upset stumpage rate for the timber shall be the total of the silviculture levy determined under section 5.2.4 and:

    a. The prescribed minimum stumpage rate if the timber has been decked for over three years, or

    b. 70% of the stumpage rate from Table 6-4 for the applicable species and forest zone if the timber has been decked for three years or less.

2. When decked timber only is sold directly without the use of the competitive bidding process, the stumpage rate for the timber shall be the total of the silviculture levy determined under section 5.2.4 and:

    a. The variable cost to prepare the timber for sale if the timber has been decked for over three years, or

    b. The stumpage rate from Table 6-4 for the applicable species and forest zone if the timber has been decked for three years or less.

3. When partially harvested timber only is advertised for sale to the highest bidder the upset stumpage rate for the timber shall be the total of the silviculture levy determined under section 5.2.4 and:

    a. The prescribed minimum stumpage rate, if three years or more have passed since the timber was felled, or

    b. 70% of the stumpage rate for the applicable species and forest zone from Table 6-5 if less than three years have passed since the timber was felled.

4. When partially harvested timber only is sold directly without the use of the competitive bidding process, the stumpage rate for the timber shall be the total of the silviculture levy determined under section 5.2.4 and:

    a. The variable cost to prepare the timber for sale if three years or more have passed since the timber was felled, or

    b. The stumpage rate from Table 6-5 for the applicable species and forest zone if less than three years have passed since the timber was felled.

5. a. Where applications for decked timber or partially harvested timber being sold to the highest bidder have been invited with an upset stumpage rate determined under subsections 1(b), 3(b) or 6(a) of this section and no applications have been received, the upset stumpage rate shall be the rate approved by the

Regional Manager.

b. Where the regional manager does not anticipate that applications will be received for decked timber or partially harvested timber being sold to the highest bidder due to market conditions or timber profile, the upset stumpage rate determined under subsections 1(b), 3(b) and 6(a) of this section shall be the rate approved by the regional manager.

c. An upset stumpage rate determined under paragraphs (a) or (b) of this subsection shall not be less than the district's variable cost to prepare the timber for sale.

6. a. Where applications for a forestry licence to cut that applies to both decked timber and partially harvested timber have been invited, the upset stumpage rate shall be the total of the rate determined using the procedures in subsection (1) of this section, as if the timber was all decked timber and the silviculture levy determined under section 5.2.4.

b. Where a forestry licence to cut that applies to both decked timber and partially harvested timber is entered into directly without the use of the competitive bidding process the stumpage rate shall be the total of the rate determined using the procedure in subsection 2 of this section as if the timber was all decked timber and the silviculture levy determined under section 5.2.4.

7. Where the upset stumpage rate or the stumpage rate has been determined using this section the total stumpage rate shall be fixed for the term of the cutting authority and all extensions.

8. An upset stumpage rate calculated under this section must be calculated using the *Interior Appraisal Manual* in effect on the date that the rate is determined (appraisal effective date).

6.6 Miscellaneous Stumpage Rates

1. Unless otherwise specified in this manual, the stumpage rates, at the time of scale for timber harvested for the purposes described, in the districts listed, in the forest district specific section of Table 6-6 are as prescribed in that table. This table does not apply to cruise based cutting authorities.

Table 6-6 Miscellaneous Stumpage Rates

All Interior Forest Regions

Species	Code [1]	Product	Reserve Stumpage Rate
All Species	SB	Shake & Shingle Bolts, Blocks and Blanks.	$5.30/m^3
All Species	SK	Shakes	$6.00/m^3
Cedar	PR	Posts & Rails (Split and Round)	$3.00/m^3
All other Species	PR	Posts & Rails (Split and Round)	$1.20/m^3
All Species	MT	Mining Timbers	$3.00/m^3
All Species	FW	Firewood	$0.50/m^3
Yew		All	$0.25/m^3
All Species	CH	Wood chips from post-harvest material where a waste assessment has been made [2]	$0.25/m^3
All Species	HF	Hogged tree material from post-harvest material where a waste assessment has been made [2]	$0.25/m^3
All Species		Grades 4 and 6, except where the upset stumpage rate is determined under section 6.2.1(1)(a) and (b) and 5.1.1(5)	$0.25/m^3
Deciduous Species		All, except grades 4 and 6 and except where the upset stumpage rate is calculated under section 6.2.1(1)(a) and (b) and 5.1.1(5)	$0.50/m^3
All Species	SS	Stakes & Sticks.	$1.20/m^3
All Species	XM	Christmas Tree: under 3m 3-5 m over 5 m	$0.20/each $1.00/each $1.50/each
All Species		Logs salvaged below the high water levels of Reservoir Lakes and the Shuswap, Slocan, Kootenay, Mineral, Babine and Ootsa Lakes	$0.25/m^3
All Species		Marine Beachcomb	$0.70/m^3
All Coniferous		For logs harvested from the following Research Forests: Alex Fraser (UBC), Aleza Lake (UBC and UNBC), College of New Caledonia (CNC), and Fort St. James (UNBC)	$0.25/m^3
All Species		Firmwood Reject	NIL

[1] Special Forest Products as described in the Special Forest Products Regulation under the *Act.*

[2] Where the post harvest material is removed under a different tenure from the original cruise based cutting authority, a waste assessment is not required.

District/TSA Specific

Description of Activity	Forest District/TSA	Reserve Stumpage Rate
New Crown land area disturbed for mining exploration trails, seismic lines[1], gas or oil well sites and right-of-way to well sites [2], mine sites and rights of way to mine sites[3], or, authorizations for investigative purposes issued under the *Land Act.*	Rocky Mountain Peace Ft. Nelson Mackenzie Cassiar	$1,821/ha $724/ha $836/ha $424/ha $872/ha

[1] The corresponding district reserve stumpage rate from the above table is adjusted according to the category of line clearing as follows:

Category 1 - no adjustment
Category 2 - 1/2 of the reserve stumpage rate
Category 3 - 1/3 of the reserve stumpage rate

The gross area for each category reported as new line on either; the Oil and Gas Commission's Geophysical Final Plan cover sheet or an As Cleared Plan is multiplied by the reserve stumpage rate as adjusted above (refer to Appendix V for category definitions).

[2] For pipe line rights-of-way a stumpage rate must be determined by using the above rates for cutting authorities containing 2 000 m^3 or less, of merchantable coniferous volume. For pipe line rights-of-way cutting authorities greater than 2 000 m^3 see section 6.7.

[3] Cassiar TSA only

6.7 Linear Tenures

1. For this section:

   "Linear tenures" means a licence to cut issued for:

   - A right-of-way to a mine site, or
   - Activities listed in Table 6-6 with an area reserve stumpage rate in a district other than Fort Nelson, Peace, Mackenzie, Rocky Mountain, Cassiar TSA, or
   - A pipeline right-of-way where the volume of timber on the cutting authority area is greater than 2 000 cubic metres, or
   - A pipeline right-of-way where the volume is 2 000 m^3 or less in a district other than Fort Nelson, Peace, Mackenzie, or Rocky Mountain, Cassiar TSA, or
   - A hydro transmission line, or
   - A highway right-of-way for a road administered by the *Ministry of Transportation and Infrastructure*, or
   - A forestry licence to cut issued under section 47.6(3) of the *Act* in conjunction with a BCTS road development contract, or
   - A fence line or protection of a fence line administered under the *Range Act*, or
   - Roads authorized under the *Land Act.*

   "Licensee" means the licensee who has been issued a linear tenure.

2. The stumpage rate for a linear tenure shall be the stumpage rate prescribed in Table 6-3 for the smaller of the area of the forest district, timber supply area or region in which the entire cutting authority area for the linear tenure is located.

3. The costs of roads constructed on the cutting authority area for a linear tenure are only eligible for inclusion as part of the development cost estimate in the licensee's first fully appraised tributary cutting authority area if those costs were not used in a full appraisal under subsection (4) of this section.

4. a. Notwithstanding any other subsection in this section the stumpage rate for a linear tenure may be determined through a full appraisal.

   b. Where the stumpage rate is determined in accordance with this subsection, the cruise data that is used in the appraisal may be from the cruise of a comparable cutting authority as per section 1.5.1.1.

5. A stumpage rate determined under this section shall be fixed for the term of the linear tenure and all extensions.

6.8 Controlled Recreation Areas (CRAs)

1. The sawlog stumpage rate for coniferous timber harvested under any cutting authority issued for a cutting authority area within a CRA is the stumpage rate approved by the director for each quarter.

2. The stumpage rate determined under subsection (1) is redetermined on the anniversary date of the cutting authority in accordance with this section.

3. Notwithstanding any other subsection in this section, the stumpage rate may be determined through a full appraisal in accordance with chapters 1, 2, 3, 4 and 5.

6.9 Cruise Based Stumpage Calculations

1. Pursuant to section 106 of the *Forest Act*, and subject to subsection 2 of this section, the amount of stumpage payable on Crown timber will be calculated using information provided by a cruise of the timber before it is cut where the timber is authorized for harvest:

    a. Under a cutting authority issued or entered into prior to June 1, 2010 where:

        i. the stumpage rate is adjustable,

        ii. the net merchantable coniferous volume of timber on the cutting authority area is comprised of 35% or more red and grey Mountain Pine Beetle (MPB) attacked Lodgepole pine, and

        iii. timber harvesting has not started on the cutting authority, or,

    b. Under a cutting authority issued or entered into on or after June 1, 2010 where:

        i. the stumpage rate is adjustable,

        ii. the licensee applied for a cutting permit and submitted an ADS to the district manager before June 1, 2010, and,

        iii. the net merchantable coniferous volume of timber on the cutting authority area is comprised of 35% or more red and grey MPB attacked Lodgepole pine, or,

    c. Under a cutting authority issued or entered into on or after June 1, 2010 where:

        i. the stumpage rate is adjustable,

        ii. the licensee submitted an ADS to the district manager on or after June 1, 2010, and

        iii. the net merchantable coniferous volume in each cutblock within the cutting authority area is comprised of 35% or more red and grey MPB attacked Lodgepole pine, or,

    d. Except as provided in subsection (4) of this section, under a timber sale licence with a fixed stumpage rate, which meets the criteria in paragraph (1)(c) (ii) and (iii) of this section, or a timber sale licence with a fixed stumpage rate where the executive director, BCTS has approved cruise based under section 106 of the *Act.*

2. Except as provided in subsections (3) and (4) of this section, and section 5.1.3(4), the stumpage rate effective July 1, 2010 for a cutting authority where the stumpage payable is cruise based shall be calculated as stand as a whole in accordance with the following:

    a. the stumpage rate is determined using chapters 1, 2, 3, 4 and 5 of this manual,

    b. the stumpage rate determined under paragraph (a) of this subsection shall apply to the net merchantable volume on the cutting authority area.

3. Except as provided in subsections (4) and (6) of this section, if, after a reappraisal under section 2.2.3 of this manual:

    a. the net merchantable coniferous volume in each cutblock within the cutting authority area is comprised of 35% or more red and grey MPB attacked Lodgepole pine, and

    b. timber harvesting has not yet started on the cutting authority area,

    The stumpage payable may be cruise based.

4. Where a timber sale licence was entered into under section 21 of the *Act* as that section was before it was repealed that provides for cutting permits and included a bonus bid, the stumpage payable will remain scale based.

5. Where an occupant licence to cut has been issued for the purposes of removing timber for agriculture, the stumpage payable shall be scale based.

6. Where a non-replaceable forest licence (NRFL) or a forestry licence-to-cut (FLTC) was advertised on the basis of competition, and the successful bidder's bonus bid only applied to the sawlog portion of the volume advertised, the stumpage payable for cutting permits issued under these licences shall remain scale based.

7. Where the sawlog volume of a cutting authority was advertised on the basis of competition and

    a. The cutting authority was issued prior to June 1, 2010, and

    b. The stumpage payable is cruise based,

    The bonus bid shall be prorated by the person who determines the stumpage rate using Tables 4-6 or 4-7 of this manual as per section 4.6.

Appendices

Appendix I Equipment and Labour Rates

(Cost Base July 1, 2010)

MACHINE DESCRIPTION	TYPICAL MODEL	$/HOUR
Crawler Tractor	Cat D9R, Komatsu D275AX-5, Dressta TD-40E	293.75
Crawler Tractor	Cat D9N (years: 1996 and older)	254.55
Crawler Tractor	Cat D8T, Komatsu D155AX-5B, Deere 1050J, Dressta TD-25M	224.85
Crawler Tractor	Cat D7RII, Komatsu D65/85, Deere 850/950, Dressta TD-15M	193.00
Crawler Tractor	Cat D6T, Dresser TD15H, Komatsu D51/61, Deere 750J/850J	154.10
Crawler Tractor	Cat D5K, Case 1150H, Komatsu D37/39/	129.90
Rock Drill (includes two operators)	Compressor: 750 cfm on tank chassis (includes-Tank Drill outfit)	238.77
Grader	Cat 160M, Deere 772/872, Case 885	140.55
Front End Loader (Gravel)	Cat 966H, Komatsu WA450, Case 921C Deere 744J, Volvo L150E	159.00
Front End Loader (Logs)	Komatsu WA480-6, Volvo L180E, Deere 824J	183.75
Hydraulic Excavator incl. Brush Guard & Thumb	Cat 345 DL, Komatsu PC400LC, Case CX460/800	271.10
Hydraulic Excavator incl. Brush Guard & Thumb	Komatsu PC300HD-7 /400 (out of date model)	214.94
Hydraulic Excavator incl. Brush Guard & Thumb	Hitachi ZX350LC, Komatsu PC300-8, Volvo EC330C, Cat 330D	197.84
Hydraulic Excavator incl. Brush Guard & Thumb	Cat 325DL, Hitachi ZX270LC, Deere 270D-LC	181.61
Hydraulic Excavator incl. Brush Guard & Thumb	Cat 322C, Komatsu PC220LC, JD 230C-LC	168.08
Hydraulic Excavator incl. Brush Guard & Thumb	Cat 320CL, Hitachi ZX200LC, JD 200C-LC	157.30
Gradall	Cat M325D L MH	181.05
Logging Truck (Highway)	All Triaxle (6axle) tandem tractor & lowbed w/ booster	115.20
Self Loading Log Truck	Highway log truck + 5 tonne deck crane	128.10
Gravel Truck	10.7 m^3 (14 cu. yd.)	99.83
Gravel Truck Articulated (labour included)	25 - 29 tonne: Cat 730, Deere 300D, Terex TA27/30 Volvo A30E	172.60
Gravel Truck Articulated (labour included)	20 - 24 tonne: Cat 725, Deere 250D, Terex TA25 Volvo A25E	155.70
Lowbed	5 axle unit: tandem tractor and lowbed	104.45
Lowbed	7 axle unit: A or B train (or triple axle with booster)	132.45
Concrete Mix Truck	6.1 m^3 (8 cu yd)	101.95
Concrete Vibrator (labour not included)	3.65 m – 6.10 m (12' to 21')	5.01
Concrete Mixer (labour not included)	0.17 m^3 (6 cu ft)	7.60
Crane - Truck Mounted	18 tonne	113.65
Soft Track Skidder	KMC/FMC 2100/2400 (out-of-date model)	144.05
Rubber Tired Skidder	Cat 515 Clark F/H-66 TJ 360D (out-of-date model)	101.00
Vibrator Compactor	Cat 515 plus 2.7 t to 3.6 t roller	115.45
Tractor and Grid Roller	Cat 515 plus grid roller	116.25
Labourer	Group I: Includes 40% payroll loading	35.33
Roadman	Group II: Includes 40% payroll loading	35.62
Crib/Culvert Maker, Powderman	Group VII: Includes 40% payroll loading	37.42
Landingman	Group VIII: Includes 40% payroll loading	37.89
Rockdriller & Powderman (for load & blast only)	Group VII & XI: Includes 40% payroll loading	81.43
Bridgeman	Tradesman: Includes 40% payroll loading	46.32
Powersaw (labour not included)	All: one man, 20 inches + bar	3.60
Faller, including powersaw cost	Includes 40% payroll loading	66.72

Sources:

2010/2011 B.C. Road Builders & Heavy Construction Association, Equipment Rental Rate Guide (rates based on a 3-year old machine), and IWA agreement rates including payroll loading.

1. Except as provided in (6), the rates shown in Appendix I will be used for all detailed engineering cost estimates made under section 4.3.3 of this manual.

2. The machine rate includes labour for the operator (all found). There are no additions.

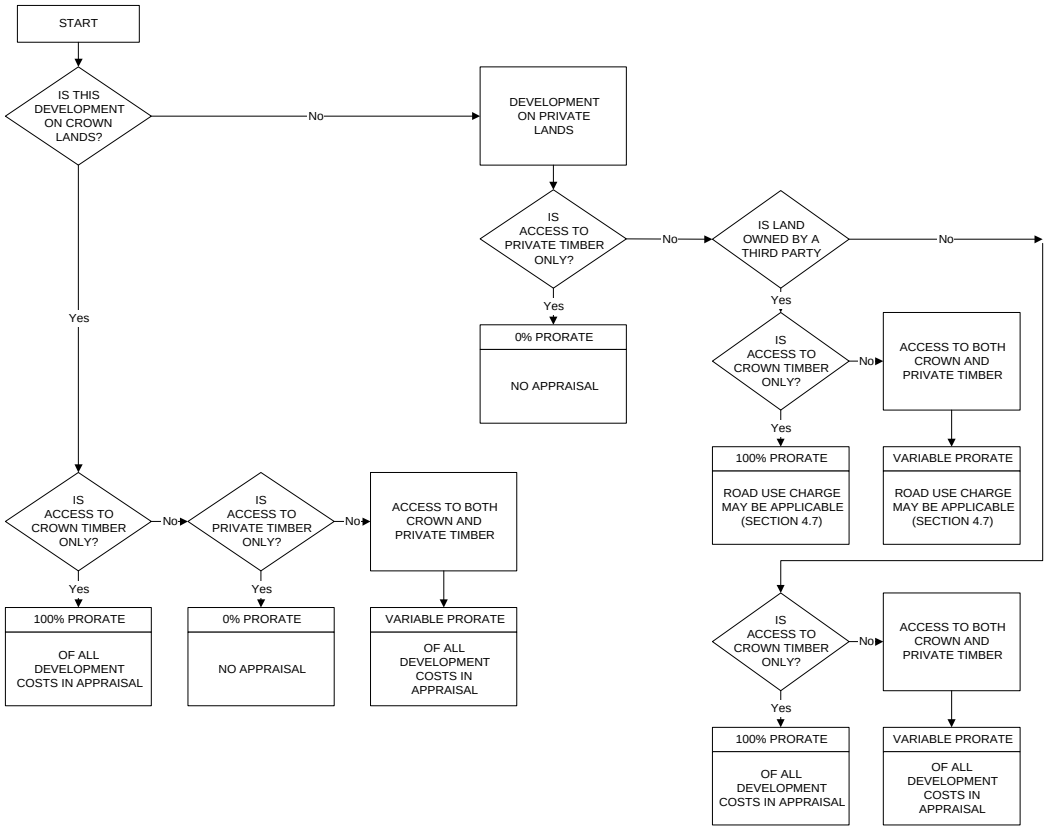
3. Notwithstanding (4) and (5), crew transportation, supervision and camp / cookhouse costs where applicable are included in this manual and no additions are permitted.

4. Licensees that incur camp costs (as defined in section 3.6.3 and recovers the said camp costs from a contractor and credits an account, in the books of the licensee, are permitted $50.00 per person day for staying at the camp.

5. Licensees that incur costs for crew transportation and/or accommodation as part of Detailed Engineering Cost Estimates, which are not included in the standard phase costs of this manual are permitted $50.00 per person day.

6. Use of equipment rates not listed in this appendix must be approved by the regional timber pricing co-ordinator.

Appendix II Development Cost Allocation



Crown Timber = Appraised timber including appraised Timber Licences

Private Timber = Non-appraised timber

Variable Prorate = A tributary-volume type prorate between appraised and non-appraised timber

Appendix III Relative Soil Moisture to Absolute Soil Moisture Conversion Table

Region	BEC		Relative Soil Moisture Regime Class (from field guide)							
	Zone	Subzone	0	1	2	3	4	5	6	7
SIR	BG	xh1	ED	ED	ED	ED	ED	SD	M	W
SIR	BG	xh2	ED	ED	ED	ED	ED	SD	M	W
SIR	BG	xh3	ED	ED	ED	ED	ED	SD	M	W
SIR	BG	xw1	ED	ED	ED	ED	ED	SD	M	W
SIR	BG	xw2	ED	ED	ED	ED	ED	SD	M	W
SIR	ESSF	dc1	VD	MD	MD	SD	SD/F	M	VM	W
SIR	ESSF	dc2	VD	MD	MD	SD	SD/F	M	VM	W
SIR	ESSF	dk	VD	MD	MD	SD	SD/F	M	VM	W
SIR	ESSF	dv	VD	MD	MD	SD	SD/F	M	VM	W
SIR	ESSF	mw	VD	MD	MD	SD	F	M	VM	W
SIR	ESSF	vc	MD	SD	SD	F	M	VM	VM	W
SIR	ESSF	vv	MD	SD	SD	F	M	VM	VM	W
SIR	ESSF	wc1	MD	MD	SD	F	M	M	VM	W
SIR	ESSF	wc2	MD	MD	SD	F	M	M	VM	W
SIR	ESSF	wc3	MD	MD	SD	F	M	M	VM	W
SIR	ESSF	wc4	MD	MD	SD	F	M	M	VM	W
SIR	ESSF	wk1	MD	MD	SD	F	M	M	VM	W
SIR	ESSF	wm	MD	MD	SD	F	F	M	VM	W
SIR	ESSF	xc	VD	VD	MD	MD	SD	M	VM	W
SIR	ESSF	xv	VD	VD	MD	MD	SD	F	M	W
SIR	ICH	dk	VD	VD	VD	MD	SD	M	VM	W
SIR	ICH	dw1	VD	VD	MD	SD	F	M	VM	W
SIR	ICH	dw2	ED	ED	VD	MD	SD	M	VM	W
SIR	ICH	mk1	VD	MD	MD	SD	F	M	VM	W
SIR	ICH	mk1	VD	MD	MD	SD	F	M	VM	W
SIR	ICH	mk2	VD	MD	MD	SD	F	M	VM	W
SIR	ICH	mk3	VD	MD	MD	SD	F	M	VM	W
SIR	ICH	mw1	VD	MD	MD	SD	F	M	VM	W

Region	BEC		Relative Soil Moisture Regime Class (from field guide)							
	Zone	Subzone	0	1	2	3	4	5	6	7
SIR	ICH	mw2	VD	MD	MD	SD	F	M	VM	W
SIR	ICH	mw3	VD	MD	MD	SD	F	M	VM	W
SIR	ICH	vk1	MD	MD	SD	F	M	M	VM	W
SIR	ICH	wk1	VD	MD	SD	F	F	M	VM	W
SIR	ICH	wk2	VD	MD	SD	F	F	M	VM	W
SIR	ICH	wk4	VD	MD	SD	F	F	M	VM	W
SIR	ICH	xw	VD	VD	VD	MD	SD	M	VM	W
SIR	IDF	dk1	ED	VD	VD	VD	MD	F	M	W
SIR	IDF	dk2	ED	VD	VD	VD	MD	F	M	W
SIR	IDF	dk3	ED	VD	VD	VD	MD	F	M	W
SIR	IDF	dk4	ED	VD	VD	VD	MD	F	M	W
SIR	IDF	dm1	ED	VD	VD	VD	MD	F	M	W
SIR	IDF	dm2	ED	VD	VD	VD	MD	F	M	W
SIR	IDF	mw1	VD	VD	VD	MD	SD	F	VM	W
SIR	IDF	mw2	VD	VD	VD	MD	SD	F	VM	W
SIR	IDF	u	ED	VD	VD	MD	MD	F	VM	W
SIR	IDF	ww	VD	VD	VD	MD	SD	F	M	W
SIR	IDF	xh1	ED	ED	VD	VD	MD	SD	M	W
SIR	IDF	xh2	ED	ED	VD	VD	MD	SD	M	W
SIR	IDF	xm	ED	ED	VD	VD	MD	SD	M	W
SIR	IDF	xw	ED	ED	VD	VD	MD	SD	M	W
SIR	MS	dc	VD	VD	VD	MD	SD	M	VM	W
SIR	MS	dk	VD	VD	VD	MD	SD	M	VM	W
SIR	MS	dm1	VD	VD	VD	MD	SD	M	VM	W
SIR	MS	dm2	VD	VD	VD	MD	SD	M	VM	W
SIR	MS	xk	VD	VD	VD	VD	MD	F	M	W
SIR	MS	xv	VD	VD	VD	MD	SD	F	VM	W
SIR	PP	dh1	ED	ED	ED	VD	VD	SD	M	W
SIR	PP	dh2	ED	ED	ED	VD	VD	SD	M	W

Region	BEC		Relative Soil Moisture Regime Class (from field guide)							
	Zone	Subzone	0	1	2	3	4	5	6	7
SIR	PP	xh1	ED	ED	ED	ED	VD	SD	M	W
SIR	PP	xh2	ED	ED	ED	ED	VD	SD	M	W
SIR	SBPS	dc	ED	ED	VD	MD	SD	F	M-VM	W
SIR	SBPS	mc	VD	VD	VD	MD	SD	F	M-VM	W
SIR	SBPS	mk	ED	VD	VD	MD	SD	F	M-VM	W
SIR	SBPS	xc	ED	ED	VD	VD	MD	SD	M	W
SIR	SBS	dw1	VD	MD	MD	SD	SD	F	M	W
SIR	SBS	dw2	VD	MD	MD	SD	SD	F	M	W
SIR	SBS	mc1	VD	MD	MD	SD	F	M	VM	W
SIR	SBS	mc2	VD	MD	MD	SD	F	M	VM	W
SIR	SBS	mh	VD	MD	MD	SD	SD	M	VM	W
SIR	SBS	mm	VD	MD	MD	SD	F	M	VM	W
SIR	SBS	mw	VD	MD	MD	SD	F	M	VM	W
SIR	SBS	wk1	VD	MD	SD	F	F	M	VM	W
NIR	BWBS	dk	VD	MD	MD	SD	F	M	VM	W
NIR	BWBS	mk	VD	MD	MD	SD	F	M	VM	W
NIR	BWBS	mw	VD	MD	MD	SD	F	M	VM	W
NIR	BWBS	wk1	VD	MD	SD	SD	F	M	VM	W
NIR	BWBS	wk2	VD	MD	SD	SD	F	M	VM	W
NIR	BWBS	wk3	VD	MD	SD	SD	F	M	VM	W
NIR	CWH	vh2	SD	SD	F	F	M	VM	W	W
NIR	CWH	vm1	MD	SD	SD	F	F	M	VM	W
NIR	CWH	vm2	MD	SD	SD	F	F	M	VM	W
NIR	CWH	wm	SD	SD	SD	F	F	M	VM	W
NIR	CWH	ws1	VD	MD	MD	SD	F	M	VM	W
NIR	CWH	ws2	VD	MD	MD	SD	F	M	VM	W
NIR	ESSF	mc	VD	MD	SD	SD	F	M	VM	W

Region	BEC		Relative Soil Moisture Regime Class (from field guide)							
	Zone	Subzone	0	1	2	3	4	5	6	7
NIR	ESSF	mk	VD	MD	MD	SD	F	M	VM	W
NIR	ESSF	mm1	VD	MD	MD	SD	F	M	VM	W
NIR	ESSF	mv1	VD	MD	SD	SD	F	M	VM	W
NIR	ESSF	mv2	VD	MD	SD	SD	F	M	VM	W
NIR	ESSF	mv3	VD	MD	SD	SD	F	M	VM	W
NIR	ESSF	mv4	VD	MD	SD	SD	F	M	VM	W
NIR	ESSF	wc2	MD	MD	SD	F	M	M	VM	W
NIR	ESSF	wc3	MD	MD	SD	F	M	M	VM	W
NIR	ESSF	wk1	MD	MD	SD	F	M	M	VM	W
NIR	ESSF	wk2	MD	MD	SD	F	M	M	VM	W
NIR	ESSF	wv	MD	SD	SD	F	F	M	VM	W
NIR	ICH	mc1	VD	MD	SD	SD	F	M	MV	W
NIR	ICH	mc1a	VD	MD	SD	SD	F	M	MV	W
NIR	ICH	mc2	VD	MD	SD	SD	F	M	MV	W
NIR	ICH	mm	VD	MD	MD	SD	F	M	VM	W
NIR	ICH	vc	MD	SD	SD	F	M	M	VM	W
NIR	ICH	vk2	MD	SD	SD	F	M	M	VM	W
NIR	ICH	wc	MD	MD	SD	F	F	M	VM	W
NIR	ICH	wk1	VD	MD	SD	F	F	M	VM	W
NIR	ICH	wk3	VD	MD	SD	F	F	M	VM	W
NIR	ICH	wk4	VD	MD	SD	F	F	M	VM	W
NIR	MH	mm1	SD	SD	F	F	F	M	VM	W
NIR	MH	mm2	SD	SD	F	F	F	M	VM	W
NIR	MH	wh	SD	SD	F	F	F	M	VM	W
NIR	SBPS	mc	VD	VD	VD	MD	SD	F	M-VM	W
NIR	SBS	dh	VD	MD	MD	SD	SD	F	M	W
NIR	SBS	dk	VD	MD	MD	SD	SD	F	M-VM	W
NIR	SBS	dw1	VD	MD	MD	SD	SD	F	M	W

Region	BEC Zone	Subzone	Relative Soil Moisture Regime Class (from field guide) 0	1	2	3	4	5	6	7
NIR	SBS	dw2	VD	MD	MD	SD	SD	F	M	W
NIR	SBS	dw3	VD	MD	MD	SD	SD	F	M	W
NIR	SBS	mc2	VD	MD	MD	SD	F	M	VM	W
NIR	SBS	mc3	VD	MD	MD	SD	F	M	VM	W
NIR	SBS	mh	VD	MD	MD	SD	SD	M	VM	W
NIR	SBS	mk1	VD	MD	MD	SD	F	M	VM	W
NIR	SBS	mk2	VD	MD	MD	SD	F	M	VM	W
NIR	SBS	mw	VD	MD	MD	SD	F	M	VM	W
NIR	SBS	vk	MD	SD	SD	F	M	M	VM	W
NIR	SBS	wk1	VD	MD	SD	F	F	M	VM	W
NIR	SBS	wk2	VD	MD	SD	F	F	M	VM	W
NIR	SBS	wk3	VD	MD	SD	F	F	M	VM	W
CFR	CDF	mm	VD	VD	MD	MD	MD	SD	F	W
CFR	CWH	dm	VD	MD	MD	SD	F	M	VM	W
CFR	CWH	ds1	VD	MD	MD	SD	F	M	VM	W
CFR	CWH	ds2	VD	MD	MD	SD	F	M	VM	W
CFR	CWH	mm1	MD	SD	SD	F	F	M	VM	W
CFR	CWH	mm2	MD	SD	SD	F	F	M	VM	W
CFR	CWH	ms1	VD	MD	MD	SD	F	M	VM	W
CFR	CWH	ms2	VD	MD	MD	SD	F	M	VM	W
CFR	CWH	vh1	SD	SD	F	F	M	VM	W	W
CFR	CWH	vh2	SD	SD	F	F	M	VM	W	W
CFR	CWH	vm1	MD	SD	SD	F	F	M	VM	W
CFR	CWH	vm2	MD	SD	SD	F	F	M	VM	W
CFR	CWH	wh1	SD	SD	SD	F	F	M	VM	W
CFR	CWH	wh2	SD	SD	SD	F	F	M	VM	W
CFR	CWH	ws2	VD	MD	MD	SD	F	M	VM	W

Region	BEC		Relative Soil Moisture Regime Class (from field guide)							
	Zone	Subzone	0	1	2	3	4	5	6	7
CFR	CWH	xm	VD	MD	MD	SD	F	M	VM	W
CFR	ESSF	mw	VD	MD	MD	SD	F	M	VM	W
CFR	IDF	ww	VD	VD	VD	MD	SD	F	M	W
CFR	MH	mm1	SD	SD	F	F	F	M	VM	W
CFR	MH	mm2	SD	SD	F	F	F	M	VM	W
CFR	MH	wh	SD	SD	F	F	F	M	VM	W

NOTES: ED = Extremely Dry (0, extreme xeric)
VD = Very Dry (1, xeric)
MD = Moderately Dry (2, sub-xeric)
SD = Slightly Dry (3, sub-mesic)
F = Fresh (4, mesic)
M = Moist (5, sub-hygric)
VM = Very Moist (6, hygric)
W = Wet (7, sub-hydric)

Absolute Soil Moisture Code	
ED, VD, or MD	D-Dry
SD or F	M-Moist
M, VM or W	W-Wet

Appendix IV Appraisal Map Content

The map(s) submitted with the appraisal data submission must be at a scale of 1:5000 or 1:10000. Additional maps at other scales may be included as required. At a minimum the map(s) shall indicate the following information:

a. Cutting authority boundaries.

b. Delineation of retention or reserved areas within the cutting authority.

c. Delineation of biogeoclimatic zone, subzone and variant areas.

d. Delineation of areas by harvest method (ground, cable, or helicopter, etc.) and partial cut %.

e. Delineation of areas that are the subject of specified operations cost estimates (e.g., root disease control).

f. The geographic centre point of each cutblock and common junction of the permit.

g. Existing roads.

h. Roads to be built by type (long term, short term) and by section, as submitted in the ADS, including sections to be gravelled and or sections that are “wet” (as defined in this manual).

i. Location of roads/structures that are included in detailed engineered estimates.

j. Location and type of other development such as remedial fencing, cattleguards and pipeline crossings.

k. Map Scale indicated using a graphic bar scale.

The appraisal map may include other information considered relevant to the appraisal, and may be attached to the appraisal data submission in electronic format.

For reappraisal data submissions, reference may be made to the original map submitted. Any change to the harvest plan or area of harvest due to a “changed circumstance (section 2.2.1) during the term of the cutting authority must be mapped and submitted to the district with the ADS, for the reappraisal.

Appendix V Geophysical Clearance Line Categories

The following categories of geophysical line clearing apply to Table 6-6. All clearing activity in the categories below must follow the best practices of meandering avoidance, line of site to a maximum of 200 metres, and avoidance of merchantable timber wherever possible. Failure to employ these best practices (as determined by the district manager) will result in the line clearing being billed as Category 1. The categories are defined as follows:

Category 1 - Any line section over 100 metres in length and over 4.25 metres in width.

Category 2 - Any line section over 100 metres in length and between 3.0 metres and 4.25 metres in width.

Category 3 - Any line section over 100 metres in length and less than 3.0 metres in width.

Index

F

G

H

I

L

M

N

O

P

R

S

T

U

W

This page is intentionally left blank.