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July 28, 2005

BY EMAIL

To: Interior Regional Managers

From: The Honourable Rich Coleman
Minister of Forests and Range
and Minister Responsible for Housing

Re: Amendment No. 5 to the *Interior Appraisal Manual*

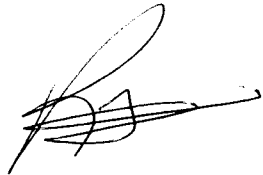
I hereby approve Amendment No. 5 to the *Interior Appraisal Manual*, and attach a copy for your use. The following sections have been amended.

- | | |
|--------------------|---|
| Section 1.5: | Reference to Section 47.6(3) of the <i>Forest Act</i> is added. |
| Section 2.3.2: | Exceptions to the definition of a reappraisal are added. |
| Section 2.3.2.1: | Revised text for consistency with the <i>Coast Appraisal Manual</i> . |
| Section 2.4(1)(2): | Revised to read "reappraisal" and section reference corrected. |
| Section 2.4.1: | Revised text reorganizes the section and sets the effective date to be the most recent appraisal or reappraisal. |
| Section 2.4.2: | Addition of a "map" as part of the appraisal data submission as part of a minister's directed reappraisal. |
| Section 2.5(2): | Revised text for consistency with the <i>Coast Appraisal Manual</i> . A new subsection adds an exception for blanket salvage cutting permits. |
| Section 4.3.1.1.5: | Revised text to address changes in legislation where cut blocks no longer need to be identified in some planning documents specifically for woodlots. |
| Section 4.3.3: | New category for forwarding roads detailed engineering estimate is added. |
| Section 4.4.2(6): | Revised text in the distance to support centre to be consistent with the new isolated cutting authority definition. |
| Section 4.8.2: | New definition of "isolated cutting authority" replaces the previous definition. |
| Section 6.2: | Reference to Chapter 7 is added and reference to the <i>Cruising Manual</i> is updated. |



- Section 6.6: Revised text refers the user to the appropriate section for data requirements. Revised terminology "non adjusting" replaces the term "fixed".
- Section 6.8: Revised text in Table 6-4 to support the change for BC Timber Sales (BCTS) deciduous sales as well as indicating that the per hectare clearing rates now apply to mining exploration trails as well.
- Section 7.1: An exception is added to support the changes for BCTS deciduous sales.
- Section 7.2.4: An exception is added indicating the upset rate applies to both coniferous and deciduous saw logs for BCTS deciduous sales.
- Section 7.5.1: New subsection is added implementing a method of calculating an upset for BCTS deciduous sales to use in comparison with the variable cost to prepare the sale. The greater of the two will be the upset used.
- Section 7.5.2: Revised definition of the discount factor in the formula to support the changes for BCTS deciduous sales.
- Appendix IV: Addition requirement of a graphic bar scale is added to the map content list.

Rich Coleman
Minister



Attachment

pc: Bill Howard, Director, Revenue Branch

Interior Appraisal Advisory Committee



FOR FURTHER INFORMATION CONTACT:

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Interior Appraisal Manual

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Amendment No. 5

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MANUAL CO-ORDINATOR

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AUTHORIZATION (Name, Title)

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Director, Revenue Branch

Please make the following changes to your copy of the above Ministry manual. Please insert the following specified pages and **file this notice** immediately after the Amendments Tab.

ACTION (Remove/Insert)	(VOL.) CHAPTER-SECTION-SUBJECT TABLE OF CONTENTS	PAGE(S)	COMMENTS
REMOVE	Table of Contents	i - iv	After Table of Contents Tab
INSERT	Table of Contents	i - iv	
REMOVE	Chapter 1	5 - 6	After Chapter 1 Tab
INSERT	Chapter 1	5 - 6	
REMOVE	Chapter 2	5 - 12	After Chapter 2 Tab
INSERT	Chapter 2	5 - 12	
REMOVE	Chapter 4	5 - 6 11 - 12 23 - 24 27 - 28 45 - 46	After Chapter 4 Tab
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REMOVE	Chapter 6	3 - 4 9 - 10 13 - 14	After Chapter 6 Tab
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REMOVE	Chapter 7	1 - 4 9 - 12	After Chapter 7 Tab
INSERT	Chapter 7	1 - 4 9 - 12	
REMOVE	Appendix	11 - 12	After Appendix Tab
INSERT	Appendix	11 - 12	
REMOVE	Index	1 - 4	After Index Tab
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INSERT	Minister's Letter and Manual Revision Transmittal		After Amendments Tab

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1.4 Responsibility for Stumpage

For the purposes of section 105 of the *Forest Act*, the following employees of the ministry are authorized to determine, redetermine and vary stumpage rates.

- regional manager, regional timber pricing co-ordinator, an employee of the regional revenue section designated by the regional manager, and
- director, Revenue Branch, Ministry of Forests and an employee of Revenue Branch.

1.5 Market Pricing System

The Market Pricing System (MPS), subject to a minimum stumpage rate, is the basis for determining stumpage rates for Timber Sale Licences awarded under sections 20, 21, and 47.6(3) of the *Forest Act* after January 1, 1999.

2.3 Redeterminations and Reappraisals

2.3.1 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 of the Ministry of Forest authorized to redetermine a stumpage rate under section 1.4 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, 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.

2.3.2 Reappraisals

1. A reappraisal is a process used to redetermine a stumpage rate for a cutting authority area using the *Interior Appraisal Manual* in effect on the effective date of the reappraisal.
2. Except as provided in section 2.3.2.1(1)(d), 2.3.2.2, and 2.3.2.3, a reappraisal is based on a complete reassessment of the cutting authority area at the time of the reappraisal, as if the area has been returned to the condition it was in prior to development or harvesting.
3. At the time of a reappraisal, initial detailed engineering cost estimates may be re-estimated once after construction utilizing information as specified in section 4.3.3. However, development costs originally estimated using ministry approved competitive bids are not re-estimated in a reappraisal.

2.3.2.1 Changed Circumstances

1. In this section a changed circumstance means a circumstance where:
 - a. (i) The licensee plans to use a method of harvest to harvest at least fifteen percent of the volume of timber in the cutting authority area that is different from the method planned to be used for that timber at the time of the most recent appraisal or reappraisal of the cutting authority area, and
 - (ii) the different method of harvesting that is planned to be used:

- aa) when used in the changed circumstance reappraisal will produce the least cost total harvesting, development, and transportation cost estimate, and
 - bb) is different from the method of harvesting that was used in the most recent appraisal or reappraisal, or
 - b. there will be at least a fifteen percent change in the total appraised development cost estimate from the total development cost estimate used in the most recent appraisal or reappraisal due to changed site conditions upon reappraisal, or
 - c. land containing merchantable timber has been either added to or deleted from the cutting authority area since the most recent cruise compilation or recompilation was used in an appraisal or reappraisal that exceeds the lesser of
 - i. fifteen hectares, or
 - ii. fifteen percent of the area of the cutting authority area as it was prior to the addition or deletion of the land, or
 - d. at least fifteen percent of the volume of the appraised timber in a cutting authority area has been suddenly and severely damaged, unless the timber was damaged by a fire for which the licensee was responsible and the licensee failed to comply with any of section 75 through 95 of the *Forest Practices Code of British Columbia Act* or the *Forest Fire Prevention and Suppression Regulation*. Despite subsection 2.3.2(2) where the cutting authority area is reappraised because of sudden and severe damage the redetermined stumpage rate is based upon the remaining timber only. The reappraisal cost estimate for development takes into account volume of timber already removed from the cutting authority area. This subsection is applicable to cutting authorities with either a non-adjusting (fixed) stumpage rate or a quarterly adjusted stumpage rate.
2. The licensee must notify the district manager immediately of a changed circumstance.
 3. Where the district manager believes that a changed circumstance has occurred, the district manager will immediately notify the licensee of that belief.
 4. A cutting authority area other than a cutting authority area that is the subject of a road permit or a cutting authority area with a non-adjusting stumpage rate, must be reappraised when a changed circumstance has occurred.
 5. Where a cutting authority is reappraised because of a changed circumstance, any bonus bid in existence does not change and remains in effect.

2.3.2.2 Annual Reappraisal for Road Permits and Blanket Salvage Cutting Permits

Refer to section 6.3 or 6.3.1 respectively.

2.3.2.3 Minister's Direction

1. The Minister of Forests may direct that a reappraisal be made at any time and that the redetermined stumpage rate be effective on any future date, and may specify criteria and procedures for the reappraisal.
2. A reappraisal directed by the Minister of Forests, may be a re-estimation of operating cost, lumber recovery factor, or selling price, or any combination of these, as may be directed by the Minister of Forests.

2.3.2.4 Mathematical Error

- a. If a government employee or contractor in the Ministry of Forests or a licensee (or employee or contractor of a licensee) becomes aware of what is or probably is a mathematical error in a stumpage determination, that person shall give written notice of the error ("the Notice") as follows:
 - i. in the case of appraisals and reappraisals, to the appropriate regional manager, and
 - ii. in the case of quarterly adjustments, to the director of Revenue Branch,
- b. the Notice shall describe the stumpage determination or determinations involved and shall describe the nature and cause of the error to the extent reasonably possible,
- c. upon receipt of the Notice, the regional manager or the director of Revenue Branch shall make the appropriate investigation to decide whether or not an error has, in fact, been made,
- d. if the regional manager or the director of Revenue Branch decides that an error has not been made, they shall notify the person who sent the Notice of the decision and the reasons for it,
- e. if the regional manager or director of Revenue Branch, decides that an error has been made, the following shall occur:
 - i. the regional manager or the director of Revenue Branch, shall notify the person who sent the Notice of the decision and the reasons for it,

- ii. the regional manager or the director of Revenue Branch, shall take reasonable steps to ensure that all licensees who have been affected by the error are informed of the Notice and of the nature and cause of the error,
 - iii. the cutting authority or authorities under which the error was made shall be reappraised or the quarterly stumpage adjustment recalculated to correct the error unless the cutting authority, the *Interior Appraisal Manual* or the application in tender for a timber sale licence specified that the stumpage rate is fixed, and
 - iv. the effective date of the redetermined rate shall be the first day of the month following the date on which the Notice was received by the regional manager or the director of Revenue Branch,
- f. if an error has occurred and no Notice has been given with respect to it, the Notice shall be deemed to have been given on the date on which the regional manager or the director of Revenue Branch, became aware of the error or probable error,
- g. no person who discovers or otherwise becomes aware of a mathematical error in a stumpage determination shall be obliged to send the Notice as required herein if that person, on reasonable grounds, believes that someone else has sent the Notice with respect to the same error,
- h. the redetermined rate does not apply to timber scaled before the first of the month following the date upon which the Notice was given. No remedy will be available with respect to timber scaled before the first of the month,
- i. in this section, a mathematical error is any of the following:
- i. an error in transcribing or compiling approved cruise field data, or in the application of approved loss factors and taper equations,
 - ii. an error in a calculation made as part of the appraisal data submission,
 - iii. an error in transcribing the data from an appraisal data submission or in performing the calculation specified in the manual, and
 - iv. an error in the application of published appraisal parameters,

A difference between cruise estimates and actual timber quality or quantity does not constitute an error in the appraisal.

A difference between appraisal estimates of selling price or operating cost and the licensee's experience does not constitute an error in the appraisal.

Omission of data by the licensee on an approved appraisal data submission does not constitute an error in the appraisal.

2.4 Changed Circumstance Reappraisal Procedure

1. The licensee shall submit to the district manager an interior appraisal data submission and map if the cutting authority area must be reappraised because of a changed circumstance under section 2.3.2.1.
2. The licensee shall submit to the district manager any other information required by the district manager or their designate for the purposes of the reappraisal.
3. The submissions under subsections (1) and (2) of this section must be signed by a registered professional forester (RPF) or registered forest technologist (RFT), registered with the Association of British Columbia Forest Professionals.
4. The district manager or their designate may review the licensee's submission and will notify the licensee, in writing, of any omissions, errors or provisions of the *Interior Appraisal Manual* that, in the opinion of the district manager or their designate, the signing RPF or RFT may not have considered. The licensee's signing RPF or RFT will consider the district manager's or their designate's notification and may revise the submission.
5. The district manager or their designate shall give any information supplied by the licensee under this section to the person who determines the stumpage rate together with any other information that the district manager or their designate considers relevant to the appraisal.
6. The person who determines the stumpage rate may review the licensee's submission and information supplied by the district manager or their designate, and will notify the licensee, in writing, of any omissions, errors or provisions of the *Interior Appraisal Manual* that, in the opinion of the person who determines the stumpage rate, the signing RPF or RFT may not have considered. The licensee's signing RPF or RFT will consider the notification and may revise the submission.
7. The person who determines the stumpage rate shall consider, when determining the stumpage rate:
 - a. any information provided by the licensee and the district manager or their designate, and
 - b. any information available to the person who determines the stumpage rate that is relevant to the reappraisal.
8. Regional staff will notify the licensee of the reappraised stumpage rate in the form of a stumpage advisory notice and will provide the licensee with a summary of the information used to determine the reappraised stumpage rate.

2.4.1 Effective Date of Changed Circumstance Reappraisal

1. Except as provided in subsections (2) and (3) of this section, a reappraisal because of a changed circumstance is effective on the effective date of the most recent appraisal or reappraisal of the cutting authority area prior to the changed circumstance reappraisal:
2. Where the changed circumstance is because of an amendment to the cutting authority area referred to in subsection 2.3.2.1(1)(c), the reappraisal is effective on the first day of the month following the date that the district manager approves the amendment.
3. Where the changed circumstance is a result of sudden and severe damage referred to in subsection 2.3.2.1 (1)(d), 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.

2.4.2 Minister Directed Reappraisal Procedure

1. The licensee shall submit to the district manager an interior appraisal data submission, **and map**, if requested by the district manager or their designate, within forty-five days of the minister's direction.
2. Thereafter, the ministerial direction reappraisal procedure shall be the same procedure as that required by subsections 2.4 (2) through 2.4 (8).

2.5 Fixed Stumpage Rate and Extension of Term

BC Timber Sales (BCTS)

1. A fixed stumpage rate for a BCTS cutting authority means that the reserve stumpage rate, levies and bonus bids will not change during the term of the cutting authority and all extensions. Except where:
 - a. a reappraisal is done under section 2.3.2.1(1)(d) due to sudden and severe damage or
 - b. a reappraisal is done under section 2.3.2.3 because of a minister's direction.

Woodlots

2. (a) The stumpage rate for a cutting authority issued under a woodlot licence shall be an adjusting stumpage rate unless:
 - (i) the stumpage rate for the cutting authority is changed to a non-adjusting stumpage rate under this subsection, or
 - (ii) the cutting authority is a road permit, or blanket salvage cutting permit, or
 - (iii) the stumpage rate has been determined under section 6.2(1)(a) or 6.4.
- (b) A licensee may choose to have an adjusting stumpage rate changed to a non-adjusting stumpage rate under this subsection by giving written notice to the regional timber pricing co-ordinator of that choice to the regional appraisal co-ordinator.
- (c) Where the licensee gives written notice to the regional timber pricing co-ordinator of that choice, the adjusting stumpage rate shall become a non-adjusting stumpage rate three (3) weeks after the regional timber pricing co-ordinator receives the notice.
- (d) On the date that the stumpage rate becomes a non-adjusting stumpage rate, the stumpage rate for the cutting authority continues to be the stumpage rate of the cutting authority that was in effect on that date.
- (e) Where a stumpage rate is changed from an adjusting stumpage rate to a non-adjusting stumpage rate, the stumpage rate for the cutting authority shall not change for the term of the cutting authority and all extensions from the date that the stumpage rate is changed to a non-adjusting stumpage rate, except where the cutting authority area is reappraised under section 2.3.2.1(1)(d) or under section 2.3.2.3.

Zonal Average Sawlog Stumpage Rates

3. Where the stumpage rate has been determined under section 6.2 or section 6.4 and the term of the cutting authority is extended, the stumpage rate shall continue unchanged during the term of the cutting authority.

Miscellaneous Stumpage Rates

4. Miscellaneous stumpage rates (section 6.8) will be based on the *Interior Appraisal Manual* in effect on the date of scale.

The net cruise volume (m^3) is the gross volume (m^3) less decay, waste and breakage by species. The cutting authority total net cruise volume is calculated by multiplying the net cruise volume per hectare (m^3/ha) by the total merchantable timbered area (ha) to be harvested, net cruise volume is rounded to the nearest cubic metre as required in the *Cruise Compilation Manual*.

Each reappraisal uses a cruise volume by species which is the original net cruise volume adjusted for amendments to the cutting authority since the last appraisal.

4.2.1 Comparative Cruising

Comparative cruising is defined as the borrowing of cruise data from an existing, appropriately comparable, cutting authority in place of site specific data for an appraisal of a new cutting authority. If there is time to perform a full cruise, then the timber will be cruised. However, comparative cruise data may be utilized for cutting authorities with volumes greater than $5\,000\text{ m}^3$ if:

- the area is in an approved Emergency Bark Beetle Management Area (EBBMA) as designated by the Minister of Forests and within an approved Emergency Management Unit (EMU) as designated by the beetle management coordinator,
- the licensee has previously harvested comparative cutting authority's in a timely manner, and
- the regional manager has determined that the requirement to perform a full operational cruise will delay expeditious harvesting and result in further damage.

Comparative cruise data will be chosen following procedures set out in section 2.1.2.2 of the *Cruising Manual*.

For cutting authorities with volumes of $5\,000\text{ m}^3$ or less refer to section 6.2.

4.2.2 Appraisal Data Submission

The form of appraisal Data Submission (ADS) that is required by the director of Revenue Branch may be found at:

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

4.2.3 Appraisal Map

The appraisal map must be completed in accordance with the requirements of Appendix IV.

4.3 Development

Development costs are estimated for each of two categories:

1. New construction.
2. Reconstruction and replacement.

Throughout this section the term "roads" includes roads, drainage and other pertinent structures.

- a. A total cost (\$) is calculated for each category of section 4.3.1, and 4.3.1.1. These category costs are summed to provide a total development cost estimate.
- b. In order to calculate a unit (\$/m³) cost by category, the applicable volume will be the total net cruise volume (as defined in section 4.2) or the remaining volume (section 4.3.1(2)). The applicable volume includes the deciduous volume where the licence requires harvesting in deciduous stands.

Tributary Volume

The costs for development works may only be allocated to the first tributary cutting authority, subject to section 4.3.1.1.5. A cutting authority is considered to be tributary:

1. If timber from the cutting authority is appraised over the development works in question, or
2. If the development works occur on a main service road. A main service road is defined as a main access road to the operation, necessary to maintain and supply the day-to-day harvesting activities of the cutting authority being appraised. To qualify, a main service road must be used on a regular basis for transportation of bulk fuels, supplies, equipment and the harvesting crew.

Development Cost Estimating

1. Tabular cost estimates are made for construction of roads and drainage structures using the applicable equations in section 4.3.2 of this manual. Tabular estimates must be used for an appraisal when physical dimensions and conditions fall within the tabular limitations.
2. Detailed engineering cost estimates are made when the physical dimensions and conditions of a road section or a drainage structure exceed the tabular limitations of the manual. A detailed engineering estimate is made according to section 4.3.3. Projects eligible for this costing method are listed in section 4.3.3.

5. If the existing road requires reconstruction or replacement after August 1, 1996, the cost estimate is made as described in section 4.3.1. If the existing road is on private land, road and land use charges may be recognized as described in section 4.7.

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

4.3.1.1.5 Extended Road Amortization

For new appraisals where the development cost estimate for roads accessing more than one tributary cutting authority exceeds \$4.00 per cubic metre, a written agreement may be made between the licensee and the regional manager, which distributes a portion of the development cost estimate to two or more tributary cutting authorities.

The agreement is subject to the following conditions:

1. Future tributary timber included in the extended road amortization agreement must be **either within the woodlot licence or** an approved cutting permit or cutblocks shown in the licensee's forest development plan, woodlot licence plan or forest stewardship plan in effect on the appraisal effective date.
2. The road portion that may be included in the agreement ends at the far boundary of the first cutting authority being appraised.
3. The agreement must indicate the cost estimate that is being distributed to each **existing or future** cutting authority.
4. The agreement must be signed by the licensee and the regional manager or the regional manager's designate.
5. The total lump sum costs may be adjusted once at reappraisal provided no harvest has occurred on any cutting authority included in the agreement
6. The costs apportioned to each cutting authority under the agreement may be adjusted once, in conjunction with section 4.3.1.1.5,(4), at reappraisal using the same ratio for distributing the costs as in the original agreement. The adjustment can only be made where no harvest has occurred on any cutting authority included in the agreement.
7. The agreement confers no obligation on the Crown to compensate licensees for any unamortized costs.

4.3.2 Tabular Cost Estimates

These roads are generally a single lane width with turnouts. These roads may or may not be stabilized (ballasted or surfaced) with additional materials.

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 up to 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)

Road sections are recorded in multiples of 0.1 km. Each section should be representative of a single moisture class. Each section should be 1 km or longer, although some individual section lengths less than 1 km but greater than 0.1 km are acceptable for extreme variations of slope or percent rock. The section length includes that portion traversing through landings. For ground skidding, short roads (up to and including 100 m long) that access single landings are included in the tree-to-truck cost estimates (section 4.4) and are not eligible for development cost estimates.

2. Road Type:

- Snow/Ice Road (WINTER): - A single lane seasonal 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, 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.
- Operational Road (OP): - A single lane road with turnouts, which does not meet the definition of a snow/ice road or a block road. Is generally built under the authority of a road permit but portions may be constructed under the cutting authority. An operational road exists within a cutblock when the road accesses

14. 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.
15. The costs of designing and constructing a forwarding road, where the timber pricing co-ordinator is satisfied that it will produce the least cost total development, harvesting and transportation estimate in the appraisal. A forwarding road is a road built to a design standard that is used to forward logs using skidding or specialized forwarding equipment. It is not used for the truck transport of logs.

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

1. Plans, profiles, cross-sections showing the ground and design grade lines.
2. Volume summary sheets showing excavation quantities by various soil types, for subgrade and stabilization.
3. Type of construction equipment and quantity of material to be used, or ministry approved competitive bid costing.
4. Location of borrow and waste areas to calculate material haul distances.

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

1. 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.
2. Where the bridge span is greater than 15.4 m, and/or the crib height is 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.
3. Where bridge materials are reused the cost estimate will include dismantling, transportation and reinstallation at the new site, but will exclude initial materials purchased and initial delivery costs.

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

1. Freight (for materials).
2. Provincial sales tax (for materials).
3. Supervision of construction of complex structures by a professional engineer.
4. Bridge certification by a professional engineer (maximum of three field trips) unless otherwise approved by the regional timber pricing co-ordinator (the costs for

professional engineers are permitted whether they are on the licensees staff or hired under contract).

5. Site plans, designs and layouts.
6. 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.

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

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

In some cases, the detailed engineering cost estimates may be apportioned to two or more licensees' tributary cutting authorities, as described under section 4.3.1.1.5.

4.3.3.1 Trending of Detailed Engineering Costs

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 4-5). This includes development costs in apportionment agreements, ministry approved competitive bid tenders, and ECE's prepared using Appendix I.

Table 4-5 Trend Factors for ECE Costs

ECE Cost Year	Multiply by this Trend Factor to Match the 2001 Cost Base
1995	1.045
1996	0.986
1997	0.917
1998	0.968
1999	1.017
2000	1.000
2001	1.000
2002	1.000
2003	1.000

a. PCUT

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.

The percent partial cut is determined as:

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

(except if partial cut percent $\geq 90\%$ then PCUT = 0).

b. Partial cut dummy variable (DPCUT)

DPCUT = 1 if partial cut percent is greater than 0 and less than 90, otherwise DPCUT = 0.

6. Distance to Support Centre (DS)

The one-way, **road** distance from the geographic centre of the cutting authority to the main post office (or other location designated by the regional timber pricing co-ordinator) in a community from the following list. The distance to support centre includes the distance covered by a daily barge or ferry service. Where there is more than one block in the cutting authority, the weighted average distance to support centre must be calculated using the individual distances and the individual block volumes. Where more than one alternative is possible, the least cost alternative is used. The distance is measured to the nearest kilometre. The following is a list of communities by forest region.

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			

For isolated cutting authorities (see section 4.8.2), the distance to support centre is the one-way road distance from the geographic centre of the cutting authority to the isolated camp (including that covered by the non-road portions of the route). Where more than one alternative is possible, the least cost alternative is used. The distance is measured to the nearest kilometre.

The following distance variables are included:

- NEWDIST200 = 0 IF DS ≤ 100 km
 = (DS-100) if DS > 100 km and ≤ 200 km
 = 100 if DS > 200 km
- DIST200S175 = 0 if DS ≤ 175 km
 = (DS-175) if DS > 175 km and ≤ 200 km
 = 25 if DS > 200 km

7. Volume per Tree (VOLTREE)

The average net cruise volume per tree (m^3), rounded to two decimals. For partial cutting, it is based on the trees to be harvested.

8. Gross Volume per Tree (GVOL)

Gross volume per tree (m^3) is computed as: $VOLTREE / (1 - \text{defect \%}/100)$.

Where:

Defect is the estimate of decay, waste and breakage (DWB) percent of the coniferous gross volume from the cruise summary for the trees to be harvested. Where utilization of deciduous volume is mandatory under the licence, defect percent is taken from the stand volume of the cruise summary. Defect percent is recorded to the nearest whole percentage point for appraisal calculation purposes.

9. Small Tree Volume (SMALL TREEVOL)

$SMALLTREEVOL$ = Average net merchantable volume (m^3) per tree if $< 0.34 m^3/\text{tree}$. If $\geq 0.34 m^3/\text{tree}$ $SMALLTREEVOL = 0$.

10. Small Tree Dummy Variable (SMALLTREED)

$SMALLTREED = 1$ if average net merchantable volume per tree $< 0.34 m^3/\text{tree}$, otherwise = 0.

4.8 Administration and Other Costs

4.8.1 Overhead

Overhead cost estimates are for the related administration and supervisory activities attributed to development, tree-to-truck, transportation and basic silviculture that occur at the head office, branch office and camp or operation.

Overhead costs include:

- 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).

Cost estimates by forest district are shown in the following table:

Table 4-8 Overhead Cost Estimates

District	\$/m ³	District	\$/m ³
100 Mile House	8.11	Kootenay Lake	11.24
Arrow Boundary (Arrow Boundary)	9.06	Mackenzie	6.25
Cascades (Merritt, Lillooet)	8.33	Nadina (Lakes, Morice)	5.59
Central Cariboo (Horsefly, Williams Lake)	7.75	Okanagan Shushwap (Penticton, Salmon Arm, Vernon)	7.06
Chilcotin	9.12	Peace (Ft. St. John, Dawson Creek)	7.72
Columbia	12.51	Prince George	6.40
Fort Nelson	8.33	Quesnel	7.12
Fort St. James	5.40	Rocky Mountain (Cranbrook, Invermere)	9.77
Headwaters (Clearwater, Robson Valley)	10.36	Skeena Stikine (Bulkley/Cassiar, Kispiox)	6.23
Kalum	10.00	Vanderhoof	6.40
Kamloops	7.10		

4.8.2 Isolated Cutting Authority Areas

1. An isolated cutting authority area is an area where workers working on the cutting authority area travel on each day of work, during timber harvesting operations, from a camp in which the workers are residing that is outside of a support centre listed in Table 4.4.2(6).
2. A camp must:
 - a. be a permanent structure,
 - b. have a cookhouse and a bunkhouse, and
 - c. have been established through the expenditure of capital costs.
3. Where an isolated cutting authority area may be accessed only by rail, the isolated cost estimate for that cutting authority area is \$6.41/m³, otherwise the cost estimate is \$5.11/m³.

4.8.3 Low Volume Cost Estimate

All fully appraised cutting authorities are eligible for a specific low volume cost estimate in addition to all other phase cost estimates.

1. Where the licence to which the cutting authority belongs has an allowable annual cut of Crown timber greater than 0 m³ and less than 3 000 m³:

$$$/m^3 = 8.35$$

2. Where the licence to which cutting authority belongs has an AAC of 3 000 m³ or greater and the net cruise volume for the cutting authority is less than 3 000 m³;

The cost estimate is: (prorated by volume)	Ground Skidding	\$0.64/m ³
	Highlead & Grapple	\$0.88/m ³
	All Other	\$0.00/m ³

6.2 Cutting Authorities With 5 000 m³ or Less Volume

1. This subsection applies to a cutting authority area that has a total coniferous volume of 2 000 m³ or less :

- a. Sawlog Stumpage Rates by Forest Zone and Species

Where the licence to which the cutting authority area belongs has a coniferous allowable annual cut of less than 3 000 m³, or no coniferous allowable cut, the following method may apply:

- i. Except as provided in section 6.4, and in subsections (1)(a)(ii) and (1)(b) of this section, where a cutting authority area has 2 000 m³ or less of coniferous timber, the stumpage rate for each species of timber must be determined using the stumpage rate prescribed in table 6-1 for the forest zone in which the cutting authority area is located.
 - ii. Where the licensee is not required to establish a free growing crop of trees on the cutting authority area, the stumpage rate for a species of timber shall be the sum of the rate prescribed in table 6-1 plus the basic silviculture cost for the species in the forest region or, where the Crown has the responsibility for silviculture, the basic silviculture levy as determined under section 6.7.
 - iii. The stumpage rates calculated under this section are not adjusted quarterly.
 - iv. For extensions of the cutting authority, see section 2.5(3).

- b. Full Appraisal

Alternatively, a stumpage rate may be determined through a full appraisal. The stand data may be site-specific (i.e., timber cruised or scaled) or obtained from one or more comparable cutting authorities (e.g., similar stand and terrain characteristics, etc.). When choosing the comparative cruise data, the district manager may require that procedures in section 2.1.2.2 of the *Cruising Manual* be followed. The total stumpage rate is adjustable for the term of the cutting authority, except as provided in section 6.6, or 2.5(2).

Each full appraisal is made as described in chapters 3, 4 and 5, or chapter 7.

2. Total coniferous volume of greater than 2 000 m³ to 5 000 m³.

The stumpage rate is determined on the basis of full appraisal data. The data may be site-specific or the data may be obtained from comparable cutting authorities, as per section 2.1.2.2 of the *Cruising Manual*.

Each appraisal is made as described in chapters 3, 4 and 5, or chapter 7.

These cutting authorities are cruised if specified by the regional manager in accordance with section 4.2 of this manual.

The total stumpage rate is adjustable for the term of the cutting authority, except as provided in section 6.6.

6.5 Partially Harvested Timber

Where decked timber, or timber which has been felled and bucked, such as on right-of-way, is sold without competition; and where the volume exceeds 300 m³, a full cost estimate appraisal is completed upon an "as is, where is" basis.

Phase costs may be based on borrowed data from a representative cutting permit, adjusted for partial phase.

If the timber volume is being sold competitively, the timber may be priced according to the procedures in section 6.2, or 7.5.1 (4).

6.6 BC Timber Sales (BCTS)

1. For appraisal purposes, the BCTS includes:
 - All timber sale licenses issued under the *Forest Act*, section 20, and
 - all forestry licences to cut issued under the *Forest Act*, section 47.6(3).

Adjustable Stumpage Rates

2. The adjustable stumpage rate option can only be provided to a licensee if the upset rate has been determined by means of a full appraisal and the timber sale licence was advertised before November 1, 2003. For cutting authorities with volumes greater than 5 000 m³, refer to section 4.2.1, **for volumes 5 000 m³ or less refer to section 6.2.**

Non-adjusting Stumpage Rates

3. All timber sale licences awarded under section 20 of the *Forest Act* that were advertised on or after November 1, 2003 and forestry licences to cut awarded under section 47.6 (3) of the *Forest Act* will have **non-adjusting** stumpage rates.

If the zonal average sawlog stumpage rate method is used, the upset and hence the total stumpage rate **does not adjust** for the term of the cutting authority and all extensions. The only exceptions are if a reappraisal is done under section 2.3.2.1(d) due to sudden and severe damage or section 2.3.2.3 because of a minister's direction.

A licensee's election of **non-adjusting** stumpage rates also precludes any correction to the upset stumpage rate determination that would otherwise be warranted because of an error in the appraisal.

Table 6-4 Miscellaneous Stumpage Rates*All Forest Regions*

Species	Product	Reserve Stumpage Rate
Cedar	Shakes	\$6.00/m ³
Cedar	Blanks	\$7.20/m ³
Cedar	Fence Posts	\$3.00/m ³
Cedar	Mining Timbers & Fence Rails	\$3.00/m ³
All Species	Firewood	\$0.50/m ³
All Species	Bolts/Blocks	\$5.30/m ³
Yew	All	\$0.25/m ³
All Species	Grades: 3, 4, 5 and 6	\$0.25/m ³
All Deciduous	All, except grades 3,4,5 and 6 and except where the upset stumpage rate is calculated under Section 7.5.1 (5)	\$0.50/m ³
All Species (except Cedar)	Fence Rails, Mining Timbers, Fence Posts	\$1.20/m ³
All Species	Pickets & Palings, Mine Cribbing, Car Stakes, Round Stakes & Sticks, Rails (Split), Lagging (Split), Orchard Props	\$1.20/m ³
All Species	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 Slocan, Kootenay, Mineral, Babine and Ootsa Lakes	\$0.25/m ³
All Species	Marine Beachcomb	\$0.70/m ³
All Species	Trees classified as "Dead Potential" on Cruise-based cutting authorities	\$0.25/m ³
All Coniferous	For logs harvested from the Alex Fraser (UBC), Aleza Lake (UBC and UNBC) and Fort St. James (UNBC) Research Forests	\$0.25/m ³
All Species	Firmwood Reject	NIL

Forest District Specific

Description	District	Reserve Stumpage Rate
Gross area cleared for mining exploration trails , seismic lines ¹ , gas or oil well sites and right-of-way to well sites. ²	Rocky Mountain Peace Ft. Nelson Mackenzie	\$1,663/ha \$1,731/ha \$1,040/ha \$2,122/ha

1. The gross area cleared as "Low Impact Seismic" or "Minimal Impact" line (refer to Appendix V) is divided by 2 as defined by the Geophysical Final Plan Cover Sheet and the appropriate per ha rate from the table applied to the adjusted area.
2. For pipe line rights-of-way a stumpage rate may be determined by using the above rates for cutting authorities containing less than 2 000 m³, of merchantable volume. For cutting authorities of 2 000 m³ and over see section 6.2.

6.8.2 Miscellaneous Stumpage Rates for Timber Licences

Timber licence cutting authority areas that have not been appraised and have a cutting authority term that began before May 1, 1995, must be appraised effective April 1, 2003.

Market Pricing System

7

The market pricing system (MPS) policy provided in this chapter is to be used only for licences awarded under sections 20, 21 and 47.6 (3) of the *Forest Act*.

Chapters 3, 4, 5 and 6 of this manual are only to be used, for licences awarded under sections 20, 21 and 47.6 (3), where directly referenced in chapter 7.

7.1 MPS Introduction

The market pricing system is the basis for determining sawlog stumpage rates for timber sale licences issued under section 20 and 47.6 (3) of the *Forest Act*, subject to a minimum stumpage rate. Sections 2.1 (3) and (4) of this manual provide the methods that are used for deriving stumpage rates for specific products and extraordinary situations.

MPS is a method of estimating the stumpage value of a stand of timber based on the results of previous similar timber stands that were sold competitively.

MPS can only be used where complete appraisal data as per section 4.2 is available for the cutting authority area. Where data is not available see chapter 6 of this manual.

Except where the upset stumpage rate is determined using section 7.5.1 (5), the MPS upset rate and bonus bid applies to coniferous sawlogs only. The stumpage rates for deciduous species, special forest products and grade 3, 4, 5 or 6 logs are listed under section 6.8.

7.2 MPS Principles and Procedures

7.2.1 MPS Appraisals

The upset stumpage rate will be calculated using the *Interior Appraisal Manual* and monthly parameters (selling prices and consumer price index (CPI)) in effect on the date of calculating (appraisal effective date). This rate plus the bonus bid remains in effect from the date of award of the sale until the sale expires. All MPS stumpage rates on Section 20 timber sale licences advertised on or after November 1, 2003 and Forestry Licences to Cut awarded under section 47.6 (3) of the *Forest Act* are fixed for the term of the timber sale and all extensions.

7.2.2 MPS Stumpage Adjustments

For cutting authorities that were advertised prior to November 1, 2003, that elected to have, or have adjustable stumpage rates, the stumpage rates are adjusted quarterly on January 1, April 1, July 1, and October 1, of each year.

At the time of the quarterly adjustment, the MPS upset rate will be re-calculated based on the equations applicable for the appraisal effective date and the cutting authority data. The monthly parameters effective for the month of the adjustment will be used in the calculation instead of the original values. All other data remain unchanged.

This process is repeated quarterly until the cutting authority is reappraised.

7.2.3 Reappraisals for MPS Appraisals

Revised data and revised monthly parameters will be used with the equations in effect on the reappraisal date. Any reappraisal will follow the policy direction of chapter 2 of this manual. The original bonus bid remains in effect.

7.2.4 Methodology

Calculating the upset stumpage rate for BC Timber Sales, issued under section 20 of the *Forest Act*, will be done using the following methodology:

1. Calculate a selling price (SP) of the products that can be recovered from the stand using sections 7.3.1 and 7.3.2 with the variables as defined.
2. Calculate the market stumpage price using the equation in section 7.4.2, the variables for the stand, and the SP calculated in section 7.3.

3. Calculate the upset stumpage rate by discounting the market stumpage price calculated in section 7.4.2 using the discount factor in section 7.5.

One stumpage rate is determined for all appraised coniferous sawlogs in each cutting authority area **unless the upset stumpage rate has been calculated under section 7.5.1 (5), in which case one stumpage rate is determined for all appraised coniferous and deciduous sawlogs in each cutting authority area.** Other products are priced using miscellaneous stumpage rates as specified under section 6.8.

7.4.2 Market Stumpage Price Equation

Using the variables defined in section 7.4.1, the selling price calculated in section 7.3.2 and the equation below, calculate the market stumpage price (MSP).

$$\begin{aligned} \text{MSP} = & [44.1590 + 0.1895 * \text{SP/CPIF} - 0.9615 * \text{DC/CPIF} + 0.1747 * (\text{VOL}/1000) \\ & - 0.1327 * \text{S\%} + 9.0319 * \ln(\text{VPT}) + 0.009378 * \text{VPH} - 12.7571 * \\ & (\text{BWDN\%}/100) - 7.7502 * (\text{CY\%}/100) - 35.8595 * (\text{HP\%}/100) - 9.7689 * \\ & (\text{HORSE\%}/100) - 21.9802 * (\text{BURN\%}/100) - 2.0871 * \text{CYCLE} - 7.8954 * \\ & \text{HECE} + 29.5252 * (\text{WH\%}/100) - 7.9152 * \text{Z9} - 5.4166 * \text{SAL} - 0.5179 * \\ & (1/\text{VPT})] * \text{CPIF} \end{aligned}$$

For the above equation the following definitions apply:

1. If the percentage of hemlock, balsam and cedar volume in the cutting authority is greater than or equal to 50 percent of the total net cruise coniferous volume, then HECE = 1, otherwise enter 0.
2. If the selling price zone is Fort Nelson Peace (9) then Z9 = 1, otherwise enter 0.
3. If the total net cruise coniferous volume is greater than 50 000, then VOL = 50 000.
4. If horse or helicopter log appraisals, then VPT = 0.5490.
5. Where for salvage (SAL):
 - a. greater than one-third of the net cruise volume for the cutting authority has been physically damaged by ice storm, blowdown, fire, snow press, or
 - b. greater than one-third of the net cruise volume for the cutting authority has been attacked by mountain pine beetle, or other forest pests, that will result in the death of the attacked trees within one year, as determined by the district manager. Salvage (SAL) shall be = 1, or
 - c. except as provided in subsection 5 (a) and (b) SAL shall be = 0.

7.5 MPS Stumpage Rate

7.5.1 MPS Upset Stumpage Rate

1. Subject to subsections (2) (3) (4) (5) and (6) the upset stumpage rate that is determined using the MPS shall be seventy percent of the market stumpage price.
2. Where applications for a timber sale licence with an upset stumpage rate determined under section 7.5.1 (1) have been invited but no applications have been received, the upset stumpage rate shall be equal to the variable cost per cubic metre of preparing the timber for sale when that is requested by the BC Timber Sales manager.
3. Where the director of BC Timber Sales does not anticipate that applications for a timber sale licence with an upset stumpage rate determined under section 7.5.1 (1) will be received because of market conditions, the upset stumpage rate shall be equal to the variable cost per cubic metre of preparing the timber for sale when that is requested by the BC Timber Sales manager.
4. The upset stumpage rate for timber that has been decked for over three years, as determined by the BC Timber Sales manager, shall be equal to the prescribed minimum stumpage rate when that is requested by the BC Timber Sales manager. The deck shall be auctioned by bonus offer.
5. The upset stumpage rate for timber sale licences with a minimum deciduous content of seventy percent of the net cruise volume, will be the greater of:
 - i. The variable cost per cubic metre of preparing the timber for sale, or
 - ii.
$$\$/\text{m}^3 = \frac{0.70 [(NCV \text{ deciduous (m}^3) \times 0.50 (\$/\text{m}^3)) + (NCV \text{ coniferous (m}^3) \times 40.78 (\$/\text{m}^3))]}{TNCV (\text{m}^3)}$$

where: NCV = net cruise volume (cubic metres)

TNCV = Net cruise volume deciduous + net cruise volume
coniferous

The upset stumpage rate and bonus bid will apply to all coniferous and deciduous sawlogs in these timber sale licences.

6. The upset stumpage rate for a cutting authority issued under section 47.6 (3) of the Forest Act shall be the market stumpage price for that cutting authority.

7. The variable cost per cubic metre of preparing the timber for sale shall be calculated by the BC Timber Sales manager.
8. Notwithstanding anything contained in this section the upset stumpage rate must not be lower than the prescribed minimum rate.

7.5.2 Upset Stumpage Rate Calculation

The upset stumpage rate (USR) is calculated by multiplying the Market Stumpage Price (MSP) by the difference between 1 and the discount factor (DF) as follows:

$$\text{USR} = \text{MSP} * (1 - \text{DF})$$

Where:

USR	=	Upset stumpage rate
MSP	=	Market Stumpage Price as defined in Section 7.4.2
DF	=	0.00 if section 7.5.1 (5) or (6) applies, otherwise DF = 0.30

7.5.3 Prescribed Minimum Stumpage Rate

The minimum stumpage rate is prescribed by the minimum stumpage rate regulation (BC Regulation 354/87). The current minimum stumpage rate is \$0.25 per cubic metre.

7.5.4 Total MPS Stumpage Rate

The total stumpage rate is the upset stumpage rate plus any bonus bid.

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Appendix IV 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 permit block boundaries.
- b. Retention areas within the cutting permit blocks.
- c. Delineation of biogeoclimatic zone, subzone and variant areas.
- d. Delineation of areas by harvest method (ground, cable, or helicopter, etc.) and partial cut percent.
- e. Delineation of areas that are the subject of specified operations cost estimates (e.g., skidder swing, root disease control).
- f. The geographic midpoint of each cutblock and common junction of the permit.
- g. Existing roads.
- h. Roads to be built by type (operational, block, winter) including sections to be gravelled and or sections that are “wet” (as defined in this manual).
- i. Location of roads/structures that are the subject of 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 map may include other information considered relevant to the appraisal.

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 2.3.2.1) during the term of the cutting authority must be mapped and promptly submitted to the district.

As part of the initial appraisal data submission the map(s) may be submitted in electronic format. At least two copies shall be submitted to the district in paper form prior to the cutting permit being approved.

Appendix V Seismic Clearance Line Definitions

Regarding the seismic clearing rates in Table 6-4, the following definitions apply:

Minimal Impact Line

For minimal impact lines, very little vegetation is to be cut other than what is required to create a walking trail for foot access. Standing trees are left unharmed while some shrubs may be cut. Hazard trees may be removed for safety reasons.

Low Impact Seismic (LIS)

The objective of low impact seismic is to create a narrow, continuously meandering line. This method reduces the line-of-sight by avoiding large standing trees (meandering avoidance), and leaves the soil and ground cover generally undisturbed. The following criteria apply:

- Average line construction width of 4.0 m (meandering avoidance or less that can be hand or mechanically cut), as determined in the oil and gas commission's Geophysical Final Plan Cover Sheet, and
- Minimizing line-of-sight for wildlife management, to a maximum of 200 m, and
- Avoidance of standing timber up to 7.0 cubic metres per hectare.

Conventional (Straight)

A conventional seismic line is a straight line that is mechanically cut, and ranges in width up to 7.0 m.

For wildlife management purposes, the maximum line of sight must not exceed 400 m in length (or as specified by approval condition). Animal blinds or moose blinds, are typically used on a conventional (straight) cut line to break up the line-of-sight and to allow wildlife refuge from predators. A mechanically cut conventional line provides little protection for forest or wildlife values, so its use in Crown land areas is somewhat restricted.

Only those sections of the geophysical program meeting the minimal or low impact criteria will receive the fifty percent reduction.

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