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July 4, 2024

BY EMAIL

To: Regional Executive Directors

From: Allan Bennett, Director, Timber Pricing Branch

Re: Amendment No. 7 to the *Provincial Logging Residue and Waste Measurement Procedures Manual – Coast Version*

I hereby approve Amendment No. 7 to the *Provincial Logging Residue and Waste Measurement Procedures Manual – Coast Version.*

The manual can be found here:

Provincial Logging Residue and Waste Measurements Procedure Manual - Coast Version - Province of British Columbia (gov.bc.ca)

The purpose of this amendment is to:

- Provide corrections to the procedures for calculating waste penalty rates.
- Update and Improve clarity of various roles, standards, and procedures.

Amendment No. 7 comes into effect July 15, 2024.

Allan W. Bennett, RPF
Director
Timber Pricing Branch

pc: Melissa Sanderson, Assistant Deputy Minister, Timber, Range and Economics Division
Patrick Asante, Manager, Timber Pricing
Randy Husband, Director Pricing, Tenures and Administration
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TIMBER PRICING BRANCH

Provincial Logging Residue and Waste Measurement Procedures Manual – Coast Version

Effective: April 1, 2019

Includes Amendments	Effective Dates
Amendment No. 1	May 1, 2019
Amendment No. 2	December 23, 2019
Amendment No. 3	April 1, 2021
Amendment No. 4	August 1, 2022
Amendment No. 5	November 21, 2022
Amendment No. 6	December 15, 2023
Amendment No. 7	July 15, 2024

BRITISH COLUMBIA

Amendment No. 7 - Provincial Logging Residue and Waste Procedures Manual - Coast Highlights

Section, Table or Appendix Number	Description
1.5.2, 1.5.3, 1.5.4	Roles of the Regional Executive Director, Area Director of Pricing, Tenures, and Administration, and District Manager are updated.
2.4.4	Added requirement that aggregate reporting units cannot contain both immature and mature helicopter logged blocks.
4.2.4	Updated Block Survey Plan requirements.
4.4.4	Added section with diagram to illustrate the right hand rule.
4.5.2	Added clarity to roadside spot accumulation stratification process.
4.5.3	Added clarity to dispersed spot accumulation stratification process.
5.2.4	Added new section to provide a procedure for moving roadside plots.
5.3.4.4	Revised criteria for high stump exemptions.
5.4.1	Updated mapping requirements.
Table 5-2	Added Waste Assessment Area Survey Plan Map and Final Waste Submission Map Requirements
5.7.3	Updated wording of ‘old growth’ to ‘mature’ and ‘second growth’ to ‘immature’.
6.1	Removed requirement to submit plot cards one week after completion of the field survey.
6.3.1, 7.4.1, A3.1, A3.2	Updated procedure to align with Waste System and HBS billing procedures.
6.5.1	Dispute resolution is coordinated with the Area Director of Pricing and Tenures.
6.5.2	This section has been deleted. BCTS dispute resolution uses the same process as all other tenures.
Appendix 1	Added definitions of Mature Cutblock and Immature Cutblock.
A6.1, A6.2, A6.4	Removed references to old growth and second growth.

1.5 Responsibility

The responsibilities are as follows:

1.5.1 Timber Pricing Branch

1.5.1.1 Director, Timber Pricing Branch

The Director, Timber Pricing Branch is responsible for:

1. Approving *Provincial Logging Residue and Waste Measurement Procedures Manual* and amendments.
2. Processing and maintaining waste data.
3. Billing licensees by issuing waste invoices for monetary and cut control charges.

1.5.1.2 Residue and Log Salvage Policy Forester, Timber Pricing Branch

The Residue and Log Salvage Policy Forester is responsible for:

1. Developing and maintaining standards and procedures for determining and reporting waste.
2. Providing training and technical support.
3. Providing policy interpretation to industry and ministry staff.
4. Maintaining software compilation programs and standards.
5. Conducting technical reviews of Forest Regions and Forest Districts for policy and procedure compliance.

1.5.2 Regional Executive Director

The Regional Executive Director is responsible for:

1. Ensuring that district staff adhere to policy, procedures, and interpretations of their respective Area and Timber Pricing Branch.

1.5.3 Area Director of Pricing, Tenures, and Administration

The Area Director of Pricing, Tenures, and Administration is responsible for:

1. Ensuring that district staff adhere to policy and procedures, and where necessary, provide training to district staff.
2. Recommending survey procedure changes where necessary, to the Director, Timber Pricing Branch.

3. Advising industry and forest district staff on matters relating to waste assessments.

4. Processing waste reports and FS 702 for waste monetary billing and cut control where required.

5. Providing Waste System guidance and training to district staff and industry users.

1.5.4 District Manager

The District Manager is responsible for:

1. Conducting check surveys in accordance with manual standards.

2. Implementing and administering the policy and procedures, andrecommending survey procedure changes where necessary to the Area Director of Pricing and Tenures.

3. Approving waste assessment plans and issuing reporting unit numbers.

4. Checking for completeness of licensees' submitted reports.

5. Processing waste reports and FS 702 for waste monetary billing and cut control where required.

1.5.5 Timber Sales Manager

Unless otherwise specified in the agreement, the Timber Sales Manager is responsible for:

1. Ensuring BCTS Licensees submit waste assessments in accordance with licence agreements, Waste Policy and the *Provincial Logging Waste Measurement Procedures Manual*.

2. Where a BCTS licensee does not submit a waste assessment as required under 1.5.4(1) the timber sales manager may carry out the assessment, and in a notice given to the holder, may require the holder to pay the costs incurred by the timber sales manager in carrying out the assessment.

1.5.6 Licensees

Agreement holders are responsible for conducting waste assessments on their scale based cutting authorities in accordance with the *Forest Act*.

The licensees are responsible for:

1. Submitting annual waste assessment plans.

2. Conducting waste assessments in accordance with this manual.

2.4.3 Cutblock Option

1. Where the holder of an agreement uses the cutblock option, each cutblock is a separate reporting unit.

2. Each cutblock must be sampled in accordance with the number of plots required to meet the approved sampling error objective that applies to that cutblock as required in Chapter 4 of this manual.

2.4.4 Aggregate Option

The aggregate option is a method of reporting waste for more than one waste assessment area.

1. Where the holder of an agreement uses the aggregate option, waste assessment areas may be amalgamated to form an Aggregate Reporting Unit. An aggregate reporting unit must be comprised of at least two cutblocks which can be originated from different cutting authorities.

2. Subject to subsection (3) of this section, an aggregate reporting unit may only be comprised of waste assessment areas from within a single Forest District that have been harvested by the holder of an agreement.

3. Each aggregate reporting unit may only consist of:
   a. waste assessment areas that contain mature cutblocks,
   b. waste assessment areas that contain immature cutblocks, or
   c. waste assessment areas that contain mature cutblocks where timber was transported from the waste assessment area by a helicopter.
   d. waste assessment areas that contain immature cutblocks where timber was transported from the waste assessment area by a helicopter.

4. Each waste assessment area within the aggregate reporting unit must be assessed individually using either the number of plots as calculated using the pertinent algorithm in Table 4-1 of this manual or the Historic Waste Information from Appendix 7 of this manual.

5. Aggregate reporting units created for all methods must be sampled in accordance with number of plots required to meet the sampling error objective that applies to that reporting unit as required in Chapter 4 of this manual.

6. Where the holder of an agreement uses the aggregate option and did not meet the sampling error objective when using an aggregate option previously, the holder must use the next higher coefficient of variation required to be used by this manual unless the district manager determines that the use of the lower coefficient of

4.2 Sampling Design

4.2.1 Population

The population is the volume of waste generated during the specified reporting year within the approved waste reporting unit. The size of the population depends on:

a. the option selected for the waste reporting unit,

b. the area logged in that year.

4.2.2 Sub-Populations

The population usually consists of three sub-populations: accumulated, dispersed and standing trees. Each sub-population may be subdivided into one or more strata.

Accumulated waste occurs at landings, along roadsides and at other areas in the reporting unit where logs have been yarded or skidded to and where sample plots may be established. Where sample plots cannot be safely established, or are not appropriate, volumes are either estimated or 100 percent measured (each piece measured individually).

Dispersed waste occurs on the areas from which trees or logs have been removed and where sample plots can safely be established. Dispersed areas are sampled independently of accumulation areas. The area of the rights-of-way leading into the waste assessment area must be included in the net area of waste assessment area unless the waste volume has been included in a previous waste survey or as provided under Section 4.6.2.

Standing trees are trees authorized for harvest under the cutting authority (excepting reserved trees) but at the discretion of the licence holder, are not cut and removed.

Individual standing trees that are found at different locations of the waste assessment area can be measured and scaled individually and be treated as part of the dispersed sub-population. Standing tree patches will be delineated separately from the dispersed to form their own sub-population and the volumes determined with methods outlined under Section 5.3.2.

4.2.3 Stratification

Stratification can increase the precision of sub-population volume estimates and reduce the amount of sampling required to achieve a desired level of precision.

It is therefore useful to stratify the sub-populations, where possible, by harvesting system, different logging contractor, timber type, or relative quantity of waste generated.

4.2.4 Block Survey Plan

A good block survey plan is essential to an efficient waste survey. The block survey plan

allows for development of field quality assurance schedules and to provide a basis for comparison against the final submission.

Block survey plans must contain the items specified in Section 5.4.1.

The Block Survey Plan is not required to be approved by the District Manager prior to a survey. However, it must meet all of the standards for block survey plans in this manual.

A licensee or party responsible for survey must submit a Block Survey Plan to the District Manager one (1) business day prior to the anticipated field work.

Waste assessment areas submitted into the Waste System should reflect the block survey plan. Changes to the block survey plan should be rare and minor in nature and must only be undertaken to reflect the actual harvest and stratum areas. Changes to the block survey plan will be subject to review by the District Manager.

Only one survey plan may be submitted for each waste assessment area. No alterations will be allowed to be made to submitted waste billing volumes, except as required after a Ministry audit.

Accumulations and standing trees not harvested should be clearly indicated on the maps.

4.2.5 Sampling Objective

The sampling objective is to estimate the total volume of waste in each sub-population to a calculated minimum level of precision, or sampling error percent (S.E. %), at the 95 percent confidence level. Generally, calculated sampling errors decrease with increased sub-population size.

The sampling error and number of plots required for each sub-population are determined from plot Table 4-2 in this chapter.

4.4.4 Right Hand Rule

The right-hand rule is an unbiased selection procedure where an action or a direction of travel is chosen by selecting the first option available on the right-hand side or direction.

The right-hand rule is used when determining accumulation (roadside stratum) plot locations for a waste assessment area survey map or when counting spot accumulations in the field.

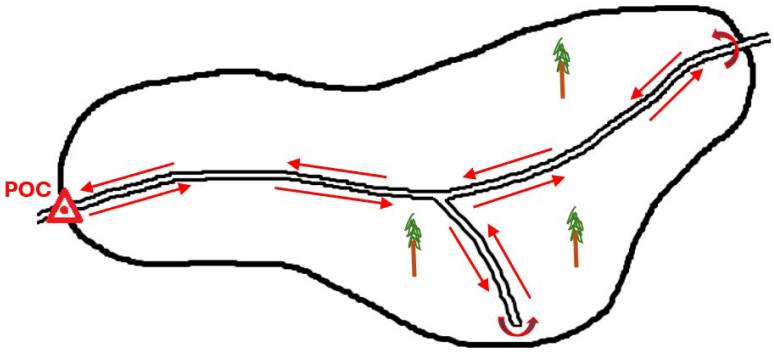

Figure 4-3 Right Hand Rule

4.5 Stratification Procedures for Roadside Accumulations

4.5.1 Roadside Consisting of Strip Accumulations

If the roadside accumulations consist of strips (e.g., windrows), use a rectangular plot which covers the entire width of the strip or a 50 m^2 circular plot system with plot centres located alternatively at 4 m and 11 m from the roadside, for a 15 m wide strip. Strip accumulations are normally treated as one stratum but may need to be stratified according to different levels of waste or harvesting methods.

4.5.2 Roadside Spot Accumulations

Roadside spot accumulations must be identified as a unique accumulation stratum and defined using the following criteria:

1. The piles are located in receiving areas, such as landings, roadsides and dispersed areas where trees have been forwarded and manufactured into logs. Roadside spot accumulations may exist anywhere in the WAA.

2. Waste within the piles is primarily merchantable pieces left over from the manufacturing of logs prior to decking and transport.
3. All roadside piles are counted and assigned a number using the right hand rule.
4. The roadside piles must be stratified and sampled separately from the other strata.
5. The area of the spot accumulations must be removed from the other stratum areas.

Treat all spot accumulations from the same harvesting method in one stratum. The space intervals between spot piles must be treated as a separate roadside stratum.

For roadside piles where plots are established on the side of the pile, the surveyor must alternate locating the plots on the front and back of the piles selected for sampling, if it is safe to work around the back of the pile. If it is not safe to work around the back of the pile, establish the plot on the side of the pile closest to the POC for odd numbered plots and farthest away from the POC for even numbered plots.

> Landing accumulations resulting from highlead, helicopter logging, etc., are always stratified separately from the roadside spot accumulations to form their own stratum.

4.5.3 Dispersed Spot Accumulations

Dispersed spot accumulations are typically made up of breakage, non-merchantable material and minimal amounts of merchantable wood. Dispersed spot accumulations are located within the dispersed stratum.

Spot accumulations found within the dispersed sub-population area, that are not determined to be roadside piles and had not been previously stratified, will be surveyed as part of the dispersed sub-population and all pieces that fall within a dispersed stratum plot will be measured and recorded.

4.5.4 Debuilt Road

If a road has been debuilt, the logs and stumps pulled back from the side-slopes and scattered over the top of the deactivated road, the debuilt road must be treated as a separate accumulation stratum and sampled accordingly. The stratum code for debuilt roads is WB0X.

For example, roadside accumulations are often defined as 10 m wide and along both sides of the roads throughout the entire block.

If a large volume has slid down a steep slope from a roadside accumulation and a dispersed plot lands on the pile, that is where it must stay so long as the outside edge of the dispersed plot does not fall within the predetermined width of the roadside accumulation. Again, unless that pile were previously delineated and removed from the dispersed area, it is part of the dispersed sub-population.

Gravel pits and large swamps should be typed out and plots which fall on these locations must be moved to a spot within a type stratum.

Therefore, typing is *very* important to obtain reliable estimates.

5.2.4 Moving Roadside Plots

Roadside plots that fall outside the stratum that they were intended to sample are to be moved in a consistent and therefore auditable manner. The procedures for moving roadside plots are as follows:

1. Move the plot using the right hand rule half the plot width or radius parallel to the road edge to establish a full 50 m^2 plot.

2. If this fails, move the plot back in the opposite direction, parallel to the road edge, using the same distance and procedure.

3. If the above fails, repeat the same procedure but increase the distance by half the plot width or radius increments. A plot must be established at the first possible location.

Never move a plot that falls completely within the stratum it was intended to sample.

5.2.5 Plot Sizes

Plots in dispersed slash must be circular and may not be smaller than 400 m^2 (11.28 m in radius) unless the block is a Variable Retention (partial logging) waste assessment area under Section

4.7. Plots in accumulations may be rectangular or circular and may be as small as 50 m^2 (3.99 m in radius) or rectangular (i.e., 5 m x 10 m). The formula for calculating the horizontal plot radius is: SQR (plot size in m^2 / PI), where SQR means "the square root of", and PI means 3.1415927.

Different plot sizes may be used for different stratum but once a plot size has been chosen it cannot be changed (i.e., all plots within a stratum must be the same size).

Recommended plot sizes and shapes are as follows:

5.3.4.2.1 Definitions:

A. *Timber merchantability specifications (TMS) stump height* of 30 cm is measured from the ground on the *high side*. This part is not recorded. If the stump is higher, length measurements start from the 30 cm mark.

B. *Allowed stump height* is the height specified in the District Manager's letter for heavy snow packs, or the minimum distance from the ground on the *high side* of a stump up to a point above a physical obstruction which allows for safe falling. B minus A = unavoidable piece.

C. *Total stump height* is the distance from the ground on the *high side* to the top of the felling cut. C minus B = avoidable piece.

5.3.4.3 Recording Stumps in Segments

If there are both avoidable and unavoidable components of waste, the stump is recorded as two pieces each with its own piece number and record appropriate comment code such as MP on FS 161 to indicate multiple pieces.

Record the top portion as avoidable piece. Enter the difference between the total stump height and the allowed stump height in the length field, and the top radius in the top field. Classify this piece as avoidable (A).

Record the lower portion as unavoidable piece. Enter the difference between the allowed stump height and the TMS stump height in the length field, and the top radius of this lower segment in the top field. Classify this piece as unavoidable (U).

5.3.4.4 High Stump Exemptions

The District Manager may approve a higher allowed stump height on all or a portion of a cutblock where:

1. Higher stumps are required for safety reasons, or
2. Higher stumps are required for identified stewardship or environmental reasons (i.e. ecosystem-based management or Forest Stewardship Plan requirements, prescription from a registered professional) or,
3. Snow depth prevents access to the cutting authority TMS stump height or,
4. Higher stumps are required for retaining logs within the cutblock on very steep slopes.

Where an exemption for a portion of a cutblock is submitted the application must include a map and/or written description indicating the requested portions of the cutblock.

1. The exemption must specify a new maximum stump height.
2. Measurement of approved high stumps:
    a. High stumps are always measured and recorded as waste.
    b. The portion of the stump between the TMS stump height and the approved exemption stump

height is considered unavoidable waste and is recorded appropriately.

c. The portion of the stump above the approved exemption stump height is considered avoidable waste and recorded appropriately.

In all cases, trees must be cut as close to the TMS stump height as possible.

The approval for high stumps must be requested and granted prior to the cutting of trees included in the request. Survey crews must confirm if an exemption letter has been issued prior to the survey. In the absence of an exemption prior to harvest, stumps can still be assessed for waste class on an individual basis as per section 5.1.3.

5.3.4.5 Blowdown Stumps

It is very difficult to determine whether a stump on a blowdown area is avoidable or unavoidable after the logging has been completed since there could have been a dangerous obstruction that has since been removed.

> Safety is the primary consideration for the person cutting the log off a tree that has been blown over. Therefore, if there is any question as to whether the stump should be called avoidable then the waste surveyor should give the licensee the benefit of the doubt and call it unavoidable.

Unavoidable waste in blowdown stumps also occurs in the form of long butts. Where this occurs, as illustrated below in Figure 5.5, the long butt is treated as a stump with the length being measured from the side 30 cm adjacent to high ground.

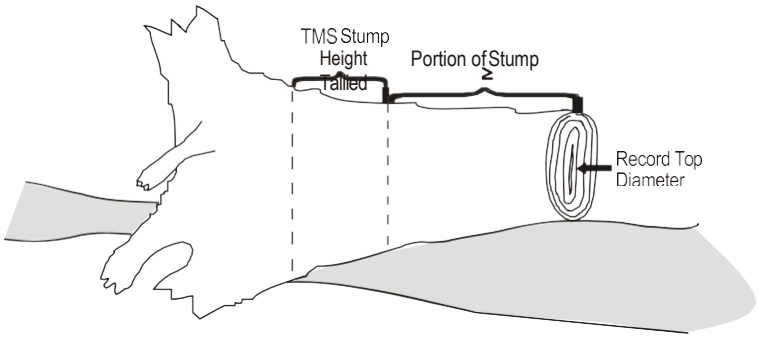

Figure 5-5 Windfall Stump

In some blowdown situations, there may be wind sheared trees resulting in high stumps that could not yield a minimum-length clean log. These stumps are classified as unavoidable, provided that the Forest Service has been advised immediately after the field work for the affected block has been completed. Occasionally, there may be valid safety reasons for leaving a wind sheared high stump that could have yielded a minimum-length log, but normally such high stumps are classified as avoidable.

h. unavoidable bucking waste is recorded.

5.4 Mapping and Field Equipment Standards

Those responsible for waste assessments must ensure that proper field procedures are followed, including the use of industry standard equipment, materials and conventions. Assessments which are not carried out properly will be rejected by the District Manager.

5.4.1 Maps

The maps used in a waste survey must accurately reflect the post-harvest condition of a cutblock including the location and shape of areas of unharvested standing timber, and reserved timber, whether grouped or dispersed.

A waste assessment area survey plan map must show the cutblock boundaries, roads, the point of commencement, point of intersection, strip and plot locations, stratum types and locations, and any other areas that are excluded from waste estimations.

The waste assessment area survey plan map is required as part of a complete waste submission. The cartographic standards used by the Ministry of Forests, Lands and Natural Resource Operations are mandatory.

The waste assessment area survey plan map must:

3. Be legible and of good quality 1:5,000 scale,
4. Provide neat and clean lines, lettering and numbers,
5. Reflect the post-harvest conditions of the cutblock, and
6. Include the items indicated in Table 5-2.

After the field survey is completed, the final waste assessment area survey plan map must be submitted with the waste submission. The final waste survey map must align with the submitted block survey plan.

All stratum types including accumulations, standing trees not harvested, and areas subject to 100% measurement or estimation must be clearly indicated on the final waste assessment area maps. In situations where there are a significant number of piles and they cannot be mapped neatly, individual pile locations do not need to be shown; however, the pile plot locations must be identified on the final map.

Table 5-2 Waste Assessment Area Survey Plan and Final Waste Submission Requirements

Requirements	Waste Assessment Area Survey Plan	Final Waste Submission
Tenure, CP, timber mark areas (ha)	Yes	Yes
Forest Region and District	Yes	Yes
Cutblock identifier	Yes	Yes
Geographical Area	Yes	Yes
Legend including: Map scale, North Arrow, Declination, Map Base, Map symbols	Yes	Yes
Harvest boundary, harvest method areas (ha), and non-harvest areas (ha) (non-productive, etc.)	Yes	Yes
Primary Harvest Complete (PLC) date, Harvest Start date, and Advertised Date for BCTS	Yes	Yes
Survey method (ie. FSI, RSI, Parent, Ocular)	Yes	Yes
Reporting unit options (ie. cutblock, aggregate)	Yes	Yes
Fibre Recovery Zones	Yes	Yes
Cutblock maturity	Yes	Yes
Roads (with stations, widths, and road names) and all other NP areas	Yes	Yes
Areas of reserved timber, unharvested timber, and partial cutting areas.	Yes	Yes
Areas of high stump exemptions	Yes	Yes
Strata type lines and identifier	If known	Yes
Waste assessment area and strata net areas	If known	Yes
POC, point of intersection, local grid, baseline, Starting Point Interval Factor (SPIF), and plot locations	Yes	Yes
Plot locations, CV%, grid spacing distance calculations, and direction of travel for each plot/stratum type	If known	Yes
Contour lines - clearly legible	Yes	Yes
Physiographic features	Only if they affect sampling	Only if they affect sampling
Reporting unit number	If known	Yes
Surveyor name(s) and survey date	If known	Yes
Name of person or company who produced map and date map was produced	Yes	Yes

5.7.3 Timber Merchantability Specifications

Timber merchantability specifications and field characteristics are described in this section.

*SPECIES *R** (2a-bp)	Identifies the species. Where the species is blanked out on the first line, the blank refers to all species).
*MSH cm - MAXIMUM STUMP HEIGHT *R** (2n-rj)	Quantifies, in centimetres, the TMS stump height allowed of 30 cm.
*TOP cm *R** (2n-rj)	Quantifies, in centimetres, the minimum top diameter, inside bark. 15 cm for mature timber and 10 cm for immature.
*MLL m - MINIMUM LOG LENGTH *R** (2.1n-rj)	Quantifies, in metres, the minimum log length that must be recoverable. 3 m.
*AGE *R** (3n-rj)	Identifies the age of any species. Applies to the Interior only, leave blank on the Coast.

6.1 Check Surveys

The District Manager is responsible for conducting check surveys on timber sale licences, forestry licences to cut and permits issued under B.C. Timber Sales, major licences, woodlot licences, community forest agreements, community salvage licences and road permits.

Waste check surveys are activities included in the district's Internal Performance Measure.

Check surveys determine whether:

a. surveys and oculars were properly planned and conducted,

b. waste measurements and classifications were carried out according to the

c. *Provincial Logging Residue and Waste Measurement Procedures Manual*,

d. maximum allowable errors specified under Section 6.3 were not exceeded, and

e. field assessments and reports were completed and submitted on schedule.

6.3 Maximum Allowable Errors

Measurement of a random selection of sample plots within a cut block is used to assess the acceptability of the survey results. The items to be checked and their acceptable limits of errors are specified below.

6.3.1 Net Volume or Value

Exceeding the parameter for either the net volume or net value of waste (avoidable and unavoidable) may be grounds for rejection of the survey.

Net Volume	
(Coast Area)	The net volume of waste for all checked plots must not vary by 10 percent from the net volume of waste determined by the check surveyor.
Net Value	
(Coast Area)	The net value of waste for all checked plots must not vary by 10 percent from the net value of the waste determined by the check surveyor. The net value is derived by multiplying the volume of each species/grade combination by the applicable twelve-months plus one day average stumpage rate of the timbermark pertaining to the species, grade and waste class.

6.5 Non-Compliance with Check Survey Standards

If the licensee's or contractor's survey work is rejected after a check survey, the District Manager may order the licensee or contractor to re-survey the entire waste assessment area or those portions of the original survey that caused the rejection. The re-survey must be completed within 60 days of the District Manager's notification.

The licensee or contractor will be responsible for any costs they incur in the re-survey.

A full or partial re-survey is subject to check surveys carried out at the District Manager's discretion.

6.5.1 Second Check Survey

A licensee or contractor who has been ordered to perform a re-survey may request a second check survey in writing to the District Manager.

The Area Director of Pricing, Tenures, and Administration will coordinate the second check survey. The results of the second check survey are binding and final.

If the second check survey:

a. Finds the original survey in non-compliance with check survey standards,

   i. the licensee or contractor will perform a re-survey to replace the original survey at his expense, and

   ii. the licensee or contractor who requested the second check survey must pay to the government the charges, costs and expenses incurred by the government in respect of the second check survey.

b. Finds the original survey in compliance with check survey standards,

   i. the original survey stands, and

   ii. no charges, costs and expenses are payable to the government.

Processing Waste Volume Estimate (FS 702)

Once checking is completed as per Section 7.3.1, the ministry will obtain and code the applicable waste rates on the FS 702.

7.4.1 Waste Rate

The application of a waste rate is dependent on whether there has been timber harvesting on a cutting authority, and whether there are areas of the cutting authority that reside within a Fibre Recovery Zone. If timber has been harvested on a cutting authority, then a waste rate is determined and applied on a waste assessment area basis.

7.4.1.1 Waste Rate Outside a Fibre Recovery Zone

1. Waste assessment areas with Harvesting

   For waste assessment areas with harvesting, a waste rate is calculated for the waste assessment area using the weighted average stumpage rate (from HBS volume reports) for the applicable timbermark charged for the sawlogs (graded sawlogs* on the Coast) from invoices issued for a period of twelve-months plus one day. The twelve-months plus one day ends on the last day of the month after the month that primary logging was completed for the waste assessment area. This applies to dispersed waste, accumulations and standing timber within the cutblock. Remaining areas of standing timber within the cutblock, that are left unharvested at the expiry, surrender, termination or cancellation of the cutting authority, would be waste billed using the same method, that is, the waste rate is based on the primary logging completion date for the cutblock. Refer to Appendix 3.1 for a description of determining the waste rate for cutblocks with harvesting.

   Note that cutblocks may be split for waste assessment purposes (See section 2.4.2).
   * Exclude all coniferous species Grade X, Hemlock and Balsam, Grade U.

2. Cutblocks with No Harvesting but Harvesting has Occurred on the Cutting Authority

   If there has been no harvesting on the cutblock but there has been harvesting for the cutting authority, then the waste rate for the cutblock is derived using the average of the cutting authority's timber appraisal stumpage rate(s) (plus any bonus and levies where applicable) in effect during the twelve-months preceding the date of cutting authority's expiry, surrender, termination or cancellation, as the case may be. Refer to Appendix 3.2 for a description of determining the waste rate for cutblocks where no harvesting has taken place but there has been harvesting from the cutting authority.

Effective Date	The Appraisal Effective Date of the cutting authority as shown in ECAS. Refer to the Effective Date shown in the Forest Tenure Administration application (FTA) only for cutting authorities that are not listed in ECAS.
Fixed-area Plot Sampling	A sampling method where each plot within a stratum is exactly the same size and shape.
Full Sampling Intensity (FSI)	A full sampling intensity survey on which a sampling error or hectare to plot ratio must be met as specified in Tables 4-2 and 4-3.
Harvest Start Date	The date on which cutting of primary timber on a cutblock has commenced. It does not include cutting of timber for road right of way purposes.
High Side (stumps)	The position where the ground meets the stump on the uphill side, ignoring any root flare, obstacles, vegetation, and loose matter that has accumulated at the base of the tree. Length measurements usually start from 30 cm above this point.
Immature Cutblock	Review the Net Immature % of the Block Summary report from the post-reduction cruise compilation. If the Net Immature volume is greater than 50.0% of the total net cruise volume, the timber is immature.
Interior	This refers to the Southern and the Northern Interior Regions.

Licensee	The holder of the cutting authority.
Log Grade	Those log grades that are defined in the Scaling Regulation.
Mature Cutblock	Review the Net Immature % of the Block Summary report from the post-reduction cruise compilation. If the Net Immature volume is less than or equal to 50.0% of the total net cruise volume, the timber is mature.
Measure Factor	A visual estimate of the percentage of an accumulation that was physically measured and/or estimated. Recorded as the "measure percent."

Appendix 3 Waste Rate Determination

The determination of the waste rate is dependent on whether there has been timber harvesting on a cutblock and whether there are portions of the waste assessment area that are located within a Fibre Recovery Zone

A3.1 Cutblocks with Harvesting

For cutblocks with harvesting, the waste rate for the cutblock is derived from the weighted average stumpage rate charged for the sawlogs (graded sawlogs on the Coast) in invoices issued during the period of 12-months plus one day ending on the last day of the month after the month in which primary logging on the cutblock area was completed. The formula to be used is:

$$WR = TS/TV$$

Where:

WR	=	Waste Rate for the cutting authority.	
TS*	=	Total billed sawlog stumpage (sum of Upset Stumpage*, and Bonus Bid) for the twelve-months plus one day prior to one month after the month primary logging was declared completed on the cutblock.	
		*	Include silviculture and development levies.
TV*	=	Total billed volume (accumulated volume in cubic metres that derived the total billed stumpage for the sawlogs) for the twelve-months plus one day prior to one month after the month primary logging was declared completed on the cutblock.	

*Effective April 12, 2007, TS and TV will exclude, all coniferous species X grade, and Hemlock and Balsam, U grade.

A3.2 Cutblocks with No Harvesting

If there has been no harvesting on the cutblock, but there has been harvesting from the cutting authority, then the waste rate for the cutblock is derived using the average of the cutting authority's four quarterly timber appraisal stumpage rates (plus any bonus and levies where applicable) in effect during the twelve-months plus one day preceding the date of the cutting authority's expiry, surrender, termination or cancellation, as the case

Appendix 6 Coast Grading

Due to the timber pricing changes made to Hembal U grade and all coniferous X grade, the followings grade rules apply to blocks surveyed after May 1, 2006.

A6.1 Bucking Waste and Long Butts

a. Bucking Waste with less than an 8 rad top default to U grade,

b. Bucking Waste with an 8 rad or larger top default to J grade.

c. A piece of bucking waste that is less than 50% of its original log diameter (at the butt) with a broken end and gross length of less than 0.4 metres is not required to be measured. All three criteria must be met or the piece must be recorded. The piece cannot be folded (accounting for volume) to become less than 0.4 metres.

All Bucking Waste that is 50% or more of the original log diameter and meets the TMS must be measured and recorded.

A6.2 Stumps

a. < or = to 12R default to U grade,

b. > or = to 13R default to J grade.

c. Unavoidable grades are the same as avoidable grades.

d. Severe Ring shake = X grade. (Severe ring shake is defined as covering at least 50% of the volume of the stump).

e. Stumps cannot be graded as U, X or Y grade due to rot or missing wood.

A6.3 Logs

Use the following rules:

a. Logs less than 5 meters in length and bucked on the butt end will be graded as if they were 5 metres long.

   Logs (except spruce and cypress) with an undercut butt and less than 5.0 metres to the point where 8 rads disappears cannot be better than U grade. Spruce and Cypress logs with an undercut butt and less than 4.0 metres to the point where 8 rads disappears cannot be better than U grade.

b. Logs broken at both ends or broken at the butt end will be graded according to the scaling grade rules.

c. Logs greater than 12.8 metres in length, the diameter used for determining the grade of the entire log is the diameter (inside bark) measured at the point 12.8 meters from the large end. Do not pencil buck, scale and grade as one piece.

A6.4 Standing Trees

Trees that are greater than 12.8 metres to the timber merchantability specifications top diameter will be pencil bucked in 12.8 metre segments with each segment classified and graded accordingly.

For example, a 15.0 metre tree would be entered as a 12.8 metre log and a 2.2 metre piece of bucking waste with each piece graded according to its dimensions. However, if the grade of all pieces in the pencil bucked tree is the same, then record the tree as one piece.

A6.5 Breakage

Where there is evidence of intentional or excessive breakage, classify as avoidable, and grade the piece as if it were a 5 m long log.