

TYPE A WSA – VARIATION AGREEMENT

THIS AGREEMENT is made the 11th day of October 2022

1. PARTIES

- 1.1 **THE FORESTRY CORPORATION OF NEW SOUTH WALES** a statutory State owned corporation constituted by the Forestry Act 2012 (NSW) ('**State Forests**')
- 1.2 **THORA SAWMILLING PTY LIMITED (ABN 30000409290)** ('**Company**')
- 1.3 **THE STATE OF NEW SOUTH WALES** ('**State of NSW**')

2 RECITALS

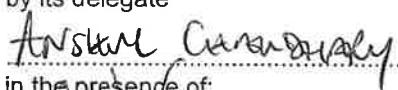

- 2.1 The parties are parties to a Type A Wood Supply Agreement requiring State Forests to supply annual Allocations of High Quality Large and High Quality Small sawlogs to the Company for a term expiring on 31 December 2023 ("the WSA").
- 2.2 The parties have reached agreement on an extension to the term of the WSA and other amendments to its conditions.
- 2.3 This Agreement sets out the agreed amendments to the WSA.
- 2.4 Unless a contrary intention appears in this agreement:
 - 2.4.1 "**Agreement**" means this agreement;
 - 2.4.2 headings are for convenience only and do not affect the interpretation of the Agreement;
 - 2.4.3 words importing the singular include the plural and vice versa;
 - 2.4.4 words importing a gender include any gender;
 - 2.4.5 a reference to any thing includes a part of that thing;
 - 2.4.6 a reference to a clause, party, annexure, exhibit or schedule is a reference to a clause of and a party, annexure, exhibit and schedule to this Agreement;
 - 2.4.7 a reference to a document includes all amendments or supplements or replacements or notations of that document;
 - 2.4.8 a reference to a party to a document includes that party's successors and permitted assigns;
 - 2.4.9 no rule of construction applies to the disadvantage of a party because that party was responsible for the preparation of this Agreement or any part of it;
 - 2.4.10 a reference to dollars or \$ is a reference to the lawful currency of the Commonwealth of Australia.


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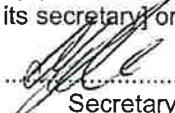
3. AMENDMENTS

- 3.1 On and from the date of this Agreement the WSA is amended in accordance with Schedule 1.

EXECUTED AS A DEED:

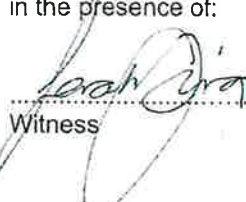
EXECUTED for and on behalf of
THE FORESTRY CORPORATION
OF NEW SOUTH WALES
by its delegate

in the presence of:

Witness


Delegate

EXECUTED by THORA
SAWMILLING PTY LIMITED
by [two directors] or [a director and
its secretary] or [its sole director]

Secretary/Director


Director

SIGNED SEALED AND
DELIVERED by THE HONOURABLE
Dugald Saunders Minister for
Agriculture, Minister for Western
New South Wales in and for the State
of New South Wales for and on
behalf of the Crown but not so as to
incur any personal liability.

in the presence of:

Witness


Minister

SB 

SCHEDULE 1

Amendments to the WSA

1. In clause 2.1 at the end of the definition of Force Majeure insert the following:
"and includes any circumstance where Contract Harvesting ceases to be RFA forestry operations within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999*"
2. In clause 4.1 delete "2023" and insert instead "2028"
3. After clause 18.5 insert a new clause 18.5A as follows:
18.5A A Delivery Charge agreed or determined under clause 18.4 shall be reviewed and varied during the relevant DC Year at the end of each Quarter in accordance with Schedule 10. Clause 18.5 shall not apply to a review under Schedule 10, and the Delivery Charge at the commencement of each DC Year and for the first Quarter of the DC Year shall be as agreed or determined under clause 18.4 without reference to Schedule 10. A reference to a Quarter in this clause 18.5A and Schedule 10 is a reference to the 3 month period commencing on 1 July, 1 October, 1 January, and 1 April each Year.
4. In clause 18.7 delete "and 2019" and insert instead ", 2019 and 2024";
5. After clause 18.7 insert a new clause 18.7A as follows:
18.7A At the same time as the parties conduct a review under clause 18.7 in 2024 the parties must review in good faith the provisions of Schedule 10 to reach agreement if possible regarding amendments to Schedule 10 that may be necessary in order that it more appropriately calculate relative changes to the cost to State Forests of carrying out Contract Harvesting during each DC Year.
6. After Schedule 9 insert a Schedule 10 as follows:

SCHEDULE 10

Quarterly Rate Review

Part 1

- (a) The Delivery Charge for each Quarter of a DC Year except the first Quarter of that DC Year shall be the Delivery Charge for the previous Quarter varied by the percentage determined by State Forests by applying the review mechanism set out as Part 2 to this Schedule 10.
- (b) State Forests must within thirty days of the end of each Quarter except the first Quarter of the DC Year, provide to the Company details of the calculations of the Delivery Charge to apply for the new Quarter.
- (c) If an Indicator referred to in Part 2 is rebased, its calculation varied, ceases to be available, or is superseded by a superior Indicator, State Forests may replace or vary that Indicator with, or to, one which in State Forests opinion is an equivalent and suitable alternative.

Part 2

Item 1 Definitions

In this Schedule 10 unless the context indicates to the contrary:



SCHEDULE 1

"Base Indicator Rate" for a review means the Indicator Rate which was the Current Indicator Rate for the previous review, except that in the first review, and in the first review following the commencement of each DC Year, it means:

- (a) in the case of Cost Item CPI:- the figures last published by the Australian Bureau of Statistics (ABS) prior to the commencement of the Reviewed Quarter;
- (b) in the case of Cost Item Fuel:- the Net Fuel Price for the Quarter immediately before the Reviewed Quarter;

"Cost Item" means an item set out in column 1 of Part 3;

"Current Indicator Rate" for a review means:

- (a) In the case of Cost Item CPI:- the figures as last published by the ABS prior to the end of the Reviewed Quarter.
- (b) In the case of Cost Item Fuel:- the Net Fuel Price for the Reviewed Quarter;

"First Quarter" means the period commencing 1 October 2022 and ending 31 December 2022.

"Indicator" means an Indicator of a Cost Item more particularly being any Indicator set out in column 2 of Part 3;

"Indicator Rate" means the value or status of an Indicator at a point in time;

"Indicator Weighting" means the weighting given to an Indicator for the purpose of calculating the weighted movement across all Indicators during a review more particularly being, for the first review under this Schedule, the weighting set out in column 8 of Part 3 as varied from review to review in accordance with this Schedule 10;

"Net Fuel Price" for a Quarter means the item identified as the Net Fuel Price in Part 3 of this Schedule 10 more particularly being an amount calculated for that Quarter as demonstrated by columns 2 and 3 of that Part;

"Reviewed Quarter" means the Quarter that ended immediately before the conduct of a review under this Schedule 10.

Current Indicator Rates Definitions

Item	Indicator	Source
CPI	CPI	ABS Consumer Price Index Cat No 6401 Tables 1 and 2 (Series ID A2325846C; Index numbers" All Groups CPI: Australia) As last published by the Australian Bureau of Statistics (ABS) at www.abs.gov.au
Fuel	Terminal Gate Price	Daily average Terminal Gate Price, in dollars per litre (Including GST) of Diesel in Sydney As last published by the Australian Institute of Petroleum (AIP) at www.aip.com.au
	GST	GST as specified by the Australian Tax Office
	On Road Fuel Tax Credit	Fuel Tax Credit Rates applicable to liquid fuels for heavy vehicles travelling on public roads As published at https://www.ato.gov.au/Business/Fuel-schemes/Fuel-tax-credits---business/Rates---business/
	Off Road Fuel Tax Credit	Fuel Tax Credit Rates applicable to liquid fuels for heavy machinery working off public roads. As published at https://www.ato.gov.au/Business/Fuel-schemes/Fuel-tax-credits---business/Rates---business/

SCHEDULE 1

Item 2 : Methodology

The following describes the method of varying the Delivery Charge:

1. Ascertain the level of each Indicator in column 1 of Part 3, expressed in dollars and cents, percentage or as an index (as the case may be) current at the time of the review (the Current Indicator Rate).
2. Ascertain the movement in each Indicator during the relevant review period by establishing percentage increase (or decrease) in the Indicator Rate (by dividing the Current Indicator Rate (see clause 1) by the Base Indicator Rate and applying any weighting specified in column 6 to that percentage change.
3. Calculate the weighted movement across all Indicators by applying the methodology below:
 - (a) multiply the movement in each Indicator (see clause 2) by the Indicator Weighting
 - (b) the sum of the products of each calculation referred to in clause 3(a) is the weighted movement across all Indicators.
4. The weighted movement across all Indicators calculated in accordance with clause 3 is the variation in the Delivery Charge over the Reviewed Quarter.
5. The new Delivery Charge to apply in the Quarter following the Reviewed Quarter is calculated by applying the weighted movement across all Indicators (from clause 4 above) to the current Delivery Charge.
6. For the purposes of the next Delivery Charge review ascertain new column 8 Part 3 Indicator Weightings for each Indicator by multiplying the then current column 8 Indicator Weighting for each Indicator by the movement in the relevant Indicator (see clause 2 above) over the Reviewed Quarter and then dividing the result by the weighted movement across all Indicators (see clause 3 above). This will produce a new table of Indicator Weightings for the next review which sums to 100 percent.

Part 3

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Item	Indicator	Example Base Indicator Rate	Example Current Indicator Rate	Movement	Example Indicator Weighting	Example Weighted Movement	Indicator Weighting for the first review
Item 1: CPI	CPI - All Groups 8 Capital Cities	114.4	118.8	3.80%	81%	3.08%%
Item 2: Fuel	Daily weighted average Terminal Gate Price (TGP) of Diesel in Sydney (AIP)	\$1.2490	\$1.1174				
	Less GST	\$0.1135	\$0.1016				
	Less 66% of the On Road Fuel Tax Credit Rate	\$0.1069	\$0.1100				
	Less 34% of the Off Road Fuel Tax Credit Rate	\$0.1428	\$0.1444				
	Net Fuel Price	\$0.8859	\$0.7615				
					100.0%	0.41%	100.0%

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**WOOD SUPPLY
AGREEMENT
(Type A)**

**THORA SAWMILLING
PTY LTD**

April 2004

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Refer MCC

TYPE A WOOD SUPPLY AGREEMENT

THIS AGREEMENT is made the day of 2004

1. PARTIES

- 1.1 **THE FORESTRY COMMISSION OF NEW SOUTH WALES** a corporation constituted under the Forestry Act 1916 (NSW) trading as **STATE FORESTS** ('State Forests')
- 1.2 **THORA SAWMILLING PTY LTD** (ABN 30 000 409 290) ('Company')
- 1.3 **THE STATE OF NEW SOUTH WALES** ('State of NSW')

2. DEFINITIONS AND INTERPRETATION

- 2.1 In this Agreement unless a contrary intention appears:

'Act' means the Forestry Act 1916 (NSW) and all regulations made under that Act;

'Allocation 1' for a Year means the volume of HQL sawlogs set out in Part 1 of **Schedule 2** for that Year;

'Allocation 2' for a Year means the volume of HQS sawlogs set out in Part 1 of **Schedule 2** for that Year;

'Allocations' means Allocation 1 and Allocation 2;

'Allocation' means Allocation 1 or Allocation 2 as the case may be;

'Annual Delivery Plan' means a schedule prepared by State Forests for the Year to which it applies which must provide for the supply of the Allocations (or such greater or lesser volume as the Company requires and is entitled to require State Forests to make available) and which sets out relevant information regarding:

- (i) the various Compartments from which that supply is intended;
- (ii) the forest types of the various Compartments and the expected yields of Timber; and
- (iii) the monthly volumes of Timber proposed to be delivered to the Delivery Site.

'Area of Supply' means the Crown-timber lands within State Forests North East, Mid North Coast and Hunter Regions more particularly being described on the plan attached as **Schedule 3**;

'Code of Procedure' means the Code of Procedure attached as **Schedule 4** as may be amended from time to time in accordance with this Agreement;

'Commencement Date' means 1 July 2004;

'Company' means the Company and includes all employees, servants and agents of the Company;

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'Compartment' means an identified geographic administrative area from which State Forests may supply Timber to the Company;

'Contract Harvesting' includes the felling, extraction, sorting, processing, grading, loading, hauling, delivery and distribution of Timber and ancillary works including roading, tracking, log dump construction and site rehabilitation by a Contractor engaged by State Forests necessary to deliver the Allocations to the Company;

'Contractor' means a person under contract with State Forests to conduct forestry operations and includes principals, employees and agents of the Contractor;

'Cumulative Net Overcut' at the end of a Year in relation to an Allocation means, where the total of the Overcuts of the Allocation exceeds the total of the Undercuts of the Allocation at the end of the Year, the total of Overcuts of the Allocation less the total of the Undercuts of the Allocation which occurred under this Agreement to the end of that Year;

'Cumulative Net Undercut' at the end of a Year in relation to an Allocation means, where the total of the Undercuts of the Allocation exceeds the total of the Overcuts of the Allocation at the end of the Year, the total of Undercuts of the Allocation less the total of the Overcuts of the Allocation which occurred under this Agreement to the end of that Year;

'Cumulative Substitute Supply' at a point in time means, after taking into account the effect of **clause 6.2.7**:

- (i) the total volume of HQL sawlogs State Forests has supplied the Company in substitution for HQS sawlogs in accordance with **clause 6** to that point in time; less
 - (ii) the total volume of HQS sawlogs State Forests has supplied the Company in substitution for HQL sawlogs in accordance with **clause 6** to that point in time;
- where the volume described in (i) exceeds the volume described in (ii);

'DC Year' means the 12 month period commencing 1 October in any year;

'Delivery Charge' means has the meaning set out in **clause 18.2** and as calculated in accordance with **clause 18**;

'Delivered Prices' means the prices payable for Timber delivered to the Company under this Agreement;

'Delivery Charge Schedule' means the schedule attached as **Schedule 6** for calculating the Delivery Charges as prepared and amended from time to time in accordance with **clause 18**;

'Delivery Hours' means the hours specified in **Schedule 7**;

'Delivery Site' means the location identified in **Schedule 7** as the Delivery Site;

'Force Majeure' means an event (other than the payment of money) arising from an act of God, industrial dispute, act or omission of government or government department or instrumentality (other than State Forests), war, sabotage, riot, civil disobedience, epidemic, disease, fire, explosion, failure of power supply, accident, natural disaster, calamity or unlawful act by other

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person, or any similar cause which prevents a party from performing its obligations (in whole or in part) under this Agreement;

‘High Quality Large sawlogs’ or ‘HQL sawlogs’ means timber conforming to the Specifications for High Quality Large sawlogs;

‘High Quality Small sawlogs’ or ‘HQS sawlogs’ means timber conforming to the Specifications for High Quality Small sawlogs;

‘Management Area’ means an area of land designated as a ‘Management Area’ on the plan prepared by State Forests and attached as **Schedule 3**;

‘Minister’ means the Minister administering the Act;

‘Monthly Delivery Schedule’ means a schedule stating the volume of Timber to be delivered to the Delivery Site and the Compartments from which the Timber is to be harvested during the month to which it applies, together with any special delivery requirements for that month. The volume and area will be based on, but not bound to, the indicative information in the Annual Delivery Plan for that month, and must:

- (i) provide for the need for the Company to stockpile Timber in some months to compensate for events preventing Contract Harvesting;
- (ii) provide for the need for the Company to otherwise manage its mill site stockpiles to control inventory costs and minimise deterioration in the quality of stockpiled Timber; and
- (iii) take into account the cumulative performance of monthly deliveries against the Annual Delivery Plan;

‘Northern Region’ means all the land within the area identified as the Northern Region on the plan attached as **Schedule 3**

‘Overcut’ of an Allocation means the amount by which the actual quantity of Timber comprising the Allocation the Company elects to receive and receives in any Year is greater than the Allocation;

‘Price Schedule’ means a schedule for calculating the Stumpage Price of Timber prepared by State Forests in accordance with the principles of The Price System and annexed as **Schedule 5**;

‘Price Zone’ means an area nominated by State Forests from time to time as a Price Zone for the purposes of setting Delivery Charges and being a generally contiguous geographical area of forest which in the opinion of State Forests is suitable for uniformity in pricing of Timber. The Price Zones applicable at the commencement of the Agreement are as set out in **Schedule 3**;

‘Required Licences’ means licences which are required under the Act to permit the processing of Timber by the Company in the exercise of its rights under this Agreement and any other licences required under the Act from time to time by the Company to enable it to exercise its rights under this Agreement;

‘Salvage operations’ means the harvesting of windthrown timber or damaged timber;

‘Specifications’ means the specifications for the hardwood timber set out in **Schedule 1**;

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'Stumpage Price' means the amount per cubic metre of Timber (without taking into account the Delivery Charges in relation to the Timber) charged by State Forests for the Timber as determined in accordance with **clause 17**;

'The Price System' means a state wide system for determining the Stumpage Price of timber in accordance with particular methodologies and principles adopted by State Forests and as may be varied from time to time;

'Timber' means the timber detailed in the Specifications;

'Total Allocation' of an Allocation means the total volume of the Timber comprising the Allocation for each Year of this Agreement as set out in Part I of **Schedule 2** to be supplied during the term of this Agreement;

'Undercut' of an Allocation means the amount by which the actual quantity of Timber comprising the Allocation the Company elects to receive and receives in any Year is less than the Allocation;

'Value Added Criteria' means criteria either regarding the sawing, drying, dressing or other processing of Timber, or regarding the marketing of Timber, which adds value to the Timber;

'Year' means a period of twelve months commencing on 1 July in any year.

2.2 In this Agreement, unless the context requires otherwise:

- 2.2.1 a reference to the Act includes all amendments, regulations, rules, by-laws and proclamations under the Act;
- 2.2.2 words and phrases defined in the Act will have the same meanings attributed to those words and phrases in the Act unless the word or phrase is defined in this Agreement in which case the word or phrase will have the meaning attributed to it in this Agreement;
- 2.2.3 headings are for convenience only and do not affect the interpretation of this Agreement;
- 2.2.4 words importing the singular include the plural and vice versa;
- 2.2.5 words importing a gender include any gender;
- 2.2.6 a reference to a person includes a company, partnership, joint venture, association, corporation or other body corporate and any governmental agency;
- 2.2.7 a reference to any thing includes a part of that thing;
- 2.2.8 a reference to a clause, party, annexure, exhibit or schedule is a reference to a clause of and a party, annexure, exhibit and schedule to this Agreement;
- 2.2.9 a reference to a document includes all amendments or supplements or replacements or novations of that document;

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- 2.2.10 a reference to a party to a document includes that party's successors and permitted assigns;
- 2.2.11 no rule of construction applies to the disadvantage of a party because that party was responsible for the preparation of this agreement or any part of it;
- 2.2.12 a reference to dollars or \$ is a reference to the lawful currency of the Commonwealth of Australia.
- 2.2.13 a reference to the Minister is a reference to the Minister acting in his capacity as representative of the Crown in the right of the State of New South Wales but not as a statutory officer under the Act.
- 2.2.14 a reference to State Forests making Timber available is a reference to making Timber available by the method described in **clause 8.1**;
- 2.2.15 a reference to taking Timber is a reference to accepting delivery of Timber delivered by State Forest in the course of State Forests conducting Contract Harvesting.

3. SCOPE OF AGREEMENT

- 3.1 The Company carries on the business of sawmilling and the processing of hardwood timber and requires supplies of Timber to conduct its business.
- 3.2 From the Commencement Date State Forests will make available supplies of Timber to the Company and the Company must accept and pay for the supplies of Timber delivered by State Forests upon the terms and conditions set out in this Agreement.
- 3.3 The Company must pay State Forests the prices calculated in accordance with **clause 16**.
- 3.4 The State of NSW undertakes to ensure that State Forests has sufficient resources and the necessary capacity to make the Timber to be supplied under this Agreement available to the Company and will cause State Forests to perform its obligations as required by the provisions of this Agreement. The State of NSW will only be excused for any failure to perform its undertakings set out in this clause if prevented from doing so by Force Majeure. For the purposes of this clause the words 'act or omission of government or government department or instrumentality' in the definition of Force Majeure will be deemed to mean 'act or omission of a government or government department or instrumentality other than the government or a department or instrumentality of the State of NSW'.

4. DURATION OF AGREEMENT

- 4.1 This Agreement will take effect from the date of this Agreement and will operate until 31 December 2023 unless determined at an earlier date under a provision of this Agreement.
- 4.2 If the Company makes written application to State Forests and the Minister to renew this Agreement provided it is not in material breach of this Agreement at the time it makes the application, the Minister and State Forests must consult with the Company, and negotiate with the Company in good faith for the purpose of seeking to reach agreement in respect of the grant

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of a renewed Agreement and the terms and conditions of such a renewal. Nothing in this clause obliges State Forests or the State of NSW to grant a renewal of this Agreement.

- 4.3 The parties agree that in the event of an assignment of this Agreement as envisaged by **clauses 29 and 30**, the parties will execute a further agreement upon the same terms as this Agreement but including provisions incorporating an obligation in **clause 21** upon the Company or any assignee to comply with any conditions imposed under **clause 30** as obligations under the agreement (and it is agreed that non-compliance with such conditions will be a material breach for the purposes of **clause 27.2**).

5. ALLOCATIONS

- 5.1 From the Commencement Date State Forests must make available to the Company each of the Allocations (adjusted in accordance with **clauses 5.4 and 6**) in each Year. In no case will State Forests be required to make available more Timber of the type comprising an Allocation to the Company during the term of this Agreement than the Total Allocation for the Allocation (less any deductions under **clause 7.1**).
- 5.2 Despite any provision of this Agreement State Forests is not obliged to supply the Timber from outside the Area of Supply.
- 5.3 State Forests may supply the Timber from outside the Area of Supply provided:
- 5.3.1 State Forests must use its reasonable endeavours to supply the Timber it is required to supply under this Agreement from the Area of Supply;
 - 5.3.2 State Forests may supply the Timber from the Northern Region and elsewhere provided that State Forests may not supply the Timber from outside the Northern Region unless it has used its reasonable endeavours to supply it from within the Northern Region;
 - 5.3.3 the Delivered Price payable for the Timber from outside the Area of Supply must be calculated on the assumption that the Delivery Charge is the Delivery Charge which would have been payable for that Timber if it had been harvested and delivered from the Price Zone within the Area of Supply nearest to the actual point of harvest;
 - 5.3.4 the Stumpage Price for Timber supplied from outside the Area of Supply shall be determined in accordance with The Price System applied to the source of the Timber and shall be adjusted for local conditions and the characteristics of the Timber; and
 - 5.3.5 State Forests must act reasonably to ensure that the Timber supplied from outside the Area of Supply is suitable for the Company's business.
- 5.4 Part II of **Schedule 2** sets out indicative quantities of Timber which are to be made available from particular Management Areas for the term of this Agreement. The parties acknowledge the purpose of Part II is to provide information relating to likely sources of Timber but State Forests is not able to make any firm commitment that Timber will be available in the quantities or from the Management Areas indicated. The inclusion of this acknowledgment does not relieve State Forests of its obligations to make the Allocations available under, and in accordance with, this Agreement. State Forests will update this information from time to time if the indicative information provided ceases to be relevant for a period greater than 2 Years.
- 5.5 Subject to **clause 5.6** in any Year the Company may take more or less than an Allocation in accordance with the following conditions:
- 5.5.1 in any Year commencing on or after 1 July 2004 the quantity of Timber taken by the Company during that Year must not exceed 110 percent of the Allocation for that Year;

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- 5.5.2 in any Year commencing on or after 1 July 2004 the minimum quantity of Timber taken by the Company during that Year must not be less than 90 percent of the Allocation for that Year;
- 5.5.3 the Cumulative Net Undercut or the Cumulative Net Overcut at the end of any Year must not be greater than 10 percent of the Allocation (a worked example of the operation of this provision is attached as **Schedule 9**); and
- 5.5.4 the Company gives:
- (a) not less than 6 months advance notice in writing to State Forests of an intended Overcut; and
 - (b) not less than 3 months advance notice in writing to State Forests of an intended Undercut.
- 5.6 The Company is not entitled to an Undercut or Overcut except in accordance with the conditions set out in **clause 5.5**. Despite any Undercut or Overcut the Company must not during the term of this Agreement take a quantity of Timber in excess of the Total Allocation less any deduction made under **clause 7.1**.
- 5.7 Despite **clause 5.6** and **clause 5.5.4** if the Company gives at least 3 months advanced notice in writing to State Forests of an intended Overcut and the intended Overcut is otherwise in accordance with **clause 5.4** State Forests must use reasonable endeavours to supply the intended Overcut.
- 6. SUBSTITUTION**
- 6.1 In any Year State Forests may substitute and supply part or all of the volume of HQS sawlogs the Company is entitled to receive in that Year with an equivalent volume of HQL sawlogs provided:
- 6.1.1 State Forests must give the Company notice in writing of the intention to substitute and the volume to be substituted;
 - 6.1.2 Such notice must be given in sufficient time for the intention to substitute to be taken into account in the Annual Delivery Plan for the relevant Year; and
 - 6.1.3 State Forests must consult with the Company before electing to issue such notice; and
 - 6.1.4 no volume of HQL sawlogs may be treated as being supplied in substitution for HQS sawlogs in a Year until State Forests has met its obligation to supply the volume of HQL sawlogs the Company was entitled to receive and sought to receive in that Year.
- 6.2 If in any Year State Forests cannot despite using its best endeavours, supply the whole of the volume of HQL sawlogs the Company was entitled to receive and sought to receive in that Year, State Forests may substitute part or all of the volume of HQL sawlogs the Company is entitled to receive in that Year with an equivalent volume of HQS sawlogs provided:
- 6.2.1 there is a Cumulative Substitute Supply at the commencement of that Year;
 - 6.2.2 the volume substituted may not exceed the lesser of:
 - (a) a volume equivalent to 6% of Allocation 1; and
 - (b) the Cumulative Substitute Supply at the commencement of that Year;
 - 6.2.3 State Forests gives not less than 3 months notice in writing to the Company prior to the end of the Year of its intention to substitute and the likely extent of the substitution;
 - 6.2.4 State Forests must consult with the Company before electing to issue such notice;
 - 6.2.5 no volume of HQS sawlogs may be treated as being supplied in substitution for HQL sawlogs in a Year until State Forests has met its obligation to supply the volume of HQS sawlogs the Company was entitled to receive and sought to receive in that Year;

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- 6.2.6 on each occasion there is a Cumulative Substitute Supply State Forests may only exercise its rights under this **clause 6.2** in any two consecutive Years; and
- 6.2.7 if State Forests exercises its rights, the Cumulative Substituted Supply at the conclusion of the two consecutive years shall be deemed to be nil until it is re-established in accordance with **clause 6.1**.
- 6.3 For the purposes of **clauses 5 and 7**, in determining whether the Company has taken more or less than an Allocation during a Year:
 - 6.3.1 any volume of HQL sawlogs supplied or intended to be supplied in substitution for HQS sawlogs under **clause 6.1** shall be deemed to have been supplied or intended to be supplied (as the case may be) as HQS sawlogs;
 - 6.3.2 any volume of HQS sawlogs supplied or intended to be supplied in substitution for HQL sawlogs under **clause 6.2** shall be deemed to have been supplied or intended to be supplied (as the case may be) as HQL sawlogs;
- 6.4 If:
 - 6.4.1 the Company is liable to pay State Forests money under **clause 7.3** in relation to failing to take Allocation 2 during a Year; and
 - 6.4.2 the Timber that the Company failed to take included a proportion of HQL sawlogs that State Forests had, in accordance with **clause 6.1** included in the Annual Delivery Plan for that Year; then

the price payable for that proportion shall be the weighted average price paid by the Company for HQL sawlogs during that Year.
- 6.5 If:
 - 6.5.1 the Company is liable to pay State Forests money under **clause 7.3** in relation to failing to take Allocation 1 during a Year; and
 - 6.5.2 the Timber that the Company failed to take included a proportion of HQS sawlogs that State Forests had, in accordance with **clause 6.2** given notice of an intention to supply during that Year; then

the price payable for that proportion shall be the weighted average price paid by the Company for HQS sawlogs during that Year.
- 6.6 State Forests is not entitled to substitute HQL sawlogs for HQS sawlogs or vice versa except as provided in this **clause 6**.
- 6.7 This **clause 6** modifies the manner in which State Forests may perform its obligations under **clause 5** but does not otherwise relieve State Forests from its obligations under **clause 5** to supply each of the Allocations in each Year.
- 7. **SHORTFALL**
 - 7.1 Any quantity of Timber which the Company fails to take in any Year (for reasons other than Force Majeure or the default of State Forests or the State of NSW) and which is not part of an Undercut allowed under the conditions of **clause 5.5** may be forfeited by the Company at the election of State Forests and may be sold by State Forests under a separate agreement. The quantity of Timber which the Company fails to take and which State Forests may sell will be calculated by State Forests and deducted from the Total Allocation for the relevant Allocation. State Forests must notify the Company by written notice within 42 days after the end of the Year of the quantity of timber which has been deducted from the Total Allocation.

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- 7.2 If for reasons other than Force Majeure or the default of State Forests or the State of NSW the Company:
- 7.2.1 takes less than 80 per cent of an Allocation for two consecutive Years during the term of this Agreement; or
 - 7.2.2 takes less than 70 per cent of an Allocation in any Year,
- State Forests may terminate this Agreement under the provisions of **clause 27**.
- 7.3 Subject to **clause 7.4** if for reasons other than Force Majeure, or the default of State Forests or the State of NSW, the Company fails in any Year ("FD Year") to take at least 90% of an Allocation and State Forests does not elect to have the Company forfeit Timber under **clause 7.1** and does not terminate this Agreement under **clause 7.2**:
- 7.3.1 the Company must pay State Forests within 90 days of State Forests' written demand to pay (which may not be served before the end of the FD Year) the sum of money equal to the difference between the price that would have been payable had the Company taken 90% of the Allocation and the price paid or payable for the quantity of Timber comprising the Allocation actually taken by the Company in that FD Year. In calculating the price that would have been payable had the Company taken at least 90% of the Allocation the relevant price for Timber not taken is the weighted average price for the Timber actually taken in the relevant Year and is also to be determined having regard to **clauses 6.4 and 6.5**. Any sum payable by the Company under this clause is payable as pre-estimated and liquidated damages and not as a penalty;
 - 7.3.2 if in the Year in which the Company makes a payment under **clause 7.3.1** (the SFD Year) the Company takes a quantity of Timber in excess of 90% of the Allocation, the amount payable by the Company for the quantity of Timber comprising the Allocation above 90% for that Year will be reduced by the amount of any sum paid under **clause 7.3.1**; and
 - 7.3.3 the amount of any reduction allowed under **clause 7.3.2** must not exceed the sum that would have otherwise been payable for the quantity of Timber in excess of 90% at the price applicable for the SFD Year.
- 7.4 If the Company proposes to take less than 90% of an Allocation during a Year it may by notice ("Undercut Notice") to State Forests request State Forests to elect by notice to the Company ("Waiver Notice") to waive **clauses 7.1, 7.2, and 7.3**, or any of them, provided:
- 7.4.1 any Undercut Notice must:
 - (a) be in writing;
 - (b) specify the volume of the Allocation intended to be taken by the Company in the relevant Year;
 - (c) be served on State Forests no later than 3 months prior to the commencement of the Year;
 - 7.4.2 any Waiver Notice which State Forests in its absolute discretion elects to issue to the Company:
 - (a) must be in writing;
 - (b) must be served on the Company not later than 1 month prior to the commencement of the Year
 - (c) may be limited to a specified volume or such other conditions as State Forests sees fit; and
 - (d) will bind State Forests for the purposes of the application of **clauses 7.1, 7.2 and 7.3**, or any of them, in the manner specified in the notice.

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- 7.5 Nothing in this Agreement prevents the Company from requesting State Forests waive **clause 7.3** in circumstances other than those set out in **clause 7.4**.
- 7.6 If the Company makes a payment under **clause 7.3.1** in respect of a FD Year:
- 7.6.1 no forfeiture of Timber will occur under **clause 7.1**; and
- 7.6.2 the FD Year shall not be taken into account as a Year for the purposes of State Forests exercising a right to terminate under **clause 7.2.1** or **clause 7.2.2**.

8. METHOD OF SUPPLY

- 8.1 State Forests shall make Timber available by conducting Contract Harvesting and delivering the Timber to the Delivery Site.
- 8.2 If in any Year the Company requests State Forests supply it less than an Allocation, for the sole purpose of determining whether State Forests has complied with its obligations under this Agreement to supply that Allocation to the Company in that Year, State Forests will be deemed to have supplied that volume which it is ready willing and able to supply and not any lesser quantity which it actually supplies in accordance with the Company's request. Nothing in this clause will give State Forests any right to claim payment (except as provided in **clause 7**) for any Timber it is deemed to supply under this clause.

9. ANNUAL DELIVERY PLAN

- 9.1 No later than April in each Year State Forests and the Company must confer and negotiate in good faith to reach agreement on the Annual Delivery Plan for the following Year. In default of agreement by the end of the following May State Forests may determine the Annual Delivery Plan for the following Year. Any agreement or determination of the Annual Delivery Plan must recognise:
- 9.1.1 the need for the Company to stockpile Timber in some months to compensate for events preventing delivery such as wet weather preventing harvesting of Timber; and
- 9.1.2 the need for the Company to otherwise manage its mill site stockpiles to control inventory costs and minimise deterioration in the quality of stockpiled Timber.
- 9.2 State Forests must provide the Company with a copy of the Annual Delivery Plan for a Year not less than 21 days before the commencement of the Year.
- 9.3 The parties acknowledge that each Annual Delivery Plan contains indicative information and the parties must co-operate in the implementation of each Annual Delivery Plan and each must use their reasonable endeavours to comply with it.
- 9.4 If there is any inconsistency between any Annual Delivery Plan and this Agreement the provisions of this Agreement will prevail.
- 9.5 Agreement by State Forests to an Annual Delivery Plan or Monthly Delivery Schedule or amendment thereto which would result in the Company taking less than a volume of timber the Company is required to take under this Agreement in any Year will not constitute a waiver of any obligation imposed or right given by this Agreement.

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10. MONTHLY DELIVERY SCHEDULES

- 10.1 Each Year State Forests will use reasonable endeavours to ensure that the volume of Timber to be delivered under the relevant Annual Delivery Plan is delivered substantially in accordance with the Monthly Delivery Schedules for that Year.
- 10.2 Each calendar month no later than 7 days prior to the next month the parties must confer and negotiate in good faith to reach agreement on the Monthly Delivery Schedule for the next month. In default of agreement the Monthly Delivery Schedule for the next month will be determined by State Forests provided:
- 10.2.1 State Forests will have due regard to the Company's requests; and
- 10.2.2 If the Company has a special requirement regarding volume in a particular month State Forests will, with due regard to the practicalities and the rights of other persons supplied with Timber by State Forests, use all reasonable endeavours to meet the Company's request.
- 10.3 If State Forests or the Company wishes to vary a current Monthly Delivery Schedule, it must notify the other party as soon as practicable and State Forests and the Company must negotiate in good faith to reach agreement on an amended Monthly Delivery Schedule. In default of agreement the original Monthly Delivery Schedule shall apply.

11. AMENDMENT OF ANNUAL DELIVERY PLAN OR MONTHLY DELIVERY SCHEDULES

- 11.1 From time to time during the term of this Agreement the Company may request State Forests, by notice in writing, to consider any modifications or change to an Annual Delivery Plan which the Company believes is necessary to enable or facilitate the Contract Harvesting of any Timber under this Agreement. If State Forests is satisfied that the requested modification or changes are necessary and reasonable, with due regard to the practicalities and the rights of other persons supplied with Timber by State Forests, State Forests must amend or vary the Annual Delivery Plan in the manner requested by the Company.
- 11.2 If State Forests considers a modification or variation of an Annual Delivery Plan is necessary to enable or facilitate the Contract Harvesting of Timber under this Agreement, State Forests will consult with the Company in respect of the proposed modification or variation and take into account its views. After doing so it may modify or vary the Annual Delivery Plan to enable or to facilitate the Contract Harvesting. Nothing in this clause will relieve State Forests of its obligations under **clause 5.1**, as modified by **clause 6**.
- 11.3 Where any timber in a Compartment has been damaged or destroyed by fire, disease or other natural cause or access to a Compartment intended to supply an Allocation is otherwise prevented by Force Majeure, State Forests may, after consultation with the Company, amend any Annual Delivery Plan or Monthly Delivery Schedule as it deems necessary to facilitate Salvage operations or to adjust to the unavailability of timber in Compartments. Subject to Force Majeure nothing in this clause will relieve State Forests of its obligations under **clause 5.1**, as modified by **clause 6**.
- 11.4 State Forests must provide the Company with a copy of any varied Annual Delivery Plan or Monthly Delivery Schedule for period to which it applies:

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- 11.4.1 in the case of an Annual Delivery Plan or Monthly Delivery Schedule varied under **clause 11.3**:- as soon as practicable and in any event before the commencement of the period to which it applies; and
- 11.4.2 in any other case:- at least 28 days before the commencement of the period to which it applies.

12. DELIVERY

- 12.1 State Forests must effect delivery of Timber by delivering it:
 - 12.1.1 to the Delivery Site; and
 - 12.1.2 during the Delivery Hours and
 the Company may not refuse Timber or fail to unload Timber delivered to the Delivery Site in accordance with this **clause 12.1** and substantially with the relevant Monthly Delivery Schedule and otherwise in accordance with this Agreement.
- 12.2 Except where the parties have agreed that State Forests' contractors will unload the Timber (in which case **clause 12.3** shall apply) the Company must:
 - 12.2.1 promptly unload Timber delivered to it in accordance with this Agreement with due regard to the practicalities and available unloading equipment; and
 - 12.2.2 ensure that all unloading operations carried out by it at the Delivery Site are performed in a safe manner in accordance with:
 - (a) any relevant code issued by New South Wales WorkCover or other relevant agency which replaces or exercises the functions carried out by New South Wales WorkCover; and
 - (b) the Company's safety policies for the Delivery Site.
- 12.3 If the parties have agreed that State Forests' Contractors are to unload the Timber State Forests must ensure that its Contractors:
 - 12.2.1 promptly unload Timber for delivery in accordance with this Agreement with due regard to the practicalities and available unloading equipment; and
 - 12.2.2 ensure that all unloading operations carried out by them at the Delivery Site are performed in a safe manner in accordance with:
 - (a) any relevant code issued by New South Wales WorkCover or other relevant agency which replaces or exercises the functions carried out by New South Wales WorkCover; and
 - (b) the Company's safety policies for the Delivery Site.

13. TITLE AND RISK

- 13.1 Ownership of the Timber taken by the Company will pass to the Company on payment for the Timber.
- 13.2 Delivery will be effected and the risks of ownership of the Timber will pass to the Company when the Timber is unloaded in accordance with this Agreement.

14. SPECIFICATIONS

- 14.1 State Forests must make available or supply and the Company must accept any timber which conforms with the Specifications and is within other requirements of this Agreement.

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- 14.2 Timber will be deemed to conform with the Specifications if the Timber is unloaded at the Delivery Site in accordance with this Agreement and that Company does not object to its failure to meet Specifications by notice in writing to State Forests within seven days of its delivery.
- 14.3 If the Company objects to timber in terms of **clause 14.2** it must set the timber aside for inspection. State Forests must arrange for the inspection of the timber by a suitably qualified State Forests officer, in company with a representative of the Company, within 7 days after receipt of the objection. The adjudication of the disputed timber must be dealt with in accordance with the Code of Procedure. Despite the foregoing the State Forests' officer must provide a written determination in respect of the adjudication of the disputed timber.
- 14.4 A decision of a suitably qualified State Forests officer that the timber is Timber, will (except in the case of manifest error) be accepted by the parties as final and binding on the parties. The decision of the suitably qualified State Forests officer must be based on State Forests' hardwood log measurement manual 1st January 2002 edition, as amended from time to time following consultation with the Company. If a party disputes the adjudication on the grounds of manifest error the provisions of **clause 28** shall apply to the adjudication.
- 14.5 If the suitably qualified State Forests officer decides that any timber does not meet the Specifications and the parties cannot agree on terms upon which the Company agrees to purchase the timber, State Forests must within 7 days remove that timber from the Delivery Site at its own cost.
- 14.6 If quantities of Timber which conform to the Specification, and which the Company is entitled to under this Agreement in a Year, are not available in a Year as a consequence of Force Majeure or in breach of this Agreement:
- 14.6.1 the Company and State Forests must within a reasonable period of time confer with a view to exploring the possibility of the Company accepting timber from categories of logs which are not within the Specifications, in replacement of the quantities of Timber that are not available. State Forests must give written notice to the Company as soon as practicable and in any event within 28 days of becoming aware of a likely shortage and will in the same notice provide an opportunity for the Company to meet with State Forests and provide particulars of:
- (a) the extent and consequences of the shortage;
 - (b) details of other timber which State Forests can supply by way of replacement timber ("Replacement Timber"); and
 - (c) the terms and conditions (including price) on which State Forests would supply, or make available such Replacement Timber; and
- 14.6.2 The Company will not be entitled to invoke the provisions of **clause 27.6.1** or to claim any damages for breach against State Forests unless both parties have in good faith made all reasonable endeavours to meet the Company's needs for Timber from Replacement Timber available from State Forests but outside the scope of the Specifications.
- 14.7 Replacement Timber supplied to the Company under the provisions of **clause 14.6** will be deemed to be Timber supplied under this Agreement subject to the price for the timber being determined under The Price System.
- 14.8 At the request of the Company, State Forests must consult with the Company with respect to the terms and conditions (including price) upon which State Forests is prepared to supply or make available Replacement Timber.

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- 14.9 The Company has no obligation to accept Replacement Timber on the terms proposed or at all.

15. DETERMINATION OF QUANTITY OF TIMBER

- 15.1 The method of determination of the quantity of Timber upon which the price is payable under this Agreement will be as set out in the Code of Procedure. Either party may propose amendments to the Code of Procedure. If a party proposes an amendment the parties must as soon as practicable negotiate in good faith to reach agreement as to the amendment of the Code of Procedure. In default of agreement the Code of Procedure may be amended by State Forests as may be considered necessary by State Forests from time to time but State Forests will consult with and take into account any comments of the Company before any amendments are effected or implemented.
- 15.2 Any determination by State Forests to amend or not amend the Code of Procedure and the terms of any amendment must be made and conveyed to the Company in writing within a reasonable period after the conclusion of negotiations.
- 15.3 The Company acknowledges in relation to good faith negotiations regarding amendments to the Code of Procedure that the Code of Procedure is a standardised document applicable to a number of persons who are supplied with Timber by State Forests from the Area of Supply and that amendments to the Code of Procedure will be introduced uniformly to those persons. Consequently a determination to make amendments to the Code of Procedure must take into account a wider range of issues other than those of immediate concern to the Company. The parties agree that any amendment of the Code of Procedure will apply, uniformly, to all persons supplied with Timber by State Forests from the Area of Supply.
- 15.4 The Company also acknowledges and accepts that State Forests will amend the Code of Procedure to introduce an electronic delivery docket system. The Company acknowledges and accepts it will be required to purchase and maintain computer hardware and software technology to support the system together with having e-mail capacity.
- 15.5 In the event that the parties agree an Allocation (or part thereof) is to be weighed and if the Company provides a weighbridge or other measuring device approved by State Forests, the Company must maintain and verify the weighbridge or other device as required by the manufacturer's specifications.
- 15.6 State Forests may from time to time undertake an independent verification of the operation and accuracy of the weighbridge or other device used in the measurement of Timber upon which the price is payable under this Agreement.
- 15.7 Any determination by State Forests to amend or not amend the Code of Procedure must be made and conveyed to the Company in writing within 21 days of the conclusion of negotiations on the proposed amendment. State Forests must give written notice of its determination. If the Company is dissatisfied with the determination it may, but only within 10 days of receipt of the notice of determination, claim a dispute in accordance with **clause 28**.
- 15.8 If there is any inconsistency between the Code of Procedure and this Agreement, the provisions of this Agreement shall prevail.

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16. DELIVERED PRICE

- 16.1 The prices payable under this Agreement for Timber taken by the Company under this Agreement shall be the Delivered Prices.
- 16.2 The Delivered Prices payable from time to time shall be the total of:
- 16.2.1 the Stumpage Price determined in accordance with **clause 17**; and
 - 16.2.2 the Delivery Charges determined in accordance with **clause 18**; in respect of the Timber.

17. STUMPAGE PRICE

- 17.1 The Stumpage Price payable from time to time for Timber shall be calculated by reference to the category and rates set out in the Price Schedule for the Timber.
- 17.2 State Forests may amend or vary the Price Schedule from time to time following a review by State Forests of the various components of the Price Schedule in accordance with The Price System.
- 17.3 In conducting a review of the Price Schedule State Forests:
- 17.3.1 will be subject at all times to the requirements of the Act;
 - 17.3.2 must conform with the methodologies and principles set out in The Price System; and
 - 17.3.3 will consult with the Company, taking its written representations into account in considering pricing elements, and provide a proper written response to such representations which are relevant to the matters referred to in **clause 17.3.3** provided that any such response may be part of a generic response to representations by the Company and other recipients of Timber from the Area of Supply.
- 17.4 A Price Schedule which is varied or amended by State Forests following a review may be implemented at any time during a Year provided that after completion of the requirements of **clause 17.3**, State Forests gives not less than 28 days prior written notice to the Company of the varied or amended Price Schedule.
- 17.5 State Forests may review and vary The Price System from time to time. In performing any review of The Price System State Forests will at all times consult with the Company and be subject to the policies and directions of the State of NSW.
- 17.6 State Forests will provide to the Company a copy of The Price System as it applies at the Commencement Date and will promptly forward a copy of The Price System to the Company if varied or amended following a review.

18. DELIVERY CHARGES

- 18.1 The Delivery Charges for Timber harvested and hauled from a Price Zone to the Delivery Site shall be determined by applying the rates set out in the Delivery Charge Schedule for the type of Timber, the Price Zone and the Delivery Site involved. State Forests must prepare the Delivery Charge Schedule as agreed or determined in accordance with this clause.
- 18.2 A Delivery Charge for Timber harvested from a Price Zone and hauled to the Delivery Site will be the total of:

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- 18.2.1 A cost per cubic metre for the type of Timber being an aggregate of costs for the various items of work comprising the Contract Harvesting necessary to harvest and haul the Timber from the particular Price Zone to the Delivery Site; and,
- 18.2.2 A cost per cubic metre for State Forests' management and administration of the Contract Harvesting involved which the parties agree at the date this Agreement takes effect is \$[REDACTED] per cubic metre.
- 18.3 The Delivery Charge at the Commencement Date shall be as set out in the Delivery Charge Schedule.
- 18.4 In each Year and commencing no later than the end of July the parties must confer to review the Delivery Charge Schedule and must negotiate in good faith to reach agreement on amendments to the Delivery Charge Schedule to apply for the following DC Year. In default of an agreement on the required amendments by one week prior to the commencement of the following DC Year State Forests may determine which amendments it considers are necessary. State Forests may amend any of the rates specified in the Delivery Charge Schedule in accordance with the agreement of the parties or the determination of State Forests as the case may be, and those rates will apply from the first day of the following DC Year.
- 18.5 Any review of the Delivery Charge by State Forests and the Company must take into account:
- 18.5.1 changes in the level of the costs of conducting Contract Harvesting which have occurred during the preceding 12 month period, as determined by the mechanism set out in **Schedule 8**; and
At the request of either party the review must also take into account:
- 18.5.2 Changes in the physical circumstances of harvesting, including yield per hectare, timber piece size, slope and ground conditions, forecasted to apply in the relevant Year when compared to those physical circumstances forecasted in the last review to apply in the Year prior to the relevant Year;
- 18.5.3 Changes in the physical circumstances of haulage, including average lead distance to the Delivery Site, road classifications, delivery hours and unloading times at the Delivery Site, forecasted to apply in the relevant DC Year when compared to those physical circumstances forecasted in the last review to apply in the DC Year prior to the relevant DC Year;
- 18.5.4 the market rates for the various items of work comprising the Contract Harvesting under this Agreement provided:
- those rates are comparable, having regard to the type of Timber produced and the physical circumstances of harvesting and haulage referred to in **clauses 18.5.2 and 18.5.3**;
 - the party tabling rates as relevant must verify them to the reasonable satisfaction of the other party;
 - any comparison between market rates and Delivery Charges must take into account the cost to State Forests of administering and managing Contract Harvesting associated with this Agreement,
- 18.6 If the Company disputes that an amendment to the Delivery Charge determined by State Forests is, when compared to the matters referred to in **clause 18.5.4**, fair reasonable and competitive, it may not, in the course of dispute resolution under **clause 28**, rely upon information which it has not provided to State Forests under **clause 18.5.4** during the review.

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- 18.7 In January of each of 2009, 2014 and 2019 the parties must meet to review in good faith the matters set out under **clause 18.5** and to reach agreement if possible regarding amendments to those matters (if any) necessary to ensure they result in amendments to the Delivery Charge which are reasonable in relation to the requirements of **clause 18.9** including:
- 18.7.1 the addition of other matters to be taken into account;
 - 18.7.2 the deletion or modification of existing considerations;
 - 18.7.3 amendments to the mechanism set out in **Schedule 8** to vary the weight given to any cost factor or indicator by the mechanism;
 - 18.7.4 amendments to the mechanism set out in **Schedule 8** to include any cost factor;
 - 18.7.5 the replacement of the mechanism set out in **Schedule 8**; or
 - 18.7.6 Any or all of the above.
- 18.8 In the event the parties are unable to reach agreement on appropriate amendments referred to in **clause 18.7** by the end of March following the commencement of the review State Forests may determine the amendments it considers necessary and implement those amendments in time to be taken into account in the review of the Delivery Charge Schedule to apply in the following DC Year. If the Company disputes any such amendment **clause 28** will apply and for the purposes of **clause 28.5** the matters to be taken into account in determining the amendments are whether they are reasonable relation to the requirements of **clause 18.9**.
- 18.9 State Forests must ensure that the Delivery Charges which it determines under this **clause 18** are fair, reasonable and competitive.
- 18.10 State Forests must promptly provide the Company with a copy of the Delivery Charge Schedule as amended from time to time.
- 18.11 At any time which State Forests intends to amend the area of any Price Zone, State Forests must:
- 18.11.1 consult with the Company in relation to the proposed amendment(s); and
 - 18.8.2 also review the Delivery Charge Schedule in accordance with the principles set out in **clauses 18.5 and 18.9**.
- 19. PAYMENT**
- 19.1 State Forests will issue monthly invoices for Timber taken by the Company during the previous month.
- 19.2 The Company must pay any invoice issued to it prior to the expiration of 14 days after the date of its issue, or the expiration of the calendar month within which it was issued, whichever last occurs. The Company is liable to pay an invoice issued to it and any interest accrued on that invoice as a debt due and payable to State Forests.
- 19.3 If the Company fails to pay an invoice within the time for payment of that invoice:
- 19.3.1 State Forests may give written notice to the Company of its intention to suspend the Company's right to take Timber if payment is not made within 7 days after the date of the notice; and
 - 19.3.2 State Forests may suspend the Company's right to take Timber under this Agreement if the invoice is not paid within the 7 day period.

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20. GOODS AND SERVICES TAX

- 20.1 The Delivered Prices and any other consideration for supplies specified in this Agreement do not, subject to the operation of this clause, include any amount in respect of GST unless provided otherwise.
- 20.2 The GST may be imposed on the prices for Timber delivered under this Agreement.
- 20.3 If GST is or will be imposed on a supply made under this Agreement, the supplier may:
- 20.3.1 increase the consideration otherwise provided for that supply under this Agreement by the amount of that GST; or
 - 20.3.2 otherwise recover from the recipient the amount of that GST.
- 20.4 The supplier must ensure that any invoice issued under this agreement in respect of a taxable supply is a Tax Invoice or Adjustment Note as appropriate or, if no invoice is to be otherwise issued under this Agreement, must issue a Tax Invoice or Adjustment Note as appropriate within 7 days of GST being imposed on a taxable supply made under this Agreement. Notwithstanding any other provision of this Agreement the payment of any amount by the recipient in respect of a taxable supply is subject to the issuing of the relevant Tax Invoice or Adjustment Note to the recipient.
- 20.5 Costs required to be reimbursed or indemnified under this Agreement must exclude any amount in respect of GST included in the costs for which an entitlement arises to claim an input tax credit provided that the reimbursement or indemnification does not amount to consideration for a taxable supply.
- 20.6 If the consideration for a supply under this Agreement is calculated by reference to the consideration or value of other supplies, in performing that calculation, the consideration or value for those other supplies excludes any amount in respect of GST payable on those supplies.
- 20.7 In this clause:
- 20.7.1 **Adjustment Note** includes any document or record treated by the Commissioner of Taxation as an adjustment note or as enabling the claiming of an input tax credit for which an entitlement otherwise arises;
 - 20.7.2 **GST** includes any replacement or subsequent similar tax;
 - 20.7.3 **GST Act** means A New Tax System (Goods and Services Tax) Act 1999 (Cth);
 - 20.7.4 **New Tax System changes** has the same meaning as in the Trade Practices Act 1974 (Cth);
 - 20.7.5 **Tax Invoice** includes any document or record treated by the Commissioner of Taxation as a tax invoice or as enabling the claiming of an input tax credit for which an entitlement otherwise arises; and
 - 20.7.6 Terms defined in the GST Act have the same meaning in this clause unless provided otherwise.

21. COMPLIANCE

- 21.1 The Company and State Forests must each respectively comply with:
- 21.1.1 the provisions of the Act and other Acts of the State of NSW;
 - 21.1.2 the Code of Procedure; and

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21.1.3 the requirements of any person acting in the exercise of statutory powers (State or Commonwealth) enabling them to give directions in connection with or affecting the availability, taking, supply or delivery of Timber.

21.2 The Company and State Forests must each respectively ensure that their respective agents, contractors or other persons under their respective control or direction comply with **clause 21.1**;

22. SALE OF TIMBER TO OTHER PERSONS

22.1 State Forests reserves the right to:

22.1.1 supply Timber and other timber from within the Area of Supply; or

22.1.2 issue licences to obtain Timber, timber, products or forest materials within the Area of supply;

to any other person providing it does not, by so doing, adversely affect its capacity to perform its obligations under this Agreement and nothing in this **clause 22** relieves State Forests from performing its obligations under this Agreement.

22.2 The Company may from time to time sell Timber which it owns to any person without the need for processing the Timber.

22.3 If the Company sells Timber under **clause 22.2** the Company must provide State Forests with details in writing of the volume by log category of sales and the identity of the purchaser within 60 days after the end of each Year.

23. SECURITY

23.1 State Forests may at its sole discretion require the Company to provide security for the purpose of ensuring the due and proper performance of the Company's obligations under this Agreement in respect of payment of money.

23.2 If State Forests requires the Company to provide security the Company must provide the security ('security') in the amount determined by State Forests from time to time which must not exceed a sum equivalent to 15% of the Delivered Price of the volume of Timber State Forests is to make available in each Year assuming it was made available in accordance with the Annual Delivery Plan for the Year ('secured amount').

23.3 State Forests will give the Company written notice of any amount determined under **clause 23.2** and any adjustment to or variation of the secured amount that may be determined by State Forests under the provisions of **clause 23**.

23.4 the Company must adjust or vary the secured amount within 28 days of the receipt of a notice from State Forests under **clause 23.3**.

23.5 The security must:

23.5.1 be in a form approved by State Forests;

23.5.2 be lodged within fourteen (14) days of the execution of this Agreement; and

23.5.3 be in a form which allows State Forests to draw upon the secured amount if the Company is in breach of this Agreement.

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- 23.6 If the security is not transferable by delivery, it must be accompanied by an executed transfer or other documentation sufficient to effect transfer of the security. The costs (including stamp duty) of any transfer or retransfer must be borne by the Company.
- 23.7 If the Company commits a material breach of this Agreement with respect to the payment of money and does not remedy that material breach within 7 days after being given notice of that breach State Forests may at any time thereafter, draw upon the secured amount to meet any loss or damages arising from the Company's failure to perform any of its obligations to pay money under this Agreement.
- 23.8 If State Forests draws on the secured amount under this Agreement but does not terminate this Agreement as a result of any breach, then the Company must provide additional security so that the secured amount is maintained at the level notified under **clause 23.3**.
- 23.9 State Forests may suspend the Company's rights to take any Timber if the Company fails to lodge the security or to vary or adjust the secured amount within the time required in accordance with this **clause 23** or by any notice to the Company under this **clause 23**.
- 23.10 State Forests must release the security to the Company within six months of the date of termination of this Agreement if no money is then due to State Forests or any earlier date that may be otherwise agreed.

24. FORCE MAJEURE

- 24.1 If the Company is prevented from taking or accepting Timber or from carrying on production of sawn timber by Force Majeure and:
- 24.1.1 the Force Majeure was not caused by any act or omission on the part of the Company or any employee or agent of the Company;
 - 24.1.2 the Company had taken all practicable precautions to prevent the Force Majeure; and
 - 24.1.3 the Company has made all reasonable efforts to contain the effect of the Force Majeure;
- then the Company may apply to State Forests for suspension or modification of its obligations under this Agreement to the extent that its ability to meet its obligations have been adversely affected by the Force Majeure.
- 24.2 Where the Company makes an application under **clause 24.1**, State Forests will negotiate with the Company in good faith to review the Allocations taking into account the functions and obligations of State Forests under this Agreement and the Act and the requirements for the Company to do all things practicable to mitigate the effect of the Force Majeure.
- 24.3 If State Forests is prevented from performing all or any of its obligations under this Agreement by reason of Force Majeure:
- 24.3.1 the Company will have no claim against State Forests under this Agreement, to the extent that the non-performance is due to the Force Majeure;
 - 24.3.2 if State Forests is unable to resume the performance of its obligations within a period of 12 months from the date of the occurrence of the Force Majeure or the date when the occurrence of the Force Majeure first became apparent (the 'relevant date') either party may terminate this Agreement by written notice. The right to give notice under this clause must be exercised within a period of 15 months from the relevant date and in this regard time will be of the essence; and

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24.3.3 State Forests may allocate any Timber which is available to the Company and other persons in a manner which reflects State Forests functions and obligations under the Act and accords with any directions of the Minister provided that where reasonably practicable and not inconsistent with those functions, obligations or directions State Forests must apportion the available Timber justly and equitably among those persons who would in the usual course, have been supplied with the Timber had it not been for the Force Majeure.

24.4 A party affected by Force Majeure must give initial notice of the existence or occurrence of the Force Majeure as soon as is practicable to do so and in any case it must provide a more detailed notice within 28 days of the Force Majeure being apparent which provides clear details of the event or occurrence claimed as Force Majeure and setting out particulars of the likely effects of the event or occurrence in question.

25. LEGAL RESPONSIBILITY AND LIMITATION OF LIABILITY

25.1 Where the Company is prevented from taking Timber:

25.1.1 by an act or omission of State Forests, being a breach of this Agreement, then State Forests and not the State of NSW will be the party, if any, responsible to the Company for any loss suffered; or

25.1.2 by an act or omission of the State of NSW, being a breach of this Agreement, the State of NSW and not State Forests will be the party, if any, responsible to the Company for any loss suffered; or

25.1.3 by an act or omission or law of the Commonwealth of Australia, then neither State Forests nor the State of NSW will be in any way responsible to the Company for any loss suffered.

25.2 Where State Forests or the State of NSW is in breach of this Agreement by reason of any failure to make Timber available or to supply or deliver Timber any loss suffered by the Company will be limited to any loss, damage or expense incurred by the Company as a direct result of the failure to make Timber available or to supply or deliver Timber under this Agreement and will not include any loss of profits or consequential loss.

26. ISSUE OF REQUIRED LICENCES

26.1 Subject to **clause 26.4** and compliance by the Company with the requirements under the Act necessary to entitle the Company to the issue of the Required Licences or any of them, State Forests must, on application, issue the Required Licences from time to time to the Company throughout the term of this Agreement so that the Required Licences are in force for the term.

26.2 Subject to **clause 26.4** State Forests must not impose any conditions on the Company's application for any of the Required Licences, which are unreasonable or in addition to the conditions commonly imposed on the application for licences of that type or which are inconsistent with the provisions of this Agreement.

26.3 Subject to **clause 26.4** State Forests must not impose any conditions in any Required Licences which are in addition to the conditions commonly included in licences of that type or which are inconsistent with the provisions of this Agreement.

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- 26.4 Nothing in this **clause 26** prevents State Forests from refusing to issue licences, or from cancelling licences or imposing conditions in accordance with the proper exercise of its statutory functions, duties, and powers under the Act.

27. DEFAULT OR INSOLVENCY

- 27.1 If the Company or State Forests breaches or repudiates this Agreement, nothing in this clause will prejudice the right of either party to recover damages or exercise any other right.
- 27.2 If the Company commits a material breach of this Agreement and State Forests considers that damages may not be an adequate remedy, State Forests may give the Company a written notice to show cause. Material breaches include without limitation:
- 27.2.1 failing to take the quantities of Timber set out in **clause 7.2**;
 - 27.2.2 failing to accept Timber in breach of **clause 12.1 and 14.1**;
 - 27.2.3 failing to make payments in breach of **clause 19**;
 - 27.2.4 failing to provide security or to adjust or vary the secured amount in breach of **clause 24**;
 - 27.2.5 purporting to assign the whole or any part of this Agreement without the approval of the Minister in breach of **clauses 29 and 30**;
 - 27.2.6 failing to comply with conditions imposed by the Minister pursuant to **clause 30** of this Agreement; and
 - 27.2.7 failing to meet Value Added Criteria in breach of **clause 31.1**.
- 27.3 A notice under **clause 27.2** must:
- 27.3.1 state that it is a notice under **clause 27.2** of this Agreement;
 - 27.3.2 specify the alleged material breach;
 - 27.3.3 require the Company to show cause in writing why State Forests should not exercise its right to terminate under **clause 27.4**;
 - 27.3.4 specify the time and date by which the Company must show cause (which must not be less than 14 days); and
 - 27.3.5 specify the place at which cause must be shown.
- 27.4 If by the time specified in a notice under **clause 27.2** the Company fails to show reasonable cause why State Forests should not exercise its right of termination, State Forests may by notice in writing to the Company terminate this Agreement.
- 27.5 If:
- 27.5.1 the Company informs State Forests in writing or its creditors generally that it is insolvent;
 - 27.5.2 commits an act of bankruptcy;
 - 27.5.3 has a bankruptcy petition presented against it;
 - 27.5.4 is made bankrupt;
 - 27.5.5 a meeting of creditors of the Company is called with a view to:
 - (a) entering a scheme of arrangement or composition with creditors; or
 - (b) placing the Company under official management;
 - 27.5.6 the Company enters a scheme of arrangement or composition with creditors;
 - 27.5.7 a resolution is passed at a meeting of creditors to place the Company under official management;
 - 27.5.8 the Company is placed under official management;
 - 27.5.9 a receiver of the property or part of the property of the Company is appointed;
 - 27.5.10 a winding up order is made in respect of the Company; or

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27.5.11 execution is levied against the Company by creditors, debenture holders or trustees or under a floating charge.

State Forests may, without giving a notice to show cause, terminate this Agreement by notice in writing to the Company.

- 27.6 If State Forests commits a material breach of this Agreement and the Company considers that damages may not be an adequate remedy, the Company may give State Forests a written notice to show cause. Material breaches include without limitation:
- 27.6.1 failing to make available an Allocation for each Year in breach of **clause 5** as modified by **clause 6**;
 - 27.6.2 a breach of **clauses 8, 10.1, and 12.1**; and
 - 27.6.3 failing to process any application requesting an assignment of this agreement in breach of **clauses 29 or 30**; and
- 27.7 A notice by the Company under **clause 27.6** must:
- 27.7.1 state that it is a notice under **clause 27.6** of this Agreement;
 - 27.7.2 specify the alleged material breach;
 - 27.7.3 require State Forests to show cause in writing why the Company should not terminate this Agreement;
 - 27.7.4 specify the time and date by which State Forests must show cause (which must not be less than 14 days); and
 - 27.7.5 specify the place at which cause must be shown.
- 27.8 If by the time specified in a notice under **clause 27.6** State Forests fails to show reasonable cause why the Company should not exercise its right of termination, the Company may by notice in writing to State Forests terminate this Agreement.

28. RESOLUTION OF DISPUTES - MANDATORY MEDIATION AND ARBITRATION

- 28.1 If a dispute or difference between the parties arises out of or in connection with this Agreement or concerning the interpretation or operation of any provision of this Agreement which cannot be settled by the parties within twenty eight (28) days, the parties agree that they must endeavour to settle the dispute or difference by mediation before having recourse to arbitration. The mediator must be a person agreed by the parties or failing agreement a party may request the Australian Commercial Disputes Centre (ACDC) to appoint a mediator and the mediator will be so appointed.

The mediator must conduct proceedings under this clause in accordance with the Guidelines for Commercial Mediation of the ACDC. During the course of any mediation each party must be represented by a person having authority to agree to a resolution of the dispute.

- 28.2 In the event that the dispute has not been settled within twenty eight (28) days or such other period as agreed to in writing between the parties, after the appointment of the mediator, the dispute or difference must be submitted to arbitration.

Any arbitration must be conducted by a person acceptable to the parties but if the parties are unable to agree to the appointment of an acceptable person within fourteen (14) days of one party giving the others a written nomination of a suitable person or persons, then a party may request the President for the time being of the Institute of Arbitrators, Australia, to appoint an arbitrator

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and the arbitrator will be so appointed. Any arbitration must be undertaken in accordance with, and subject to, The Institute of Arbitrators Australia Rules for the Conduct of Commercial Arbitration.

- 28.3 The Arbitrator or some person appointed on the Arbitrator's behalf may investigate the Company's and State Forests' affairs and accounts so far as may be necessary to assist the Arbitrator to determine any matter referred for arbitration. The Company and State Forests must give the Arbitrator full access to all accounts and papers necessary for that purpose and must afford the Arbitrator full information and assistance.
- 28.4 Any mediation or arbitration must be held in Sydney, NSW and either party may be represented by a legal practitioner.
- 28.5 In so far as the provisions of this **clause 28** apply to **clauses 17 and 18**, the issue for consideration by any arbitration or litigation is to be limited to whether the Delivered Price, the Stumpage Price, the Delivery Charge, or the mechanism set out in **Schedule 8** (as the case may be) in dispute (the "Disputed Item"), was a reasonable one considering the factors and principles set out in those clauses to be taken into account in determining the Disputed Item and, otherwise met the requirements for the Disputed Item set out in that clause.
- 28.6 If an arbitration or litigation regarding a Disputed Item determines that State Forests determination of a Disputed Item was unreasonable or did not comply with the requirements for the Disputed Item set out in those clauses, then State Forests must:
- 28.6.1 promptly re-determine the Disputed Item which will then apply from the first date the Dispute Item was originally intended to apply; and
- 28.6.2 refund to the Company any over payment made under the Disputed Item with interest calculated pursuant to **clause 33**.

29. ASSIGNMENT

- 29.1 The Company may not without the prior approval of the Minister assign its rights and entitlements under this Agreement in whole or part to any person.
- 29.2 If the Company is a corporation, any change in control of the Company (or if the Company is a subsidiary, any change in control of its holding company) will be deemed to be an assignment of the Company's rights and entitlements under this Agreement. For the purpose of this clause 'change in control' means change in control of more than 50% of the shares with the right to vote in general meetings of the corporation.
- 29.3 If the Company wishes to assign the whole or any part of this Agreement it must make a written application to State Forests requesting an assignment and must provide all details and information concerning the assignee and the effect of the assignment as may be reasonably required by State Forests.
- 29.4 The Company must pay all debts due and payable to State Forests under this Agreement before an assignment (in whole or part) of its interest in this Agreement.
- 29.5 Upon receipt of any request for an assignment of the whole or any part of this Agreement, State Forests must process the application in accordance with **clause 30** provided the Company has supplied any details and information required by State Forests under **clause 29.3**.

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- 29.6 The Company must ensure that any assignee executes all agreements and other documents which State Forests may reasonably require to record or effect any assignment.

30. MINISTER'S APPROVAL FOR ASSIGNMENT

- 30.1 State Forests must consider any application made in relation to requesting an assignment of the whole or part of this Agreement and recommend to the Minister the action that the Minister should take on the application. The Minister will have regard to any recommendation of State Forests but is not bound by any recommendation. State Forests must make any such recommendation within 3 months of receiving the request for assignment unless State Forests extends that period by notice in writing to the Company provided that any such notice must state the extended period, give the reasons why the recommendation has not been made to the date of the notice, and the reasons why a further period is required before the recommendation can be made.
- 30.2 The Minister may determine an application requesting an assignment of the whole or part of this Agreement by granting the application (either unconditionally or subject to conditions of the kind set out in **clause 30.3**) or by refusing the application. An application may only be refused on the following grounds:
- 30.2.1 the Company fails to satisfy such Value Added Criteria as have been adopted by the Minister;
 - 30.2.2 such grounds as may be prescribed by regulations under the Act;
 - 30.2.3 such grounds as the Minister (acting reasonably) considers relevant having regard to;
 - (a) the need to promote a competitive timber industry and to prevent misuse of market power; or
 - (b) government policy including the socio-economic impact of the assignment on rural communities; or
 - (c) the impact on State Forests capacity to meet its obligations under this Agreement or other written contracts for the harvesting haulage or supply of timber; or
 - 30.2.4 at the time the application is made the Company has committed a material breach which has not been remedied or rectified including without limitation any failure to make payment to State Forests as required under **clause 19**.
- 30.3 The Minister may impose (without limitation) the following kinds of conditions on an application for requesting an assignment of the whole or part of this Agreement:
- 30.3.1 a condition requiring the Company or any assignee to take action to comply with or satisfy Value Added Criteria as have been adopted by the Minister;
 - 30.3.2 a condition requiring the Company or any assignee to prepare, and submit to the Minister, a business plan ('designated business plan') setting out the Company's or any assignee's policies, practices and procedures for the implementation or maintenance of any Value Added Criteria;
 - 30.3.3 a condition requiring the Company or any assignee to furnish to the Minister (at the times and for the periods as the Minister may decide) information the Minister may require to enable the Minister to determine whether or not the Company or the assignee has satisfied or is complying with any Value Added Criteria or is conducting its business in accordance with a designated business plan; and
 - 30.3.4 in the event the Company has committed a material breach which has not been remedied or rectified including without limitation any failure to make payment to State Forests as required under **clause 19**, a condition requiring any assignee to undertake the

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rectification or remediation of the material breach including the payment in full of any accrued debts due and owing to State Forests.

31. ASSESSMENT OF VALUE ADDED PERFORMANCE

- 31.1 The Company must during the term of this Agreement meet the Value Added Criteria for the forestry industry as have been adopted by the Minister from time to time and of which the Company has received reasonable notice in order to meet the Value Added Criteria. For the purpose of this **clause 31** notice of the Value Added Criteria includes notice of any guidelines issued on the Minister's behalf indicative of the type of Value Added Criteria the Minister may adopt.
- 31.2 If requested by State Forests at any time during the term of this Agreement, the Company must submit to State Forests all records, information and data necessary to enable State Forests to assess whether the Company has satisfied the Value Added Criteria as have been adopted by the Minister. The Company must afford State Forests all reasonable assistance and must provide all further details as may be reasonably required by State Forests to make an assessment under this clause.

32. VARIATION

- 32.1 This Agreement comprises the entire understanding of the parties.
- 32.2 None of the provisions of this Agreement may be varied, waived, discharged or released either at law or in equity, unless by the express consent of the parties in writing.

33. INTEREST

- 33.1 In the event that the Company fails to pay any money due to State Forests when required to do so by this Agreement, interest will accrue on all unpaid money from the date of default until payment in full at the rate of interest per annum for the time being payable under Schedule J of the Supreme Court Rules (NSW).

34. NOTICE

- 34.1 Any notice required to be served under this Agreement may be served:
- (a) in the case of the Company:
 - (b) in the case of State Forests:
General Manager, Marketing
State Forests of NSW
Building 2, 423 Pennant Hills Rd
Locked Bag 23, Pennant Hills NSW 2120
- 34.2 The parties may change the address for service of notice from time to time by notice in writing to the other party.
- 34.3 A notice under this Agreement must:
- 34.3.1 be in writing and directed to the other party as specified in **clause 34.1** or the address last notified by the intended recipient to the sender; and
 - 34.3.2 forwarded to the address, facsimile number or the email address of that party.

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- 34.4 A notice under this Agreement will be deemed to be served:
- 34.4.1 in the case of delivery in person – when delivered to the recipient's address for service and a signature received as evidence of delivery;
 - 34.4.2 in the case of delivery by post – within three business days of posting;
 - 34.4.3 in the case of delivery by facsimile- at the time of dispatch if the sender receives a transmission report which confirms that the facsimile was sent in its entirety to the facsimile number of the recipient;
 - 34.4.4 in the case of delivery by email, on receipt of confirmation by the sender that the recipient has received the email.
- 34.5 Despite the preceding clause, if delivery or receipt of a communication is on a day which is not a business day in the place to which the communication is sent or is later than 5 pm (local time in that place) it will be deemed to have been duly given or made at 9 am (local time at that place) on the next business day in that place.

35. GOVERNING LAW

- 35.1 This Agreement is governed by the laws of New South Wales and the parties agree to the jurisdiction of the Courts of New South Wales.

36. SEVERABILITY

- 36.1 If any provisions of this Agreement are held to be invalid, illegal or unenforceable by a Court or other tribunal of competent jurisdiction, the validity, legality and enforceability of the remaining provisions will not in any way be affected or impaired thereby.

37. GENERAL

- 37.1 A party terminating this Agreement as a result of a failure or default of the other party may only claim damages for any loss resulting from the failure or default if the claim for damages is not excluded under this Agreement.
- 37.2 If a party is at liberty to determine a matter under this Agreement or act unilaterally with respect to some amendment of any procedure (including the Code of Procedure) it must, in doing so, act reasonably and in good faith.
- 37.3 If a party is obliged to consult with another party the parties must consult with each other in good faith and have reasonable regard to what is put by the other party.

38. CONFIDENTIALITY

- 38.1 No party will disclose the contents or terms of this Agreement or any information or documents received by it in connection with the negotiation of this Agreement or pursuant to the provisions of this Agreement without the prior written consent of the other parties, except to the extent that:
- 38.1.1 the information is available to the public generally;
 - 38.1.2 that party is required to make the disclosure by law or to make any filing, recording or registration required by law;
 - 38.1.3 the disclosure is necessary or advisable for the purpose of obtaining any consent, authorization, approval or licence from any public body or authority;

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- 38.1.4 it is necessary or expedient that the disclosure be made to any taxation or fiscal authority;
- 38.1.5 the disclosure is made on a confidential basis to the professional advisers of that party (including any industry association) for the purpose of obtaining advice in relation to this Agreement or the enforcement of this Agreement or otherwise for the purpose of consulting those professional advisers;
- 38.1.6 the disclosure is required or desirable to be made in pursuance of any procedure for discovery of documents and any proceedings before any court, tribunal or regulatory body;
- 38.1.7 the disclosure is made on a confidential basis to a potential financier of the party, purchaser of the party or shares in the party, or assignee of the party's interest in this Agreement.

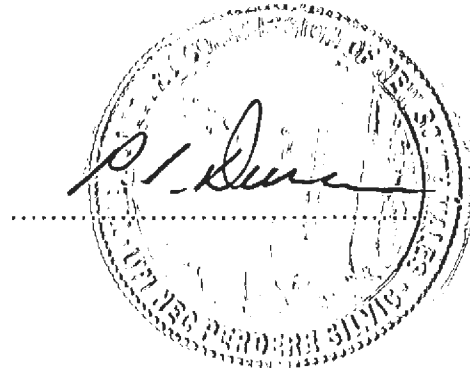
39. OBLIGATION TO CONSULT

- 39.1 Where in this Agreement there is an obligation to meet to review, confer, negotiate or consult the obligation of each party is to do so in good faith and have reasonable regard to matters put by the other in respect of the relevant subject matter.
- 39.2 Where in this Agreement a party is entitled to determine a matter following a review, conference, negotiation or consultation with the other, in determining the matter the party determining the matter must act reasonably and in good faith and have reasonable regard to matters put by the other in respect of the relevant subject matter.

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IN WITNESS whereof the parties hereto have executed this Agreement as a deed the day and year first hereinbefore written.

I PETER DUNCAN)
 (name))
MANAGING DIRECTOR)
 (position))
 have hereunto affixed the)
 Seal of the **FORESTRY COMMISSION**)
OF NEW SOUTH WALES)
 in the presence of:)



EXECUTED BY THORA)
SAWMILLING PTY LIMITED)
 BY [two of its directors])
 Or [a director and secretary] or [its sole director])

B. E. Waugh)
 Director)

[Signature])
 Secretary/Director)

SIGNED SEALED AND DELIVERED)
by THE HONOURABLE)
CRAIG KNOWLES Minister for)
 Infrastructure and Planning and)
 Minister for Natural Resources)
 in and for the State of New South Wales)
 for and on behalf of the Crown (but not)
 so as to incur any personal liability) in the)
 presence of:)

[Signature])
 Witness)

[Signature])
 Minister for Infrastructure and Planning and)
 Minister for Natural Resources)

SCHEDULE 1

Specifications
for

Hardwood Timber Between 1 July 2004 to 30 June 2005

Product	Sawlog Grade 1 (High Quality Large Sawlogs, HQL)
Species	All species of the Genera Eucalyptus, Corymbia, Lophestemon and Syncarpia.
Length	Minimum of 24dm and then random
Centre Diameter Under Bark	Minimum of 40cms
Internal Defect	Maximum pipe as set out below.
External Defect	Maximum total defect as set out below
Sweep	<20% of log diameter over any 24dm log length
Kinks	At least the minimum log length both sides of the kink
Spiral Grain	<12.5% slope (1 in 8)

In Price Zones - Urbenville, Murwillumbah, Casino, Richmond Range, Ewingar, Tenterfield Tablelands and Lower Slopes, Glen Innes, Grafton Coastal and Inland, Bom Bom, Dorriggo Central and West, Coffs Harbour, Styx River, Walcha/Nundle the defect allowance table below will apply.

Log or End Diameter	Maximum Pipe Allowance	Maximum Total Defect Allowance	Log or End Diameter	Maximum Pipe Allowance	Maximum Total Defect Allowance
24cms	0	30	74cms	46	62
26cms	2	30	76cms	48	62
28cms	4	30	78cms	48	62
30cms	6	30	80cms	50	62
32cms	8	34	82cms	52	63
34cms	12	39	84cms	54	63
36cms	16	44	86cms	54	63
38cms	18	46	88cms	56	64
40cms	20	49	90cms	58	64
42cms	22	51	92cms	58	64
44cms	24	52	94cms	60	64
46cms	26	53	96cms	62	65
48cms	26	54	98cms	64	65
50cms	28	55	100cms	64	65
52cms	30	56	102cms	66	65
54cms	32	57	104cms	68	65
56cms	32	57	106cms	68	65
58cms	34	58	108cms	70	65
60cms	36	58	110cms	72	66
62cms	38	60	112cms	74	66
64cms	38	60	114cms	74	66
66cms	40	60	116cms	76	66
68cms	42	60	118cms	78	67
70cms	42	60	120cms	80	67
72cms	44	61			

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In Price Zones - Urunga Coastal and Upriver, Kempsey, Wauchope Coastal, Wauchope Foothills and Wauchope Upriver, Wingham, Kendall, Coopernook, Taree, Bulahdelah, Gloucester East and West, Chichester, Morisset and Putty the defect allowance table below will apply.

Log or End Diameter	Maximum Pipe Allowance	Maximum Total Defect Allowance	Log or End Diameter	Maximum Pipe Allowance	Maximum Total Defect Allowance
24cms	Solid	25	74cms	46	62
26cms	2	25	76cms	48	62
28cms	4	27	78cms	48	62
30cms	6	29	80cms	50	62
32cms	8	31	82cms	52	63
34cms	10	33	84cms	54	63
36cms	12	36	86cms	54	63
38cms	14	38	88cms	56	64
40cms	16	40	90cms	58	64
42cms	18	43	92cms	58	64
44cms	20	45	94cms	60	64
46cms	22	47	96cms	62	65
48cms	24	49	98cms	64	65
50cms	26	51	100cms	64	65
52cms	28	53	102cms	66	65
54cms	30	54	104cms	68	65
56cms	32	56	106cms	68	65
58cms	34	58	108cms	70	65
60cms	36	59	110cms	72	66
62cms	38	60	112cms	74	66
64cms	38	60	114cms	74	66
66cms	40	60	116cms	76	66
68cms	42	60	118cms	78	67
70cms	42	60	120cms	80	67
72cms	44	61			

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Product Sawlog Grade 1 (High Quality Small Sawlogs, HQS)	
Species	All species of the Genera Eucalyptus, Corymbia, Lophostemon and Syncarpia.
Length	Minimum of 30dm and then random in all price zones except Bulahdelah where the minimum length is 36dm and then random.
Centre Diameter Under Bark	Minimum of 30cms CDUB in all price zones except Bulahdelah where the minimum small end diameter is 30cms.
Internal Defect	Maximum pipe as set out below.
External Defect	Maximum total defect as set out below
Sweep	<20% of log diameter over any 30dm log length
Kinks	At least the minimum log length both sides of the kink
Spiral Grain	<12.5% slope (1 in 8)

Log or End Diameter	Maximum Pipe Allowance	Maximum Total Defect Allowance
24cms	Solid	25
26cms	Solid	25
28cms	2	26
30cms	6	29
32cms	8	31
34cms	12	35
36cms	14	39
38cms	16	42
40cms	18	44
42cms	20	47
44cms	22	49
46cms	24	51
48cms	26	51
50cms	26	52

Handwritten signature: N. J. Wang MCE

**PROCESS TO DETERMINE A REVISED SPECIFICATION
FOR IMPLEMENTATION
FROM 1 JULY 2005**

1. The Specification to apply from 1 July 2005 will be a standard Specification for all north coast customers.
2. By 1 October 2004 State Forests must convene a working group of State Forests, Type A WSA customers (or their representatives) and other parties (or their representatives) receiving Timber under written agreement from State Forests, for the purpose of developing the revised Specification ("the Working Group").
3. The Company (or its representative) may participate in the Working Group.
4. The Company or its representative on the Working Group must negotiate in good faith to reach agreement on changes to the Specifications.
5. Any revisions determined by the Working Group must:
 - Standardise specifications for HQL and HQS sawlogs for all State Forests north coast customers.
 - In aggregate not vary the total volume of timber currently defined as HQL and HQS.
 - Be reflected in the Price Schedule from 1 July 2005.
 - Define minimum diameter only in terms of small end diameter underbark.
 - Ensure that safety and operational efficiency of harvesting, haulage and timber processing operations are maximised.
6. The Company may not unreasonably refuse its consent to a request by State Forests to amend this Agreement from 1 July 2005 by replacing the Specifications with a revised Specification determined by the Working Group.

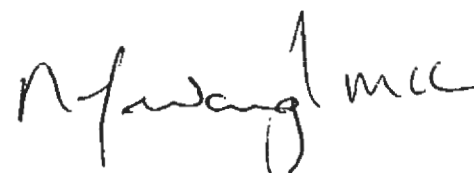
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SCHEDULE 2**The Allocations****Part I****Allocation 1**

- For the Year commencing 1 July 2004 and each Year thereafter until 30 June 2009:
 - ~~4465m³~~ HQL sawlogs; and
 - A volume determined in accordance with the following formula (provided that volume is greater than zero):
 $(X + Y - Z) \times 0.2$
Where:
X is ~~2908.9m³~~;
Y is ~~1951m³~~;
Z is the volume in cubic metres of Timber delivered by State Forests to the Company during the period 1 January 2004 to 30 June 2004 under a written agreement(s) between State Forests, the State of NSW and the Company;
- For the Year commencing 1 July 2009 and each Year thereafter until 30 June 2023: ~~4465m³~~ HQL sawlogs; and
- For the Year commencing 1 July 2023:- ~~2232.5m³~~ HQL sawlogs (half of Allocation 1 for the previous Years).

Allocation 2

- For the Year commencing 1 July 2004 and each Year thereafter until 30 June 2023:- ~~0m³~~ HQL sawlogs; and
- For the Year commencing 1 July 2023:- ~~0m³~~ HQL sawlogs (half of Allocation 1 for the previous Years).



Part II

Indicative Quantities of Timber

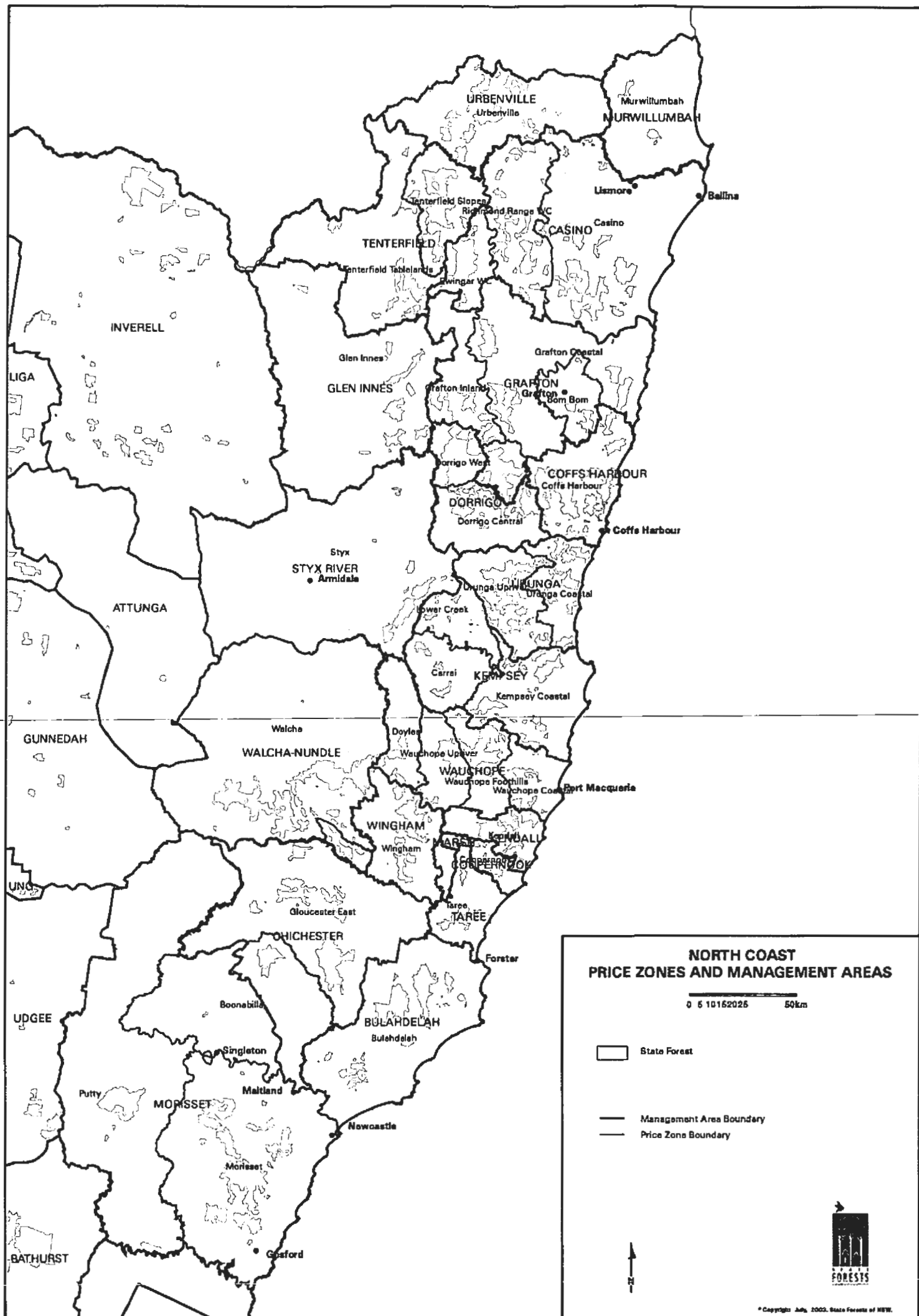
Price Zone	HQL sawlogs	HQS sawlogs
Urbenville		
Tenterfield		
Richmond Range		
Casino		
Ewingar		
Glen Innes		
Bom Bom		
Coffs Harbour	3%	
Dorrigo Central	28%	
Dorrigo West	2%	
Grafton Coastal		
Grafton Inland		
Urunga Coastal	35%	
Urunga Upriver	24%	
Kempsey		
Wauchope Coastal		
Wauchope Foothills		
Wauchope Up-river		
Kendall		
Coopersnook		
Taree		
Wingham		
Doyles / Bulga		
Walcha		
Styx River	10%	
Gloucester East		
Gloucester East		
Boonahilla		
Morisset		
Bulahdelah		

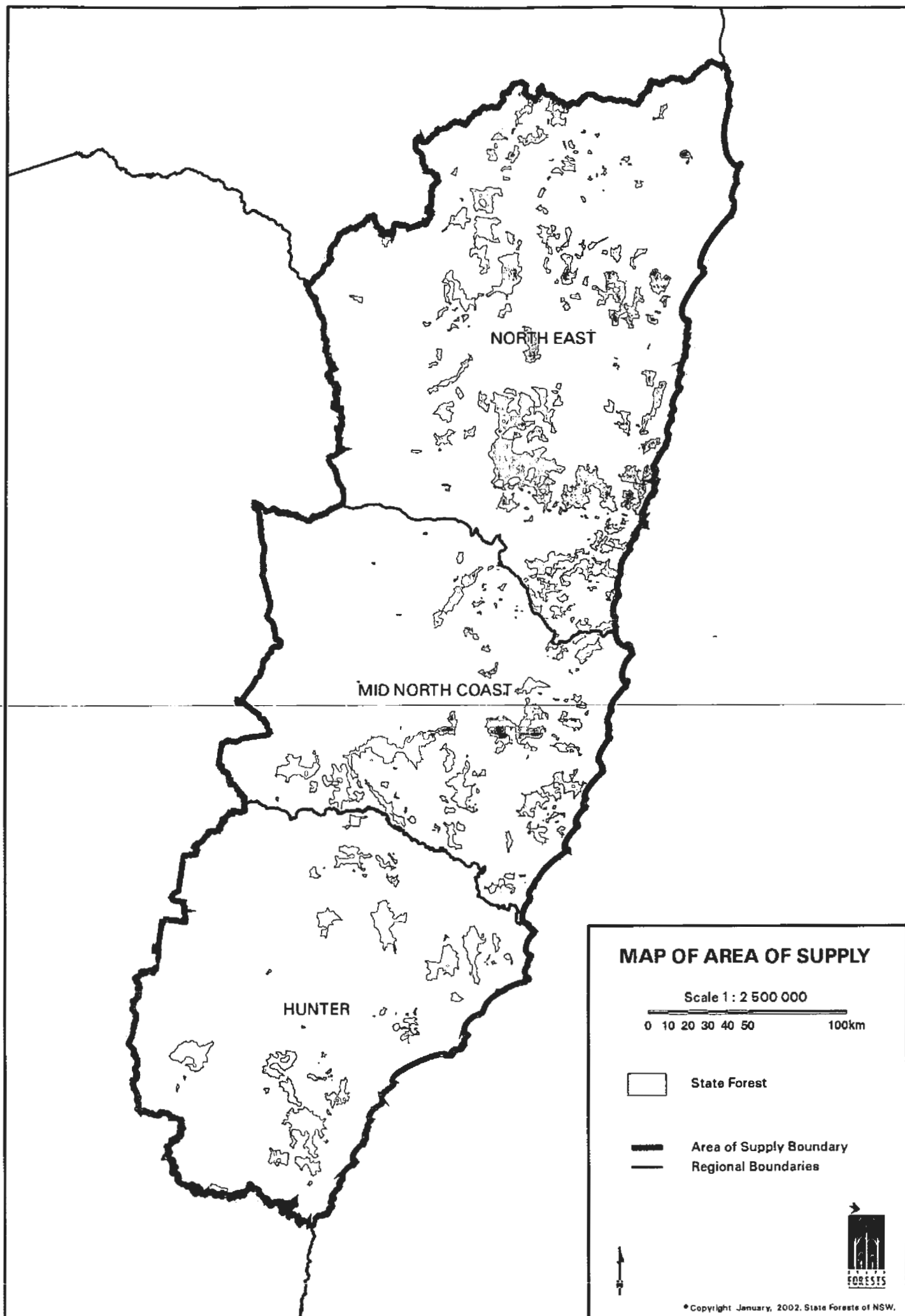
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SCHEDULE 3

**Plan of Area of Supply
Management Areas
And
Price Zones**

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SCHEDULE 4

State Forests' Code of Procedure

SECTION 1 – QUANTITY, MEASUREMENT AND MARKING OF TIMBER

1.1 Quantity

The quantity of Timber will be determined in accordance with the Hardwood Log Measurement Manual 1 January 2002.

State Forests must ensure that Timber is measured by length (actual length in decimetres rounded down to the next whole decimetre) and diameter (centre diameter underbark to the backward centimetre).

1.2 Marking of Log Products

1.2.2 Log Marking

State Forests must ensure that logs are marked with length, diameter, species, compartment number and log graders ID.

1.2.2 Species Code

State Forests must ensure that the species code is marked on logs in accordance with Table 1.

Table 1: Species Code

SPECIES CODE	DELIVERY DOCKET SYMBOL	SPECIES
1	IBK	Ironbark
2	TWD	Tallowwood
3	GBX	Grey Box
4	BG	Blue Gum
5	STS	Silvertop Stringybark
6	SG	Spotted Gum
7	NEB	New England Blackbutt
8	BBT	Blackbutt
9	RM	Red Mahogany
10	MM	Messmate
11	FAS	Fastigata
12	VIM	Viminalis
13	DHS	Diehard Stringybark
14	BBX	Brushbox
15	TRP	Turpentine
16	GG	Grey Gum
17	WM	White Mahogany

A few more

18	WS	White Stringybark
19	FG	Flooded Gum
20	RG	Forest Red Gum
21	RLG	Round Leaf Gum (<i>Euc. deanei</i>)
22	NOT TO BE USED	
23	BLW	Bloodwood
24	BLS	Blue Leaf Stringybark
25	PEP	Peppermint
26	QBX	Whitetopped box
27	RUM	Steel Box
28	SBA	Smoothbark Apple
29	SCG	Scribbly Gum
30	WG	White Gum (<i>Euc. dunnii</i>)
31	YBX	Yellow Box
32	GMM	Gympie Messmate
33	SM	Swamp Mahogany

1.2.3 Log Product Code

State Forests must ensure that all logs are marked on one end using paint or crayon with the appropriate log product code in accordance with Table 2.

Table 2 : Log Product Code

PRODUCT	CODE
HQL	O
HQS	T

In special cases, quota and small logs of individual species may be downgraded in some Price Zones where the net wood quality of the significant majority of logs is below that normally expected of that species.

Downgrading can only take place with State Forests prior approval and is Price Zone specific.

Downgraded logs are still graded as the same log product but to distinguish them, are marked with a "D". Downgraded logs should be marked with a "D" before the relevant product code, ie "DO" for downgraded quota and "DT" for downgraded small logs.

SECTION 2: DELIVERY DOCKETS

2.1 Issue of Delivery Dockets

Delivery Dockets will be supplied by State Forests at State Forests' cost. Dockets will be printed in quadruplicate and will be sequentially numbered.

2.2 Completion of Delivery Dockets

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State Forests must ensure that, prior to departure from the Loading Site, the following details will be completed on the Delivery Docket:

- i) Customer/Location
- ii) Date
- iii) Time
- iv) Region
- v) State Forest
- vi) Harvesting Plan No
- vii) Age Class (where relevant)
- viii) Compartment
- ix) Stack (where relevant)
- x) Operation Type
- xi) Product
- xii) Grade
- xiii) Length (where relevant)
- xiv) Diameter (where relevant)
- xv) Count
- xvi) Harvest , Load and Haulage Contractor
- xvii) Truck & Trailer Registration Number
- xviii) Truck Type
- xix) Driver, Grader,
- xx) Gross, Tare and Net Weight (where weight sales are by truck scales) Tare weight will be predetermined at the commencement of each quarter on the basis of a certified weighbridge).

Where logs are to be accounted for by volume, the following additional details must be recorded for each log on the load:

- Length
- Diameter (refer to Table 1)
- Species Code (refer to Table 3)
- Product Code (refer to Table 4)

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2.3 Receipt of Delivery

Upon receipt of a load of logs at the Delivery Site the Delivery Docket must be signed, dated and marked with the time of delivery by the Company's representative. This signature will verify the load was received and that the Gross Weight (where relevant) has been verified.

2.4 Company Copy

The Duplicate copy of Delivery Dockets will be retained by the Company.

2.5 Docket Errors

In the case of an error being made on the Delivery Docket mistakes must be crossed out and corrected with all changes initialled by the truck driver.

In the event of a Delivery Docket error being identified, (other than errors relating to log grade), the necessary amendment must be made on the Delivery Docket and such changes initialled by the Company's representative and the truck driver.

Errors relating to log grade are to be treated as a disputed log as these changes can only be made by a State Forests Officer.

2.6 Delivery outside of normal delivery hours

On the occasions where a mill representative is not available when the load is delivered and where specific arrangements have been made for delivery outside of normal delivery hours, the Contractor may unload the timber and leave the Duplicate copy of the Delivery Docket at a predetermined location.

These loads must be placed separately from other loads and clearly marked by the Haulage Contractor with the docket number, so as to enable its identification by a Company representative.

All details of the Delivery Docket will be completed by the Haulage Contractor except for the signature of the Company representative.

As soon as is practicable and no later than the 3.00 pm on the first working day following delivery a Company representative will sign the Mill copy of the Delivery Docket and fax it to the relevant Haulage Contractor. The Haulage Contractor will then be responsible for attaching the signed faxed copy, to the original Delivery Docket and forwarding it to State Forests.

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HARDWOOD LOG MEASUREMENT MANUAL

NORTH EAST, MID NORTH COAST AND HUNTER REGIONS

1 JANUARY 2002

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FOREWORD

The Hardwood Log Measurement Manual (1996) was originally prepared in 1995 and based primarily on earlier versions of "local" manuals.

The Manual was adopted by the coastal hardwood Regions of State Forests of NSW as an accepted uniform basis for hardwood log measurement and reviewed by the FPA and Boral Pty Ltd. The only variation between Regions is the Compulsory Utilisation Schedules - which are regionally based.

The Manual was the basis for courses presented on Log Measurement to State Forests' and industry personnel in the above Regions.

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INTRODUCTION AND PURPOSE

Log measurement has always been the basis for determining volume and therefore value of logs sold to industry (although in recent years sale by weight has occurred).

In most cases only gross volume is necessary to determine value - often based on industry's log measurements.

This module's purpose is to provide:

- a reference document;
- a mechanism and aid for training;
- a means to ensure royalty returns and sustained yields are maintained; and
- a means to ensure some uniformity in approach to log measurement occurs.

Whilst gross measurements provided by industry are primarily used to determine volumes, there is a need to accurately assess the defect of logs. This need occurs both as a regular check to verify log grading assessments or to resolve log grading disputes. Hence a major component of the module will be on definition and determination of log defect - the basis for log grading.

Defect measurement practices historically are very localised. Whilst input into these uniform guidelines has been made by a number of State Forests' staff and industry, there will be a need for change and compromise by some to adopt what could be new practices in some areas.

Although providing references for defect assessment, the need for observation of milling on a regular basis cannot be over emphasised. Log quality varies from area to area and, often, log defect variations do not become obvious until logs are milled.

HISTORY OF LOG MEASUREMENT

• The Gross Hoppus System

This British system of log measurement was in place for many years prior to 1973. As it is no longer used, only a brief appreciation of the system is necessary.

The system determined volume on a Hoppus basis. Simply this system defined log volumes as units of wood 12" x 12" x 1". These units are defined as super feet (sft). Consequently volume was not true or actual log volume. However pipe defect (a square or rectangle) was in true measurement.

All gross log measurements were undertaken by industry, with volumes and royalty values being determined by the then Forestry Commission. This was in the pre computer era and it was a tedious process to individually calculate gross, defect and net volumes for each log.

By a stumpage appraisal system, an allowance was made for the defect contained in a log by deducting the "value" of all defect volume at the mill door.

The volume of defect was determined by a complex system of allowances for the many forms of defect found in native hardwood logs. Determination of this defect by forestry employees (usually measuring/marketing foremen) required considerable time, experience and expertise. As this measurement had considerable impact on log value, disputes with industry were common. For example, if defect reached a critical and variable pre-determined level, then the log became optional or ex-quota. As well as such a log having a low value, it was not obligatory for a sawmiller to accept it.

• Metric and True Measurement

In 1973, following metrication, log measurement, volume determination and thus value determination, became based on true or actual measurement. Defect measurement procedures of individual logs did not vary.

• Flat Rate Log Sales

From 1988 all hardwood logs sales began to be based on flat rates, ie variable rates in \$'s per m³ based on gross volume of the log.

These rates were derived from detailed analysis of past sales adjusted to reflect the anticipated log quality of areas remaining to be logged. Industry agreement was generally obtained. Rates were generally determined for at least a management area or a Region.

This system eliminated the need for defect measurement of every log. Additionally with the introduction of *Delivery Dockets*, industry determined gross log measurements and species - with random checking by State Forests' personnel. *Codes of Procedure* were agreed to covering the essential requirements of use of delivery dockets.

As the royalty return from the flat rate system was meant to equate with previous log values it was necessary to have a system to determine which logs were *Compulsory* (quota quality or *graded*) and which were *Non-compulsory* (ex-quota logs/salvage or *non-graded*) logs - based on defect. In some management areas, some small (mid diameter <40cm) quota quality or graded logs are not part of a sawmiller's quota allocation.

To ensure this equating occurred, a *Utilisation Line* was compiled - on a regional basis mainly, which determined a maximum defect for compulsory logs. Logs above this specification were compulsory logs, those below non-compulsory. This line specified the maximum pipe defect allowable for a log of any diameter. Incorporated in this calculation was an allowance for the historical level of length defect. Both these factors were determined from detailed analysis of the defect of logs cut over a period of time.

Whilst this is a maximum defect specification (which also includes minimum length and diameter specification), there is no need to determine defect for logs with defect levels well below the maximum level (except as a basis for "keeping your eye in").

However, for logs approaching the minimum specification a need exists to determine whether a log is compulsory or not. Alternatively, this calculation of defect may be required to assess whether log servicing is required. To achieve this, defect must be measured and volume (as a percentage of total gross log volume) calculated to compare with the maximum defect permissible under the *Utilisation Line* specification. This calculation has been simplified by the use of a hand held programmed computer.

A sound knowledge of defect measurement principles is necessary to undertake this comparison.

• Log Value Pricing System

Whilst the Flat Rate system addressed a number of serious deficiencies of the preceding sales system, both State Forests and industry recognised that it had too few categories by which to price a wide range of hardwood sawlogs. Some of the inherent anomalies of the flat rate system included inequalities between customers, inadequate recognition of variation in log quality between species and lack of response to market dynamics.

As well as the joint initiative of State Forests and industry to introduce an improved log pricing system, the Cabinet decision of September 1996 signalled the Government's intention to change the nature of the NSW native forest industry towards a more efficient, technologically advanced and economically sustainable industry driven by a requirement for all levels within the industry to maximise product value. The Government, as part of its Forest Reform Policy, gave an undertaking to introduce a new hardwood log pricing system that more realistically reflects the inherent difference between the various species, sizes and qualities of hardwood logs sold from coastal and tablelands forests in NSW.

The Log Value Pricing System was designed to provide greater differentiation of log values for graded logs to reflect the end-products recoverable from the variety of species, log sizes and log qualities available within a particular price zone. For each species and size class combination within a price zone, the stumpage price was calculated based on the inherent defect and the potential end-product mix that could be achieved.

- **Importance of Correct Grading of Logs**

This is demonstrated as follows:

(a) ROYALTY VALUE

Compulsory logs vary in value and can range from as low as \$20 per m³ to as high as \$150 per m³ for logs within specification. The average price for compulsory logs in 1996/97 was \$42. Non-compulsory logs currently average at \$12 per m³. For an average 5m³ log, if incorrectly graded as non-compulsory, State Forests stands to "lose" \$150 on that log alone. Obviously if incorrectly applied to only a small percentage of logs sold in a Region, the "loss" is magnified to a greater extent - even more so for the State. If say, 1% of the State's (less Western) hardwood quota cut of 400,000m³ was incorrectly graded as non-compulsory, then State Forests would "lose" \$120,000 royalty per year (based on \$42 per m³ average for compulsory logs).

Long serving State Forests' employees will recall that under the Gross Hoppus system log value increased *gradually* from the minimum value (optional log) to a maximum value (defect free log). Then it was not so critical if a higher defect log was accidentally classified as optional - State Forests' royalty was only marginally affected. However, under the Flat Rate and Log Value Pricing systems, incorrect grading can have a major impact on royalty received.

(b) SUSTAINED YIELD

Sustained yield is normally based on quota (compulsory) log availability - from assessment results. Logs graded as non-compulsory do not contribute to allocated quota. Hence, if a log is incorrectly graded as non-compulsory, an additional log of similar volume must be felled to meet annual quota commitments. Every time this happens the sustained yield of the forest is eroded by overcutting, resulting in some reduction in sustained yield allocation at the next yield review.

Procedures and respective roles of industry/State Forests log graders in relation to identification of non-compulsory logs are detailed in the relevant sections of this course and the Codes of Procedure.

LOG MEASUREMENT

1. Gross Dimensions

1.1 LOG LENGTH

Hardwood log length is measured in decimetres (ie tenths of a metre or 10 cm) and rounded *down* to the *next* decimetre below the actual measurement. If the measurement falls on the full decimetre unit the actual measurement is recorded without any adjustment.

(Note: **Length** and **diameter** measurements are rounded **down**, **defect** measurements are rounded **up**).

For example:

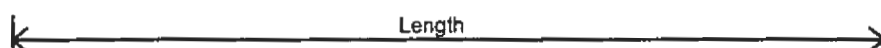
Actual Measurement	Recorded Measurement	Shown on Log
124.8 dm (12.48 m or 1248 cm)	124 dm	124
78.4 dm (7.84 m or 784 cm)	78 dm	78
93.9 dm (9.39 m or 939 cm)	93 dm	93
149.0 dm (14.90 m or 1490 cm)	149 dm	149

The length measured should be the **shortest length** of the log.

The following examples demonstrate the principles:



- Log with ends square - measure as

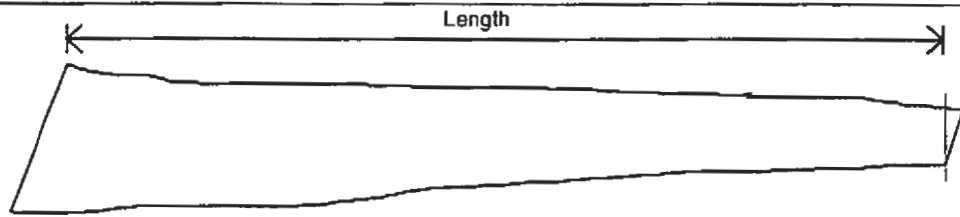


- Log with sweep - inside length

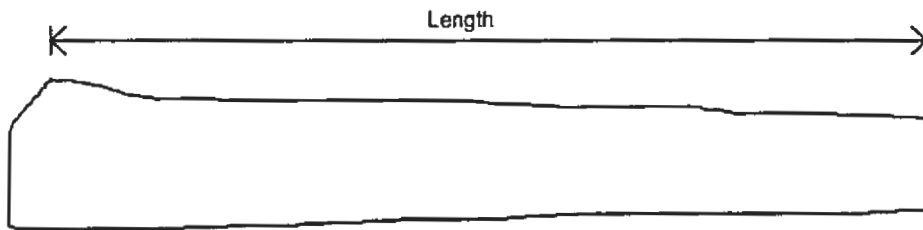


- Log with head not square - measure shortest

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- Log with butt and head not square - measure shortest length (not common)



- Log with scarf not trimmed - measure from shortest part of scarf.

1.2 LOG DIAMETER

Log diameter is the *centre* diameter (mid length) measured *underbark* in centimetres and is rounded *down* to the *next* centimetre below the actual measurement. If the measurement falls on the full centimetre unit the actual measurement is recorded without any adjustment.

For example:

Actual Measurement	Recorded Measurement	Shown on Log
97.8 cm	97 cm	97
44.2 cm	44 cm	44
67.0 cm	67 cm	67

To make the measurement the bark should be fully removed from the entire log, or a ring of bark fully removed at the midpoint of the log and a diameter tape passed around the log to give the diameter reading.

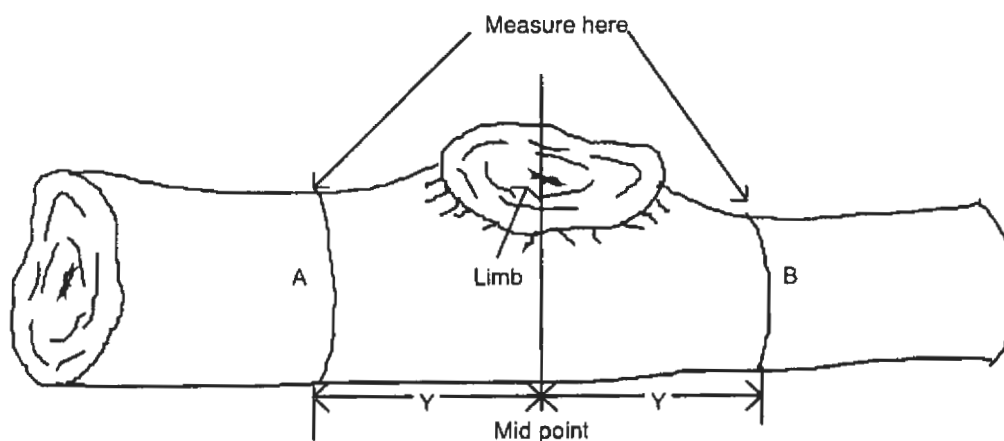
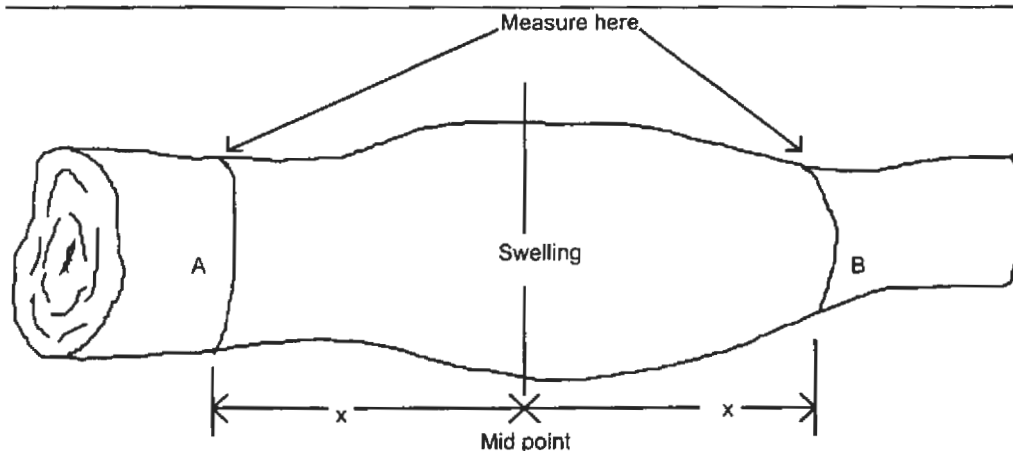
Other Options

1. If the bark cannot be removed, a chip of bark should be removed from the midpoint of the log and the bark thickness measured at that point. This measurement of thickness should then be doubled and subtracted from the overbark diameter measurement. **Note - this practice is highly undesirable**

For example:

Overbark Measurement	Bark Thickness	2 x Bark Thickness	Calculated Underbark Measurement	Recorded Measurement
84.8 cm	1.5	3.0	81.8	81 cm
64.8 cm	1.7	3.4	61.4	61 cm
78.4 cm	1.2	2.4	76.0	76 cm

2. Where it is not possible to measure the centre diameter of the log, a good approximation is the average of the head and butt diameters measured underbark (take care that butt flare doesn't influence butt diameter **Note - this practice is highly undesirable.**
3. Callipers can be used by removing a small section of bark on opposite sides of the log. Several measurements (averaged) are required. Generally only applicable to uniform small regrowth logs.
4. If the log has a swelling or abnormal diameter at the midpoint of the log, diameter measurements should be taken *equidistant* from the midpoint of the log - both above and below the abnormal diameter where the log diameter returns to normal and these diameters averaged to give the true diameter. Generally, the principle adopted should be to adopt a representative point(s) to measure.



$$\text{Log Diameter} = \frac{\text{Diameter at A} + \text{Diameter at B}}{2}$$

For example:

Measurement above Bump	Measurement below Bump	Average of Measures	Recorded Measurement
76.4 cm	82.8 cm	79.6 cm	79 cm
36.6 cm	42.8 cm	39.7 cm	39 cm

1.2.1 **Ropy logs** appear to have a ropy outside layer. If this is severe with deep hollows between the "ropes", the measured diameter of the log should be *reduced by at least twice the depth of hollows*, and rounded down as necessary. The recorded and branded diameter should be the reduced measurement shown as a "cutback" diameter - for RTA purposes.

1.2.2 **Sun-cracked logs** salvaged can be compensated for by reducing log diameter by twice the depth of suncracks (or if only half of the log affected then reduce by the depth of sun-cracks). Again, show as a "cutback" diameter. Alternatively, allow as a defect by application of a length deduction.

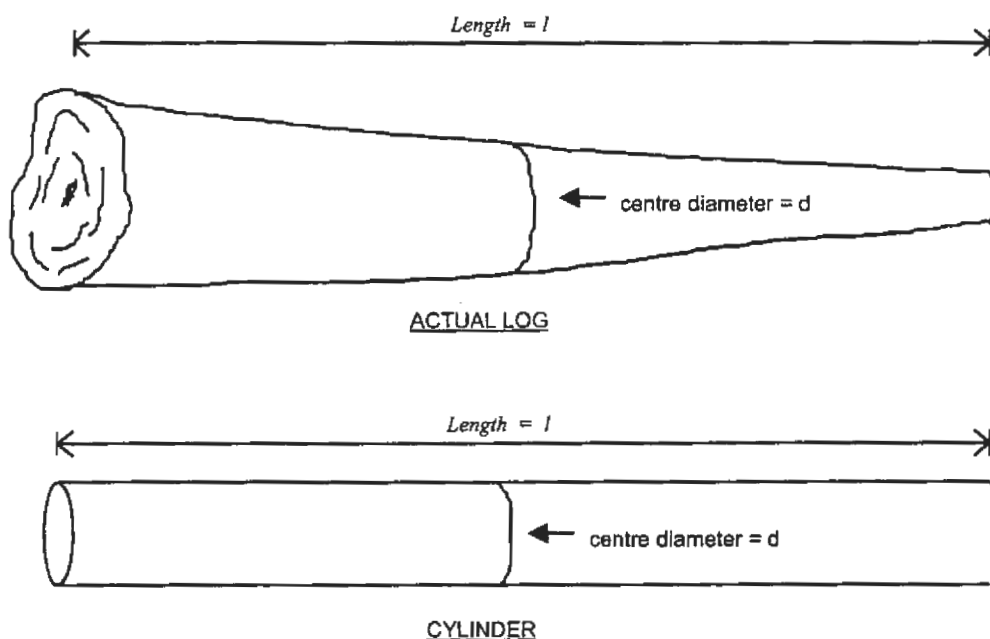
1.2.3 Half (split) logs

- Diameter, either:
 - Measure diameter (at centre point) across split surface with a *dm* length tape (convert to cm diameter) for half logs, or
 - measure around the circumference with a diameter tape (for logs not evenly round) and double the measurement.
- Length - adopt half of the measured length (as a cutback - for RTA purposes.)

Note: For logs greater than one half eg. $\frac{3}{4}$, apply the same methodology, ie. measure the diameter as above and record the length as a cutback based on the proportion of the log that is missing eg. $100/75 \times 40$.

1.3 LOG VOLUME

Hardwood log volume is measured in cubic metres as a true or gross volume based on cylinder of equivalent length and mid section diameter. Whilst this does not give the exact volume for every log shape it gives a fair approximation.



Note: To calculate the log volume the recorded length is rounded down to an even decimetre. (Tables are in even decimetres.) Recorded diameter is used.

For example:

Length: 125 dm is rounded down to 124 dm
124 dm remains as 124 dm.
Diameter: 57 cm remains at 57
50 cm remains at 50.

Volume can be obtained by either using the "Log Volume Tables in Metric True Volume for NSW Sawmillers" or by using the formula for volume of a cylinder:

$$\text{Volume} = \pi r^2 \times l$$

where π is π ($\frac{22}{7}$) or (3.1416), r is half of the mid length diameter underbark and l is

the length of the log. (Use of Tables or this formula requires r and l to be in *metric units*. The tables explain how to calculate volumes for logs of larger diameter and length, eg larger than 159 cm diameter and longer than 200 dm.)

1.4 AGENTS FOR MEASUREMENT

Contract employees or accredited log graders generally carry out gross dimension measurements and stamp these on logs, and Supervisors undertake a check as directed of logs selected at random.

1.5 COMMON MEASUREMENT ERRORS (GROSS LOG MEASUREMENTS)

- Using tapes with incorrect units, eg inches - not cm (diameter).
- Using excavators to lift logs during measurement and measuring outside forks (not centre of log).
- Not measuring shortest length from toe or scarf.
- Measuring and recording to the *nearest* digit, or to *even* digits - rather than to the *next* digit *down*.
- The place at which centre diameter is measured is guessed rather than measured accurately.
- Residual bark left on the centre bark ring, resulting in an overmeasure.
- Using tapes with ends missing resulting in an overmeasure.
- Diameter tapes not calibrated right to the end, which the user reads as if calibrated to the end (results in an undermeasure).
- Measuring with a knot in the tape.
- Worn callipers, resulting in an undermeasure and measuring only one plane.
- Cut tape, spliced - resulting in an overmeasure.
- Not ensuring tape is at right angles to length of log ie oblique angle around log.
- "Home-made" steel tapes incorrectly calibrated.

2. Defect Assessment

2.1 GENERAL

The assessment of defect is a visual skill that combines written principles common to all log graders with each log graders' knowledge of local timber species.

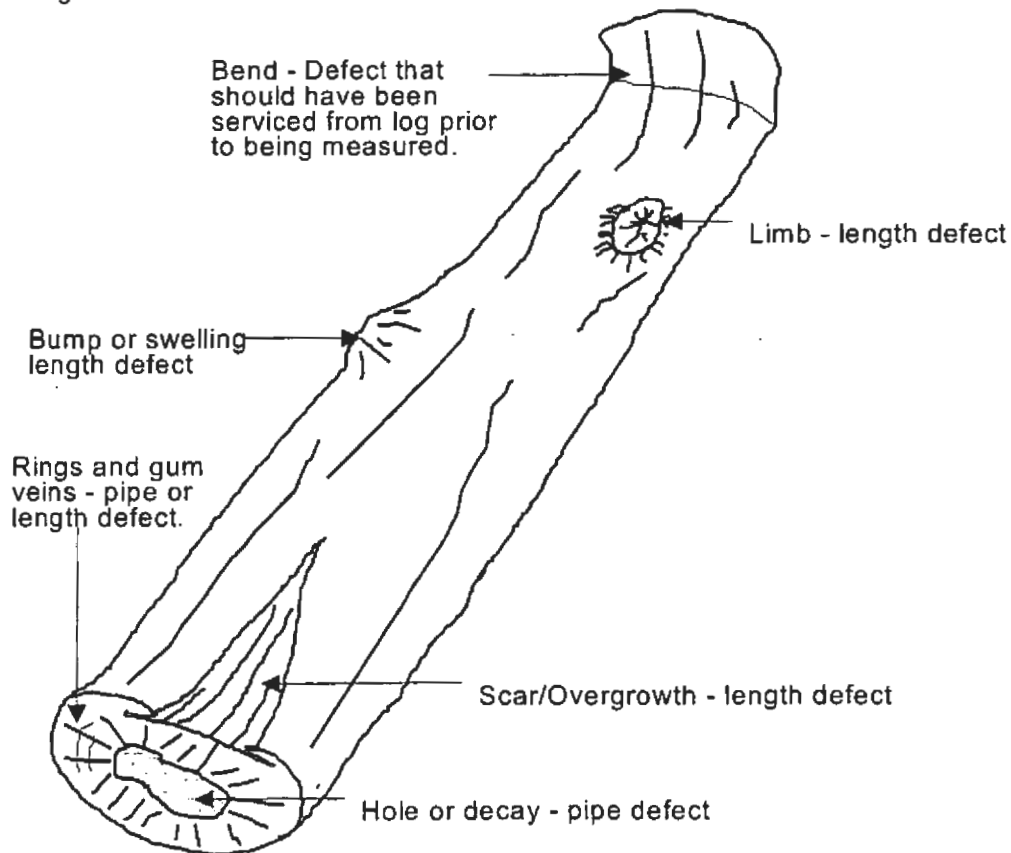
Following are some of the principles and guidelines for log graders, but it is stressed that due to variation within and between species, log graders marry these guidelines with the knowledge they acquire from milling observations at which they compare visual allowances with actual defect and recovery.

Each type of defect is addressed individually even though in practice they commonly occur in combination. Some additional allowance may need to be considered to those set out here where combinations of defect occur.

Hardwood logs may have various forms of internal and external effects as well as having shape defects. Defect is regarded as the part of the log that cannot be processed into the normal run of products complying with F11 grade of the Australian Standard 2082-1979 (excluding woodchips). For all quota species below Strength Group 4, the timber must meet Structural Grade 2 or better.

Defect includes pipe defects, length defects (including external defect and internal defect distinct from pipe), and serviceable (non allowable) defects.

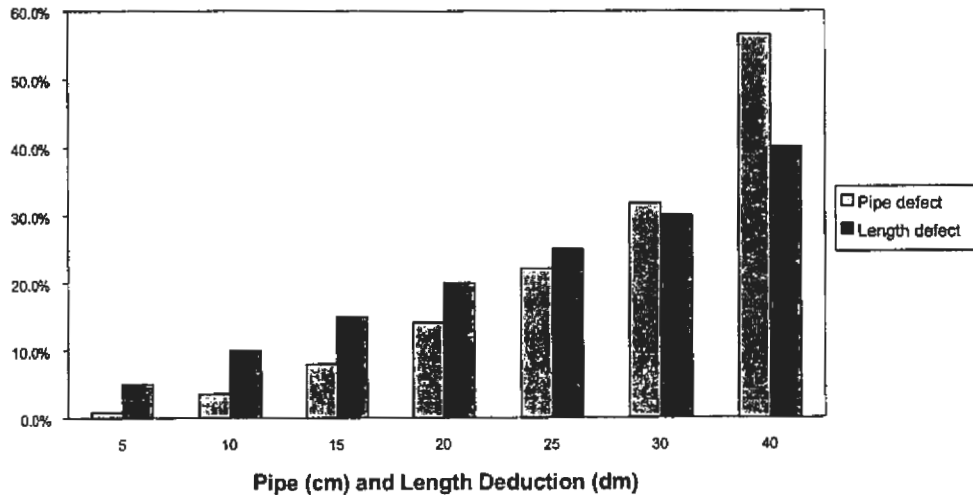
eg:



Effect of Defect Allowances on Gross Volume

The following graph demonstrates the relative effects of pipe and length deductions on net log volume. A 10 m log with a diameter of 60 cm was used in this example (gross log volume = 2.827 m³). Remembering that 1 dm = 10 cm, you will note that the influence of pipe defect on net log volume is considerably more than length defect, ie. a 5 cm increase in pipe has a greater impact than a 5 dm increase in length deductions.

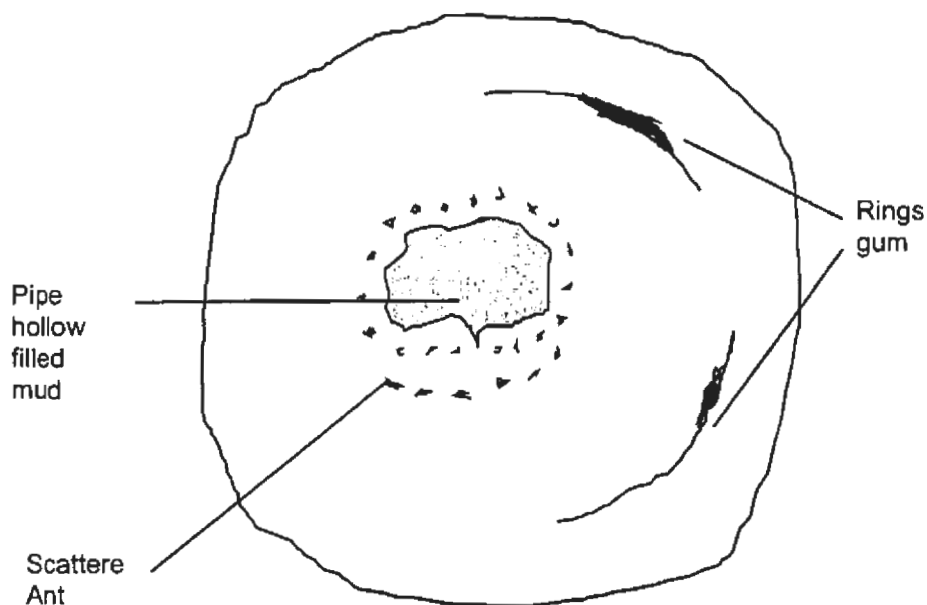
Comparison of the Effect of Pipe and Length Defect on Net Volume



Volume measurements are rounded *down*, defect measurements are rounded *up*.

2.2 PIPE DEFECT

Internal defect is usually called pipe defect because, at its extreme, a hole is present. It is still called a pipe even if this usually central area of the log is filled with termite's nests, mud, decayed wood or rings.



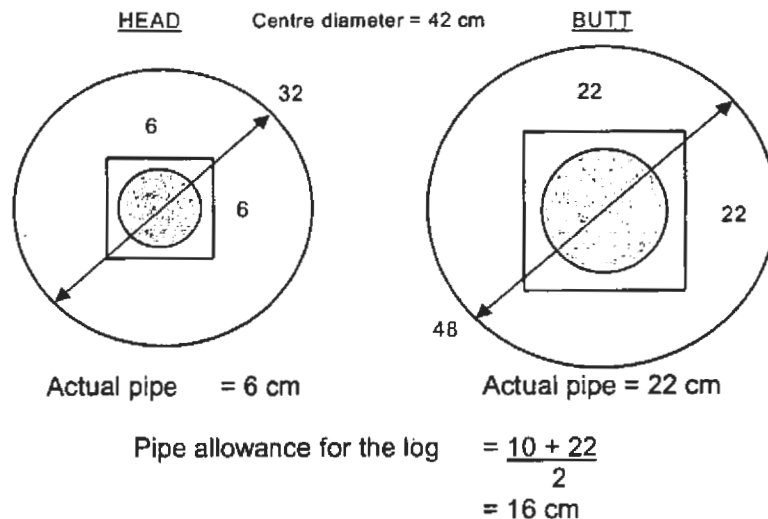
Even though there is no visible defect at the end sections of some logs, **all logs 40 cm centre diameter and over qualify for a minimum pipe allowance**. This minimum allowance is a 10cm square pipe that covers pith, occluded limbs and other minor heart defect. **The minimum pipe allowance is only for the purpose of calculating a log's overall defect** (ie. the combination of pipe and length defects).

The minimum pipe allowance does not apply to logs with a centre diameter of less than 40cms. The actual measured pipe is to be used for these logs.

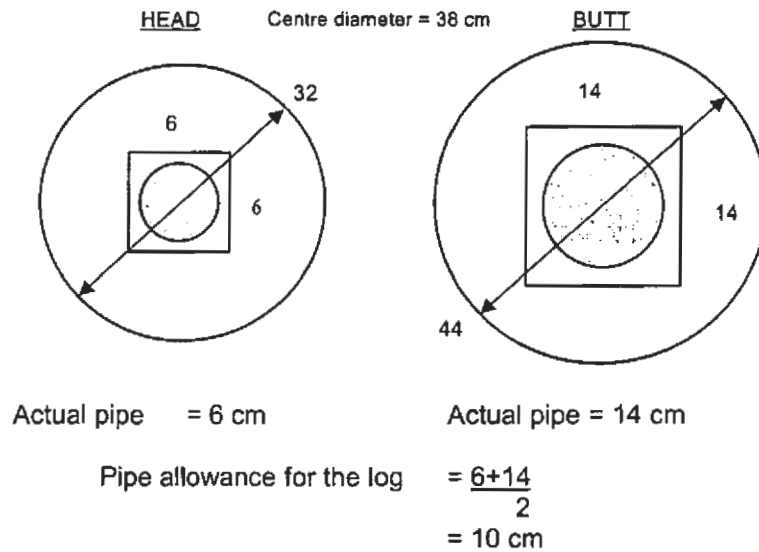
The 10cm minimum pipe allowance is **not** to be applied to the individual ends of logs when determining if that end meets the compulsory log specifications. To determine if the end of a log meets the compulsory log specifications, the **actual** pipe at that end is compared against maximum pipe allowable from the relevant Compulsory Utilisation Schedule.

To calculate the overall log defect for **logs 40 cm centre diameter and over**, the 10 cm minimum pipe allowance is applied to the ends of logs where the actual pipe is less than 10 cm to get the average pipe allowance for the log. For example if the actual pipe on the end of a log with a centre diameter 40 cm or over is less than 10 cm, the pipe for that end used to calculate the log's pipe allowance is taken up to 10 cm.

For logs with centre diameters 40cms and greater



For logs with a centre diameter less than 40cms.



- This minimum allowance may be inadequate for some species, eg. Brushbox - where collapse effect near the heart may necessitate an increase in pipe allowance. Other species where this minimum allowance may be inadequate include Turpentine and Bloodwood.

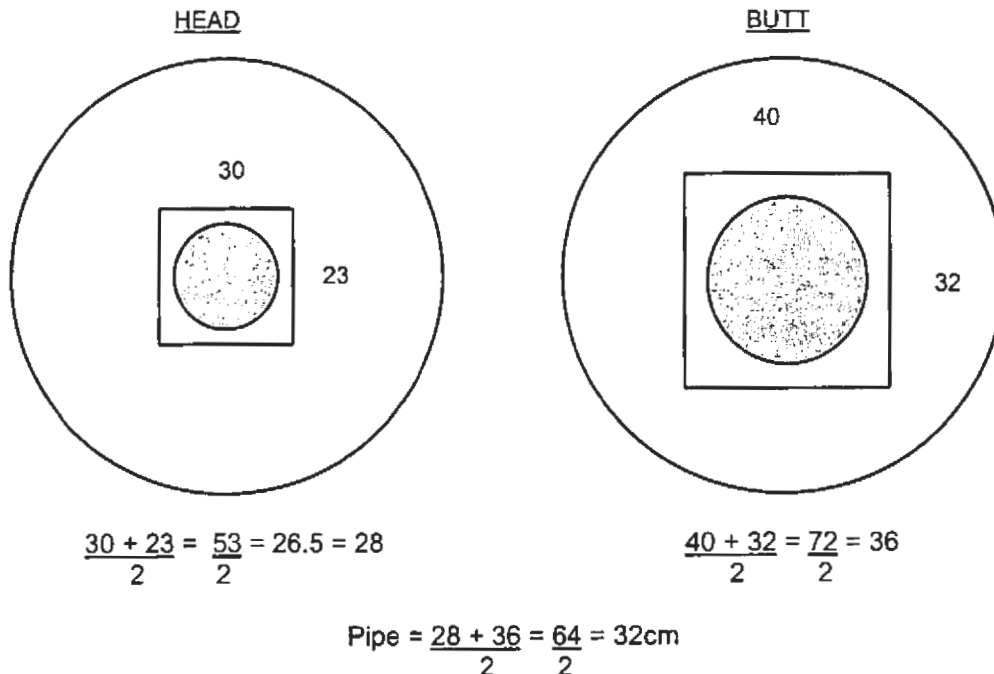
Measurement Rules

To measure pipe, a rectangle that encloses the defect is marked on the end of the log. *It is often of assistance if this is marked with chalk.*

Step 1 • Measure each side of rectangle - to the *next* cm up.

Step 2 • Average (halve) these measurements - to the *next even* cm up. This is the pipe allowance for that end of the log. **Note:** Allowances for other "pipe" defects are to be added to the basic pipe allowance at each end of the log prior to rounding up the total pipe allowance to the next even centimetre.

Step 3 • Average (halve) both the head and butt pipe allowances - to the *next even* cm. This is the recorded pipe allowance for the log.

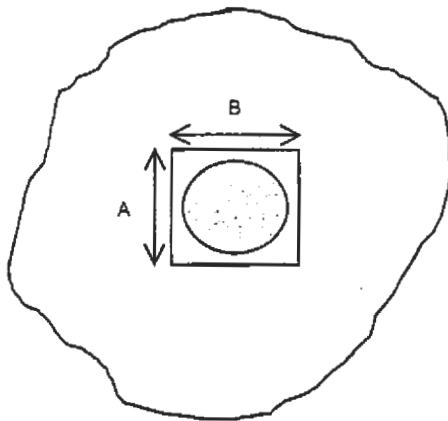


Pipe defect can be one or more of the following:

- 2.2.1 Open Pipe.
- 2.2.2 Discontinuous or Irregularly Shaped Pipes (Rot, Doze, Punk or Cateye).
- 2.2.3 Loose Gum Veins, Gum Pockets and Rings.
- 2.2.4 Termites and Grubs.
- 2.2.5 Hearts out of Centre.
- 2.2.6 Brown Stain.
- 2.2.7 Black Borer.
- 2.2.8 Blackheart.
- 2.2.9 Straight Shakes (Star).
- 2.2.10 Shakes in Spiral Grain.
- 2.2.11 Overgrowth and Doze Pockets.
- 2.2.12 Small Log Pipe Allowances.

N. J. W. M. C.

2.2.1 Open Pipe



Defect is a hole with a clean edge and no additional defect outside of the limits of the hole. On the diagram, the measured pipe is shown. The recorded pipe for that end of the log is

$$\frac{A + B}{2}$$

If side A is 31 cm long and side B is 24 cm, the pipe is 28 cm.

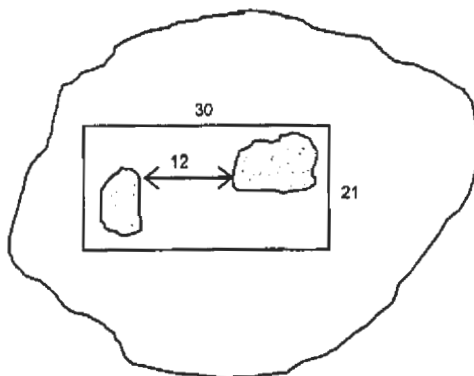
$$\text{eg } \frac{31 + 24}{2} = \frac{55}{2} = 27.5 = 28$$

Note:

- (i) Measurement of open pipe must include some solid wood outside the pipe (as a guide at least 2 cm) to provide for incipient decay, wandering heart and to hold the boxed heart together. This allowance may include some apparently non-defective wood.
- (ii) As a general rule, unless otherwise specified, there must be at least 10cm of useable wood between the pipe and defects or the edge of the log. The 10cm of useable wood must be measured from the outside of the round pipe, which includes the allowance covered in (i).
- (iii) Wandering heart - mainly due to kinks and bends, will invariably result in the need for increased pipe defect beyond that visible at the ends of the logs. This may be further exacerbated in some species and in smaller diameter logs that carry pipe defect.

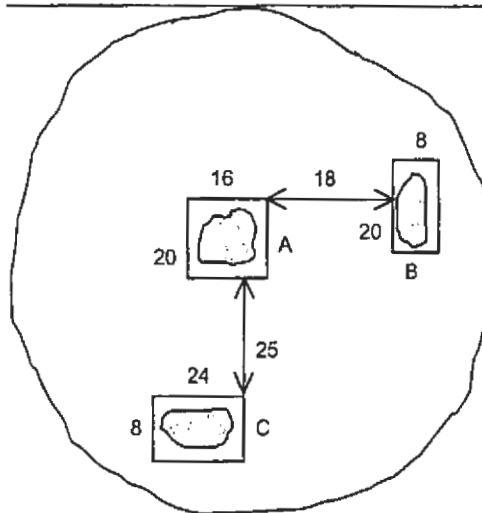
2.2.2 Discontinuous and Irregular Shaped Pipes (Rot, Doze, Punk, Cateye or Brittle Heart)

Unless 150 mm (15 cm) of useable wood is between separated defects, discontinuous and irregular shaped pipes should be boxed out as a single pipe defect.



- (1) If there is an area of defective material to one side of the central defect area of minimum pipe area, so that no useable wood lies between, a rectangular box should be sufficient to enclose all unusable wood and defect.

$$\text{Pipe} = \frac{30 + 21}{2} = \frac{51}{2} = 25.5 = 26$$



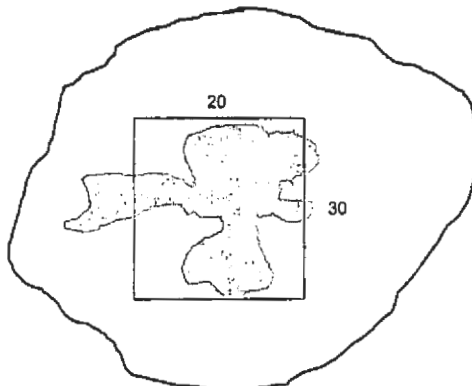
- (2) If there are defective areas separate from but so far located from the area of central pipe that useable wood lies between (minimum 150 mm), these should be boxed out separately.

$$\begin{aligned}
 \text{Pipe} &= \sqrt{(\text{area A} + \text{B} + \text{C})} \\
 &= \sqrt{(16 \times 20 + 8 \times 20 + 8 \times 24)} \\
 &= \sqrt{(320 + 160 + 192)} \\
 &= \sqrt{672} \\
 &= 25.9 \\
 &= 26
 \end{aligned}$$

(Due to limitations in relation to useable wood requirements between defects, this situation would only apply to large diameter logs).

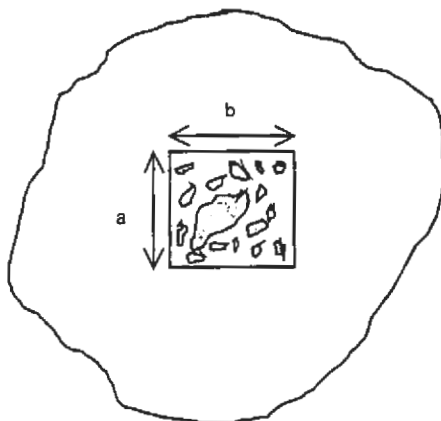
Note:

- (a) This can be calculated with a calculator, eg enter 672, press $\sqrt{\quad}$, answer = 25.9 = 26, or alternatively, refer to Appendices 1 and 2 (attached).
- (b) In (1) and (2) above a length allowance may be more appropriate - particularly when it is obvious that defect is likely to occur only in a section of the log, or at either end.



- (3) Where a central pipe defect radiates out irregularly, it is not appropriate to provide a pipe allowance that encompasses the full defect. A compromise is required to balance pipe and sound wood.

$$\text{Pipe} = \frac{30 + 20}{2} = 25 \rightarrow 26$$



- (4) Usually the wood around these obvious decay patches is discoloured when freshly cut.

2.2.3 Loose Gum Veins, Gum Pockets and Rings

These defects cover:

- Gum Veins
- Open Rings
- Wet Rings (mainly Spotted Gum)
- Gum Pockets

(1) Gum veins and Rings

- (a) *Tight gum veins* – are veins that have sufficient connecting wood across the vein so that they do not open. Generally these have little effect on recovery and should be ignored, eg seen in coastal Blackbutt. No allowance is made for tight gum veins. Caution should be exercised with gum veins wider than 2mm as these are prone to open up, even where connecting wood is evident.

- (b) *Loose gum veins and open rings* - Based on principle that loose gum veins/open rings may cause timber to shell off and therefore an allowance should recognise non-useable widths of timber between veins.

A basic allowance of 1cm is added to the pipe for every 25cm or part thereof of loose gum veins/open rings. This basic ring allowance is doubled where there is only 11-15cm of useable wood between rings, pipe or the edge of the log.

- (c) *Wet Rings*- are generally species specific, have no connecting wood, often produce a milky sap, are unpredictable throughout the log and commonly move from side to side. Common in Spotted Gum, White Mahogany and Woollybutt. The basic ring allowance is doubled to recognise rings that can be missed in freshly cut logs and the discontinuous nature of wet rings.

Warning: Care should be exercised when assessing whether veins and rings in some species are loose or tight, eg. New England species, White Mahogany. It may be possible to put these logs aside for a couple of days to see if they will open up. Clear distinction and recognition of the difference between tight and open rings is essential.

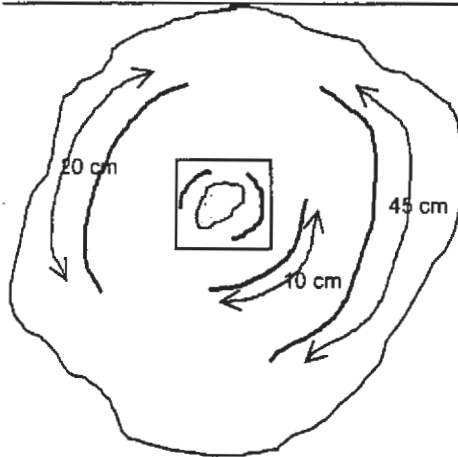
- (2) *Gum pockets* – are formed where the tree grows around a pocket of kino. When associated with rings, remember allowance should be made only once for each defect.

Loose gum veins and gum pockets less than 4 cm from the outside of the log should be ignored as this tends to be in the part of the log that is not converted into sawn wood. In this case the gum vein or gum pocket becomes the outside of the log in the section it occurs when determining pipe allowance.

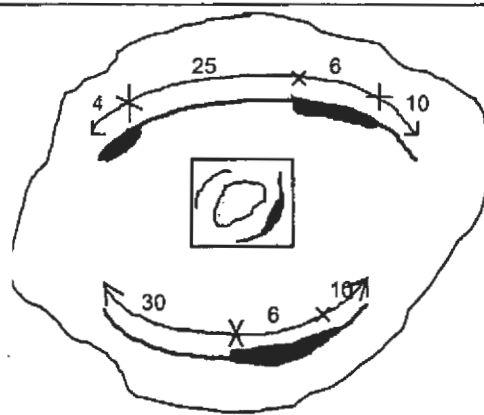
Measurement Rules

1. No allowance is necessary for tight gum veins.
2. Ignore loose gum veins, open rings and gum pockets less than 4 cm from log edge.
3. If distance between rings, between ring and pipe or between ring and the outside of the log is *10 cm or less - allow section as full defect*. This defect can be allowed for as addition to main pipe, a discontinuous pipe or as a length allowance.
4. Where loose veins or rings completely circle the log and are within 10cm of the edge of the log, ie. no useable wood outside ring, reduce the diameter of the log. Reduced log diameters can be recorded as a cutback (eg. 100 x 56/48).
5. Allowances are made for **each individual ring**. Individual allowances are then totalled and added to the pipe.
6. If distance between rings, between ring and pipe or between ring and the outside of the log is *greater than 15 cm - allow 1 cm per 25 cm of ring, or part thereof* (in relation to distance between ring and pipe, the edge of the actual pipe is to be used).
7. If distance between rings, between ring and pipe or between ring and the outside of the log is *11-15 cm inclusive - double the ring allowance arrived at in 6 above*.
8. For *wet rings*, eg Spotted Gum and White Mahogany, *double the allowance arrived at above*.
9. For gum pockets allow 1 cm per 2 cm of gum pocket.
10. The ring allowance is to be added to the basic pipe allowance at each end of the log *prior to rounding up the total pipe allowance to the next even centimetre*.

Type of defect	Distance between pipe and/or pipe	Allowance
Tight gum veins		Nil
Loose gum veins and open rings	<10 cm	Allow section as full defect
	>15 cm	1cm/25cm of ring or part thereof
	11 – 15 cm	Double basic allowance
Wet rings		Double allowance given above
Gum veins and pockets		1cm per 2cm

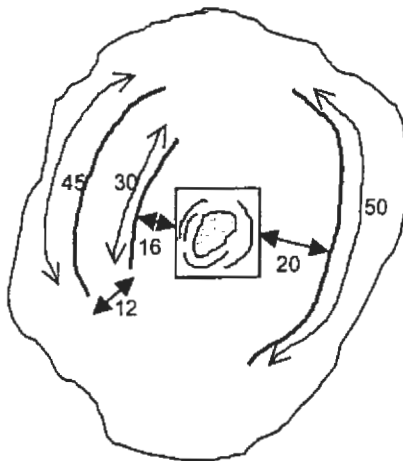


3 gum rings of lengths 20, 10 and 45 cm
Basic pipe increased by $1 + 1 + 2 = 4$ cm



Ring lengths = 40 cm and 35 cm
Allowance = $2 + 2 = 4$ cm
Length of gum pockets = 16 cm
Allowance = 8 cm
Total additional allowance to basic pipe =
 $4 \text{ cm} + 8 \text{ cm} = 12 \text{ cm}$

- Loose veins or rings which completely circle logs *and* are closely (less than 10 cm) concentric to the extent that useable timber cannot be sawn in between may render the log non-compulsory.
- In many species, such as Spotted Gum, rings tend to occur only in the butt section of the log. In this case, where rings cause the butt to be non-compulsory, the defect should be either butted off or given as a cutback in length (if agreed to by the customer). Where rings in the butt are expected to cut out and the butt is still compulsory, it may be possible to allow for the defect as a length allowance rather than increase the pipe, though this is less desirable.



Allowance:

Pipe = 10 cm (min)

Single Ring = 50 cm
Allowance = 2 cm

Multiple Rings 45 cm ring = 4 cm allowance
30 cm ring = 4 cm allowance
Allowance = 8 cm

Therefore Rings = 10 cm allowance

Therefore total pipe allowance
= 20 cm

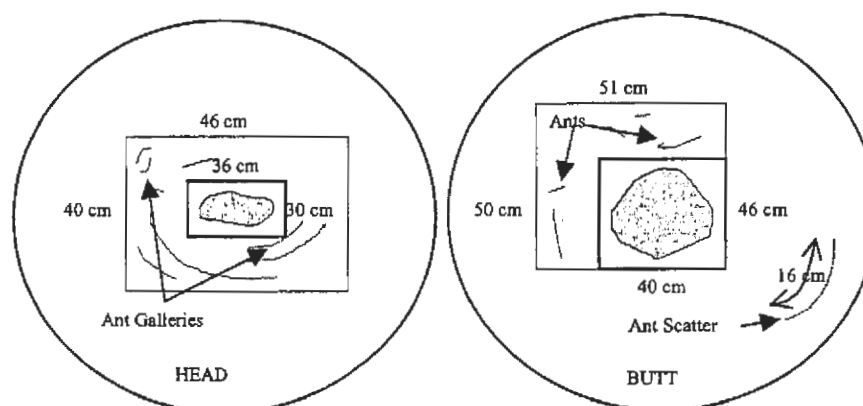
2.2.4 Termites and Grubs

Termites are commonly associated with hollows and mud-guts associated with or adjacent to the central pipes. Where there are no useable widths of wood between central pipe and heavy gallery formations the entire affected section should be boxed-out and become the basic pipe.

Isolated and scattered galleries can be allowed for by adding an appropriate allowance to the basic pipe. (As a guide $\frac{1}{4}$ of the arc distance of the scatter can be added to the pipe allowance.)

The presence of exit holes and bumps along the length of the log may attract length allowance and are signals of a generally lower quality log.

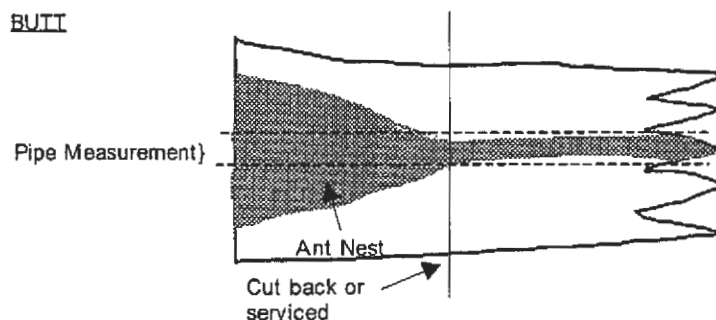
Grubs should be treated in a similar fashion.



Basic Pipe = 44cm

Basic Pipe = 51 cm + (16 cm for scatter
x $\frac{1}{4}$) = 51 + 4 = 55 = 56 cm

Average pipe = $\frac{44 + 56}{2} = 50$ cm



Where ants show only at one end, an estimate should be made of the ant workings. Again, this is often area dependent. At times "ant windows" or swellings can give a guide to the extent of the workings.

Ant nests cause a large pipe at the butt of the log but often cut out in a very short distance. This is best allowed for as either a cut back or serviced off depending on the log quality at the butt. Provided maximum pipe defect is not exceeded (taking into consideration any butt flaring), and on the basis that there is not an opportunity to cut off a short length of log, as well as a length cut back the appropriate diameter of pipe at the butt to record would be similar to that occurring at the head.

Odd grub holes are not related to the pipe, occurring anywhere in the log. They are usually species/area related, with Grey Gum being a culprit species. Again allowances should be based on how the logs are cutting rather than strict formulas.

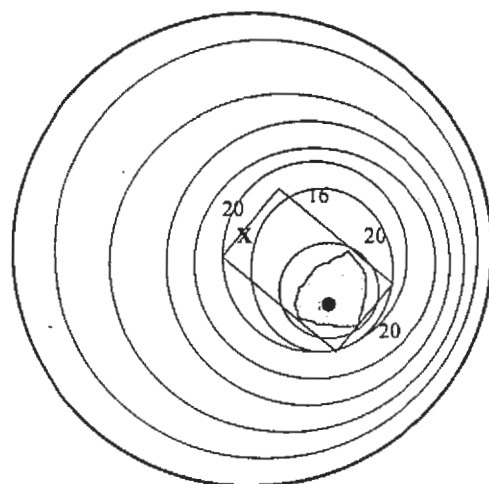
2.2.5 Hearts out of Centre

Hearts out of centre that do not wander require no allowance. This generally is only the case in straight logs of regular shape, and is signalled by the heart being offset in the same quadrant in both ends.

A heart out of centre in only one end of a log and which is not expected to wander, may be piped by allowing the actual width of the pipe by the distance from the geometric centre of the log to the outside of the actual pipe (or edge of log if less than 10 cm of wood between pipe and edge of log). The other end is piped normally.

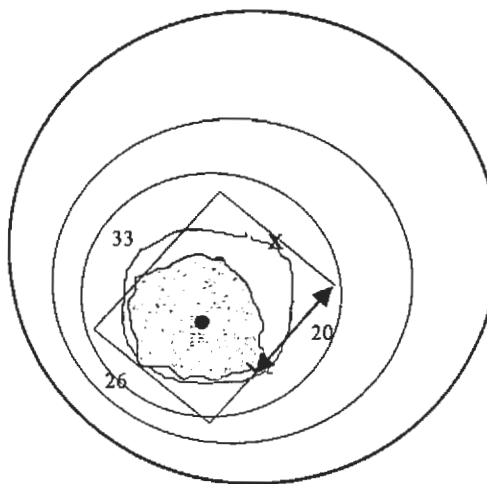
Hearts significantly out of centre and which are expected to wander as evidenced by the presence of kinks and bends in the log, and the hearts appearing in different quadrants at each end, attract an additional allowance. The pipe at either end of the log is piped by allowing their actual width by the distance from the geometric centre of the log to the outside of the actual pipe (or edge of log if less than 10 cm of wood between pipe and edge of log). Half the distance from pipe centre to geometric centre of log is given as an additional allowance.

Heart out of centre on one end only



$$\Rightarrow 40 \quad \text{Pipe} = \frac{36 + 20}{2} = 28$$

Wandering heart



$$\text{Pipe} = \frac{26 + 33 + 20}{2} = \frac{79}{2} = 39.5$$

2.2.6 Brown Stain

Nfw mce

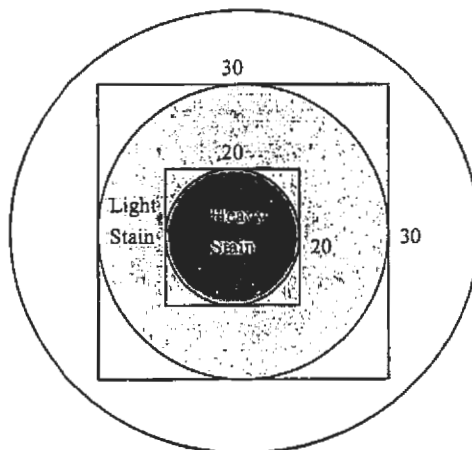
Brown stain is common in old trees and is a transitional phase between sound wood and incipient decay (more common in some tableland species).

Brown stain often appears worse when logs are freshly fallen and wet, and allowances may be unnecessarily inflated in comparison to allowances given on logs which have been given some days to dry, the drying process tending to lighten the stain and lead to more appropriate allowances being made.

Brown staining is generally heaviest at the centre of the log and lightens and/or disappears radiating out towards the sapwood. The point at which the wood cell structure and strength is lost is where the basic pipe should be given and may be determined either visually or by chipping with an axe, puncture test, splinter test or otherwise an estimate of this position is required. Any white flecking is a sign of decay.

Brown stain, and particularly light brown stain, where wood strength has not been lost, is not an allowable defect. It needs to be determined if the wood is structurally sound.

A guidelines for measuring this defect is to allow $\frac{1}{2}$ of the lightly stained wood as defect (provided some evidence of heavy stain exists). **Close local observations of mill recovery are required to assist in determining appropriate allowances for this defect.**



Allowance

Heavy Stain = 20 cm

Light Stain = $30 - 20 = 10 \times \frac{1}{2} = 5$ cm

Allowance = 25 cm

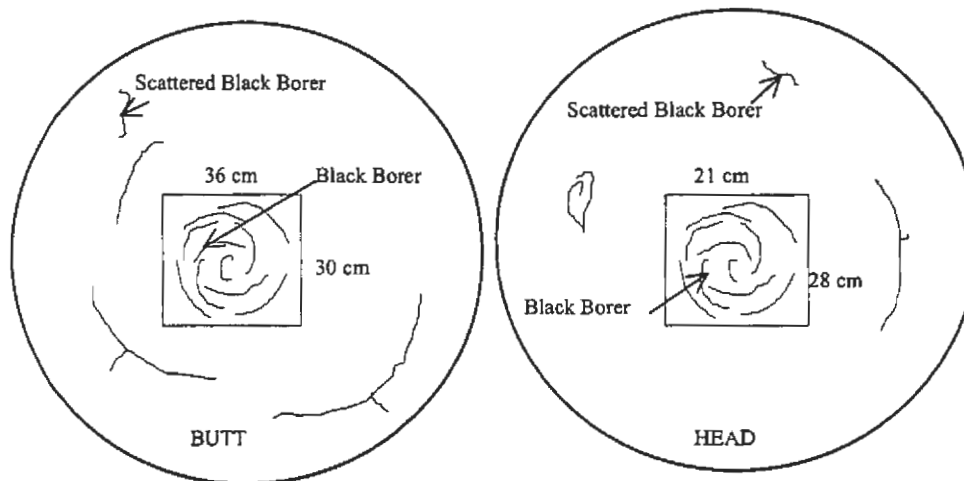
= 26 cm (rounded up)

2.2.7 Black Borer (Wireworm)

This defect appears as concentric black rings 1-3 mm approximately in thickness, usually confined to within 30 cm of the heart and, unless scattered, should be piped out.

Where only occasional borer tracks occur, not concentric in shape and well outside the heart as described above, such can be ignored, or a minor additional pipe allowance given.

Generally where black borer is in evidence, look carefully for the presence of black heart (occurs in Turpentine and Brushbox generally).



$$\text{Pipe} = \frac{36 + 30}{2} = 33 \Rightarrow 34$$

$$\text{Pipe} = \frac{21 + 28}{2} = 25 \Rightarrow 26$$

$$\text{Average pipe} = \frac{34 + 26}{2} = 30 \text{ cm}$$

Other borers such as *Ambrosia* (Pin Hole) borer can reduce wood quality to the extent that the log is non-compulsory. Allowances for lesser damage by necessity need to be arbitrary.

2.2.8 Black Heart

Black heart should not be confused with brown stain in mature wood. The latter can have a dark brownish colour but black heart is readily discernible and identified by fine black lines radiating from centre towards sap. Black heart is often found in Turpentine logs but can also occur in other species, eg Bluegum.

Determination of extent of black heart needs to be made on a freshly cut face, as discolouration fades rapidly. To determine if an allowance is required, it must firstly be determined if the affected wood is utilisable. **(If in doubt consult with miller/observe milling, puncture or splinter test.)** Simply - if useable then no allowance applies. If decay has advanced to the stage that the affected wood is no longer utilisable - then all affected wood is defect and should be piped out. Discolouration is not necessarily an indication that wood has decayed beyond use.

When examining the possible extent of discolouration on the ends of a Turpentine log, the use of a wire brush is essential to "bring out" the defective area.

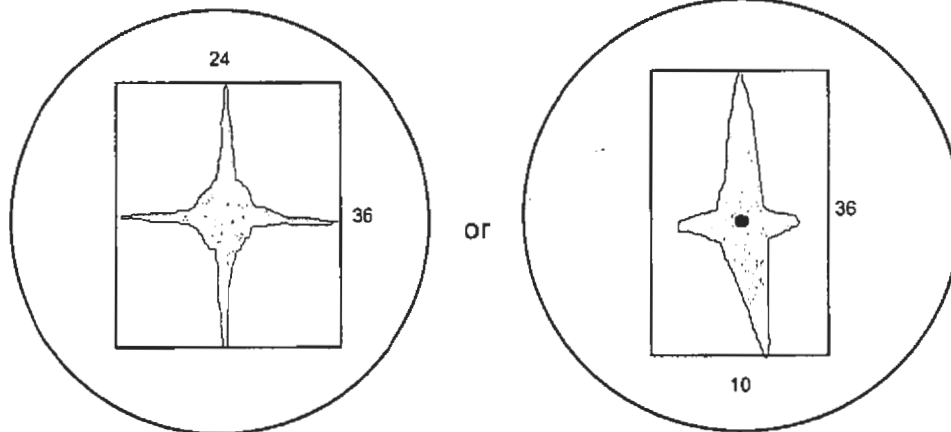
Nfw mce

2.2.9 Straight Shakes (Star)

Straight shakes are where the shake follows the form of the log and there is no spiralling in the grain.

For clean narrow (3 mm) star shakes, $\frac{2}{3}$ of the extent of the shake should be allowed for as pipe defect.

eg:

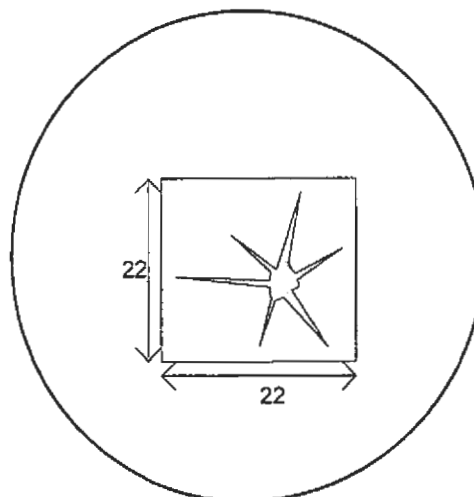


$$\begin{aligned}
 &\text{ie Pipe} \\
 &\frac{(24 \times \frac{2}{3}) + (36 \times \frac{2}{3})}{2} \\
 &= \frac{16 + 24}{2} \\
 &= 20 \text{ cm}
 \end{aligned}$$

$$\begin{aligned}
 &= \text{ie Pipe} = \frac{(36 \times \frac{2}{3}) + 10}{2} \\
 &= \frac{24 + 10}{2} \\
 &= 17 \Rightarrow 18 \text{ cm}
 \end{aligned}$$

Note: If these shakes are likely to affect only a short (ie less than 50%) section of the log, a reduced allowance may be appropriate.

If widespread star shake, box out fully as pipe.



$$\text{eg Pipe} = \frac{22 + 22}{2} = 22 \text{ cm}$$

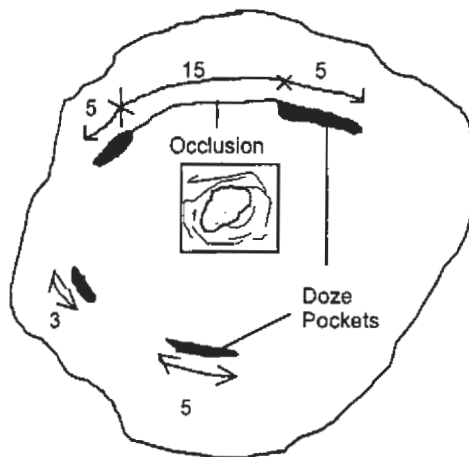
2.2.10 Shakes in Spiral Grain

Where shakes follow spiral grain, the sawn recovery will be considerably less than equivalent shakes in straight grain logs, and therefore additional pipe allowance should be made after consideration of the acceptability of the extent of spiral grain (max. 1:8).

Shakes rotating around the axis of a log generally render all wood in the arc of the rotation useless.

In a log with spiral grain where "excessive" shakes occur, the full area affected should be regarded as defect and boxed out.

2.2.11 Overgrowth and Doze Pockets



An allowance of 1 cm for every 6 cm of length or part thereof of overgrowth and/or doze pockets should be made (as for gum pockets).

For longer pockets see 2.2.3(2).

Note: If the defect can be best related to a length allowance rather than pipe that is preferable - normally this is the case.

eg: Doze (18cm)	- 3 cm allowance
Occlusion (15cm)	- 3 cm allowance
Total	- 6 cm (plus pipe allowance)

2.2.12 Small Log Pipe Allowances

The same principles apply in the measurement of small logs (under 40 cm cdub), with the exception that there is no minimum pipe allowance. While clean small logs also contain pith, occluded limbs and other minor heart defect, this material is usually recovered as pallet in these logs. **However, any pipe defect in small logs can have a large impact on recovery especially if associated with sweep.**

Whilst the Compulsory Utilisation Schedule will provide for the limit of acceptable defect, additional care is required to recognise and adequately allow for pipe defect in small logs.

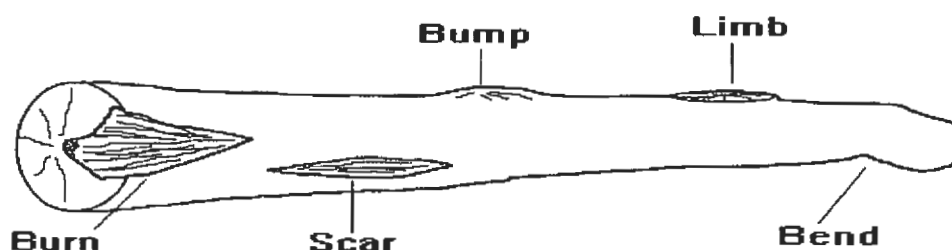
A few mcs

2.3 LENGTH DEFECTS

2.3.1 General

Some defects on logs are better accounted for by length allowance rather than pipe defect. These defects are usually found on a section of the log rather than the whole length of the log (as is pipe), but there are exceptions, eg scar for full log length.

Defects usually include bumps, limbs, swellings, overgrowths, monkey eyes, punks, bends, dry sides and at times ant nests and other internal defects, eg doze, that only affect part of the length of the log.



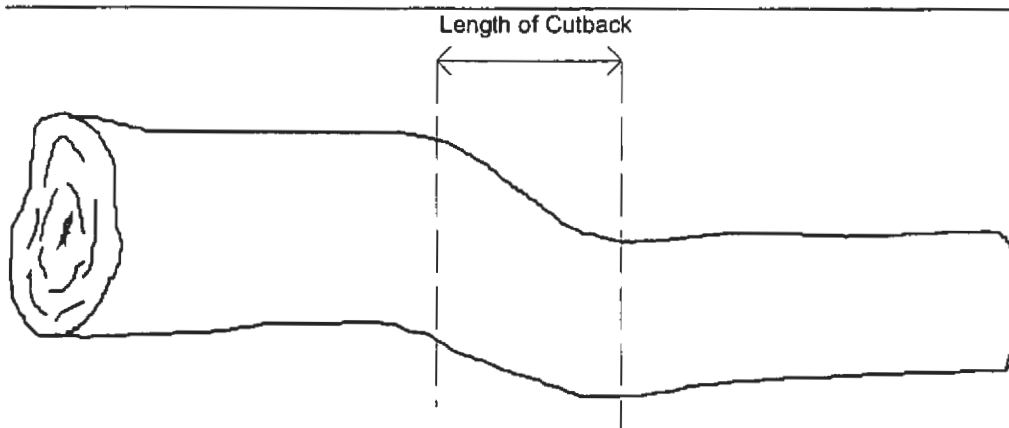
The following characteristics of logs are not classified as length defect:

1. Small sound limbs that affect only a small volume of wood do not qualify for length allowance unless they occur in large numbers.
2. Epicormic branches and small bumps resulting from them do not attract allowances. (If these result from a major fire, other defects may be present, eg scars).
3. Bumps and swellings, which experience and observations indicate to be above sound wood, ie there is no defect under the bump or swelling. (Not common - care needs to be taken in adopting this conclusion.)
4. Spiral or curly grain less than the specified maximum permissible.

2.3.2 Non-allowable Defect (Cutbacks)

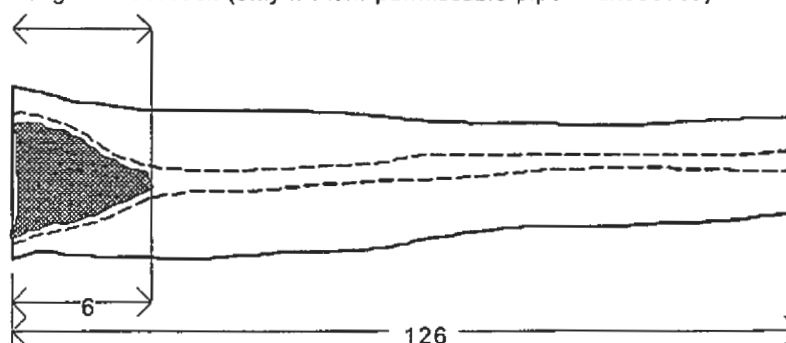
A cutback is a method of removing a section of log on paper that should have been removed by servicing the log. It usually covers a section of the log that is below minimum specifications. This section could be part of a bend or kink in the log, which by its shape is below specification but was left in the log for ease of handling and haulage.

Cutbacks apply to ends of logs or where a section of the log is unusable due to lack of straightness, or an obvious ant's nest or limbs encircling a log. Cutbacks for other defect located at other than the end of logs should be avoided with the defect being more accurately determined by cross cutting (other than due to kinks).



Cutbacks can also include heads or butts that are below specifications but which were not cut off, either by mistake or to deliberately downgrade the log.

Length of Cutback (only if max. permissible pipe is exceeded)



Cutbacks are recorded as two length measurements separated by a diagonal line (to nearest unit).

Log No.	Length	Diameter	Pipe
	126/120		

This log has 6 dm (0.6 m) of defect that should have been serviced from the log. The shorter measurement is used when calculating the volume of the log, or assessing log defect.

2.3.3 Allowable Length Defects

This is a length defect, which is part and parcel of the log and cannot reasonably be excluded by servicing. These can be at the ends of logs or anywhere along the length.

Logs may have both allowable and non-allowable length deductions.

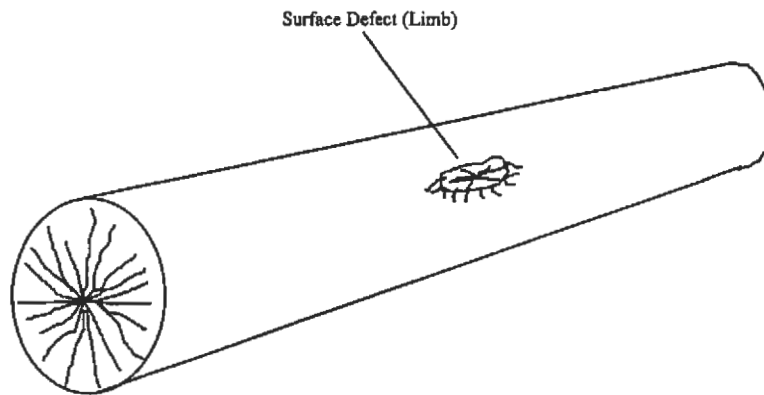
Examples of common length defects and method of measurement follow, but notwithstanding the guidelines remember the approach is to estimate defects that are not generally acceptable in the F11 SAA sawn standard, and make allowance using the principles given.

Length deductions are given for:

- 2.3.3.1 Limbs.
- 2.3.3.2 Burn Scars, Bumps and Swells.
- 2.3.3.3 Multiple Length Defects.
- 2.3.3.4 Kinks and Bends (Sweep).
- 2.3.3.5 Straight Splits.
- 2.3.3.6 Curly Grain
- 2.3.3.7 Spiral Grain and Associated Splits.

2.3.3.1 Limbs

Step1: A surface defect (limb) is observed



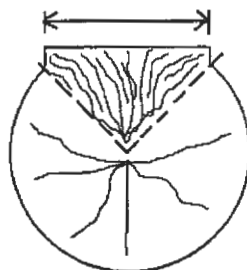
Sound limbs *may* have minimal effect on sawn recovery. Even when an effect occurs, in many cases this effect does not go to the central pipe. Hence the section affected will often be less than that caused by a hollow limb extending to the pipe.

Whilst F11 specifications tolerate some sound limb affected timber, large sound limbs will distort timber to the extent that defect occurs.

Step 2: The cross section or proportion of circumference of the log is imagined at that point, as is the area affected by the defect (in this case about $\frac{1}{4}$). Note the actual limb is measured - not the section affected by cutting limb flush with the log.

Normally this is best assessed as a fraction, namely $\frac{1}{10}$, $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{3}$ or $\frac{1}{2}$, $\frac{2}{3}$ or $\frac{3}{4}$.

Section Affected $\frac{1}{4}$



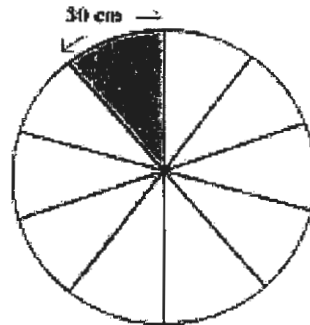
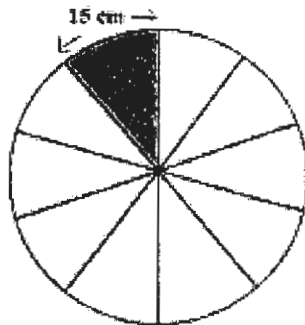
Note: Care should be taken in assessing proportion affected eg for a defect in a log of 50 cm dia., to affect $\frac{1}{10}$ the defect needs to be 15 cm across.

Proportion
Affected

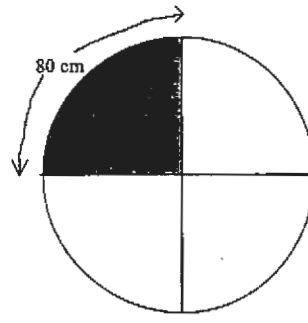
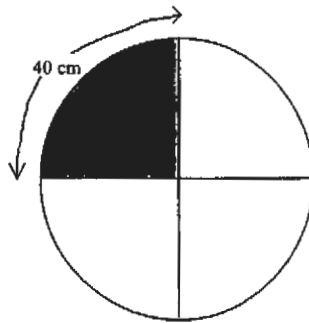
50 cm dia. log

100 cm dia. log

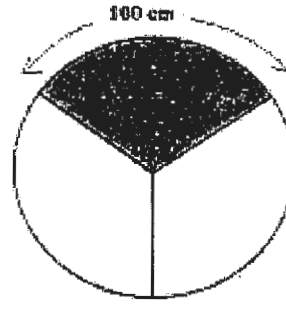
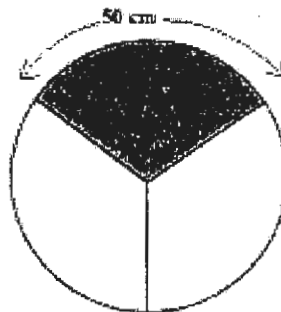
$\frac{1}{10}$



$\frac{1}{4}$



$\frac{1}{3}$



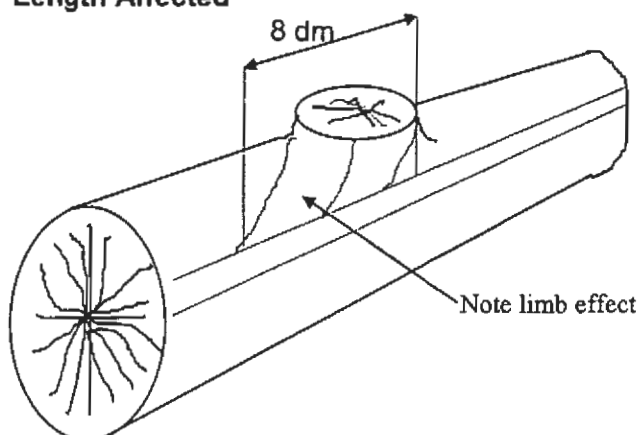
To achieve a 1 dm (minimum) allowance for a length defect, the following examples show the length of log that must be affected by a length defect at various sections:

eg:

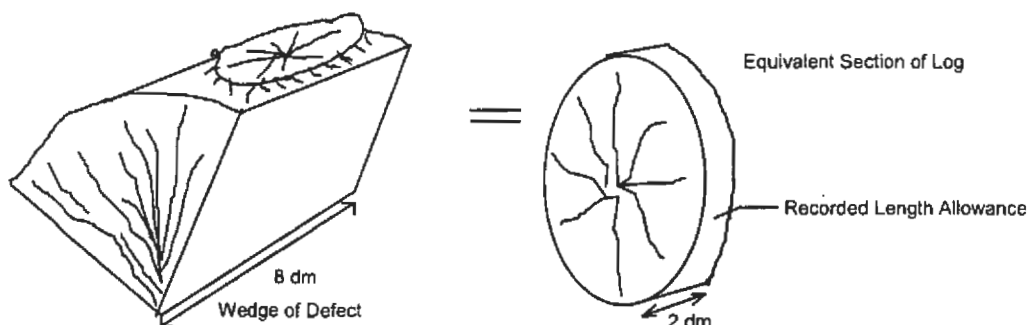
$\frac{1}{10}$ -	10 dm affected	= 1 dm allowance
$\frac{1}{4}$ -	4 dm affected	= 1 dm allowance
$\frac{1}{3}$ -	3 dm affected	= 1 dm allowance.

Step 3: From a knowledge of broken down logs, the length of the log that is affected by the limb is estimated (in this case 8 dm).

Length Affected



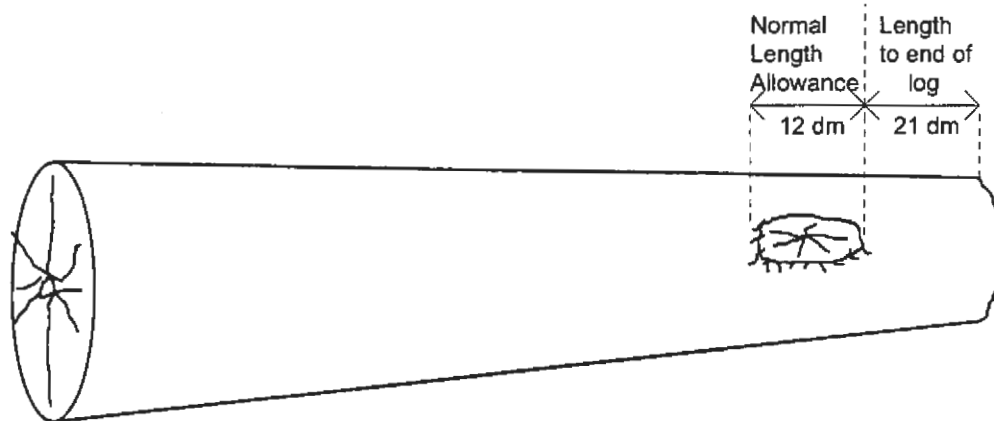
Step 4: The affected part is a wedge and it is necessary to convert it to an equivalent round volume (in this case $\frac{1}{4} \times 8 = 2$ dm).



Measurement Rules

1. Cross sectional area affected should be assessed in fractions, namely $\frac{1}{10}$, $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{3}$ or $\frac{1}{2}$, $\frac{2}{3}$ or $\frac{3}{4}$.
2. A length defect has to have at least 24 dm (2.4m) between it and another length defect, or the end of the log, otherwise the whole section (including separating clear wood) is included in the length allowance as shown below.
3. The allowance for individual length defects must be calculated and rounded up to the next even dm *before* totalling the length allowance for the whole log.
4. Individual defects attracting less than 1 dm length allowance should be ignored - *unless* such defects occur together (cumulatively).
5. The minimum length allowance is 4 dm for any log that has a length defect.
6. Epicormic branches and small bumps affecting only the outermost 40 mm of the bole should not attract allowances.
7. Special rules often apply for measurement of small logs.

A few more

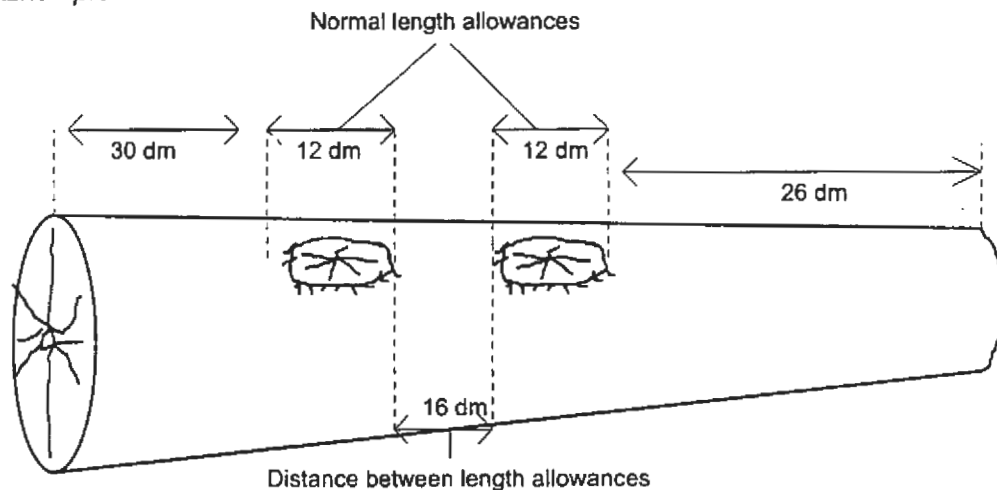


If the limb affects $\frac{1}{3}$ of the log cross section for 12 dm but is 21 dm away from the end of the log, the allowance is:

$$\begin{aligned} \frac{1}{3} (12 + 21) &= \frac{1}{3} (33) \\ &= 11 \text{ which is rounded up to } 12. \end{aligned}$$

2.3.3.2 Multiple Length Defects

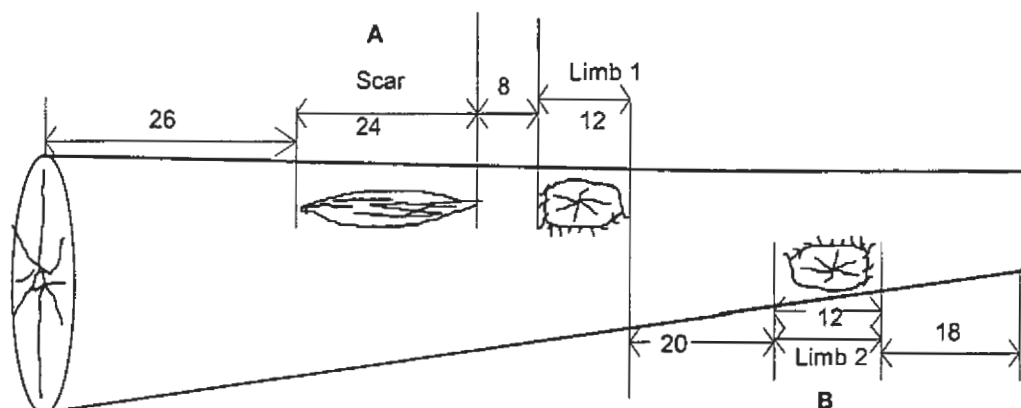
Example 1:



If the two limbs both affect $\frac{1}{3}$ of the log cross section for 12 dm but both line up and are 16 dm apart the allowance is:

$$\begin{aligned} (12 + 16 + 12) \times \frac{1}{3} &= 40 \times \frac{1}{3} \\ &= 13 \text{ rounded up to } 14. \end{aligned}$$

Example 2:



In this case the following length defects occur.

- Scar - affects $\frac{1}{4}$ of the log cross section for 24 dm.
- Limb 1 - affects $\frac{1}{4}$ of the log cross section for 12 dm but is on the same side as the scar and is 8 dm from the scar.
- Limb 2 - affects $\frac{1}{3}$ of the log cross-section for 12 dm and is on the opposite side of the log to the other limb separated from it by 20 dm. This limb is also 18 dm from the end of the log.

Allowances would be:

$$\text{Defect A - (Scar + space + limb1)} \times \frac{1}{4} = 24 + 8 + 12 = (44) \times \frac{1}{4} = 11 \Rightarrow 12 \text{ dm.}$$

$$\text{Defect B - (Limb2 + space)} \times \frac{1}{3} = 12 + 18 = (30) \times \frac{1}{3} = 10 \text{ dm.}$$

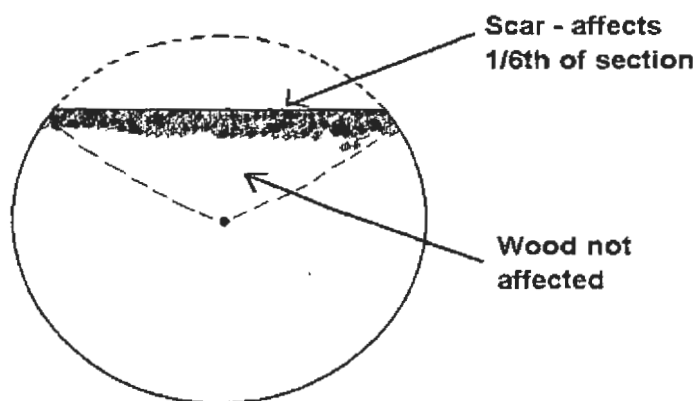
$$\text{Total} = 22 \text{ dm.}$$

In instances where multiple offset defects occur, consideration needs to be given as to where the log will be crosscut to achieve the best obtainable sections. Crosscutting normally would result in an increase in the non-utilisable wood, ie increase in defect allowance. This complex situation is best provided for by increasing the estimated proportion of the log affected, eg say from $\frac{1}{3}$ to $\frac{1}{2}$. *Multiple defects can also render a section of a log unusable.*

In all cases, watching logs being broken down at a sawmill is important to help gain experience in estimating the effect of each type of defect, and how much of the length and cross section of a log is affected by particular defect types. Logs will vary from area to area as will the effect of the defect.

2.3.3.3 Burn Scars, Bumps, and Swells

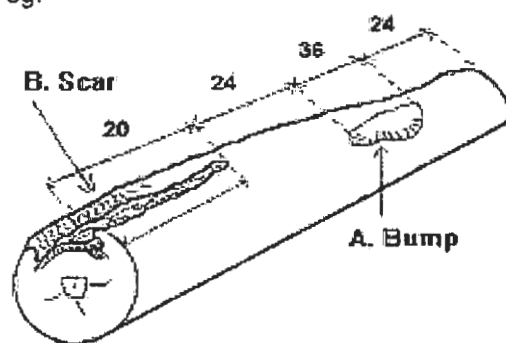
These are allowed for by estimating the proportion of the cross sectional area affected and multiplying this by the length. (Based on defect affecting only a proportion of log depth. Note that defect may occur on scar interface, eg ants, fungal attack.).



Scars and bumps, which are assessed as being only surface in extent (outermost 40 mm) and therefore not affecting sawn recovery, should not be allowed. **Caution applying this guide to bumps.**

Recent epicormic shoot bumps would generally not be allowed if assessed as affecting only the sapwood.

Ant windows along the log in association with heavy and gallery evidence at the ends is indicative of a poor log and will generally require caution and allowance. If unsure, consider further cross cutting to expose the extent of the defect.
eg:



A. Bump affects $\frac{1}{4}$ cross sectional area, so allow $36/4 = 9$. Rounded up to 10 dm



B. Scar affects $\frac{1}{3}$ cross sectional area, so allow $20/3 = 7$. Rounded up to 8 dm



Total allowance = 18 dm.

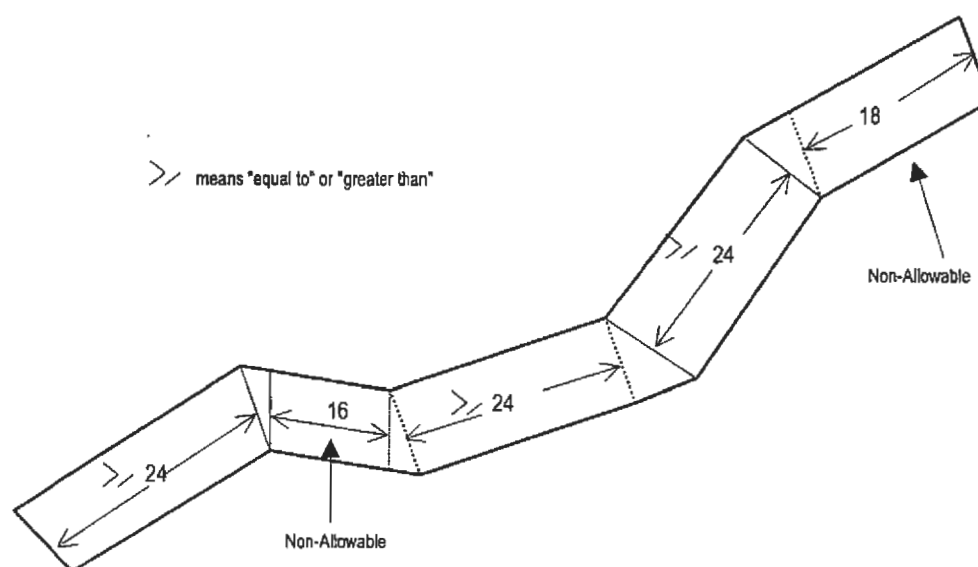
2.3.3.4 Kinks, Sweep and Poor Shape

Kinks

Where the log can be cross cut in the mill yard at the position of kinks or bends without significant useable length being lost, and where the useable lengths recovered are equal to or in excess of 24 dm, then no allowance is given.

A kink or bend within 24 dm of either end of a log should attract a non-allowable cutback if no useable timber can be recovered (these sections should have been serviced off).

Similarly, where any length less than 24 dm is lost along the log between kinks and bends, then full length of such sections should be serviced out or allowed for as a cutback.



So, if the total length of this log as presented was 106, it would be tallied 106/72.

Sweep

Sweep is a even change in direction over a distance of usually no less than 24dm. Shorter changes of direction are bends or kinks and should not be measured as sweep.

The maximum sweep a log or section of a log can carry is one fifth of the diameter of the log over a minimum length section (24dm for logs >40cm mid diameter or 30dm for logs <40cm mid diameter). If the sweep in any minimum length section of the log is greater than $\frac{1}{5}$ of the diameter at that point, (measure with stringline) then that whole, or part of that section of the log, can be either cut out of the log or allowed for as a cutback.

It should be recognised that whilst a log may not exceed the maximum allowable sweep, there will still be a loss in recovery as sweep increases. To make an allowance for sweep the following procedure should be undertaken.

- a) Determine the level of sweep and the length affected remembering the maximum level of sweep allowable.

- b) Apply the following length allowances over the affected length. This allowance is in addition to any other allowances applicable to that length.

Level of sweep	Allowance	Allowance over 24dm length
Sweep less than 1 in 10	No allowance	0
Sweep between 1 in 10 and 1 in 8	25% of affected length	6dm
Sweep between 1 in 8 and 1 in 5	33% of affected length	8dm
Sweep greater than 1 in 5	Not acceptable as a graded log	Not applicable

Measurement of sweep

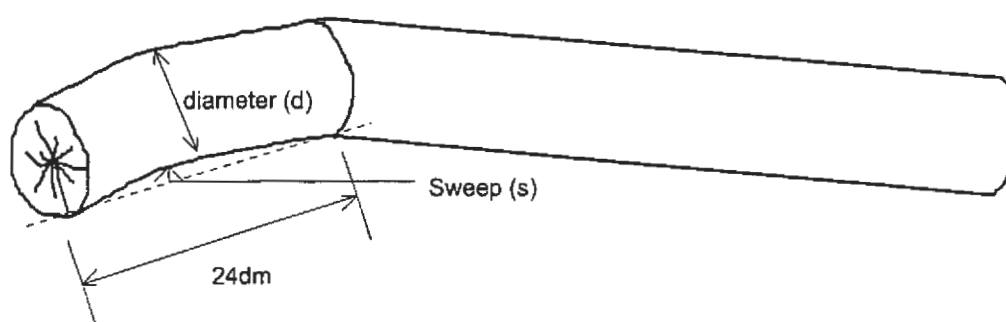


Table showing deflection by log diameter of various levels of sweep

Log diameter (cms)	Maximum deflection (sweep) over 24dm length		
	1:10	1:8	1:5
30	3	4	6
35	4	4	7
40	4	5	8
45	5	6	9
50	5	6	10
55	6	7	11
60	6	8	12
65	7	8	13
70	7	9	14
75	8	9	15
80	8	10	16

When applying an allowance for sweep, the allowance is to be applied in addition to other length allowances. Logs cannot exceed the maximum allowable defect percentage for their diameter.

If a log can be straightened by crosscutting the deflection is usually caused by a kink and not by sweep. In cases such as this no allowance for sweep should be made.

Poor Shape

1 JANUARY 2002

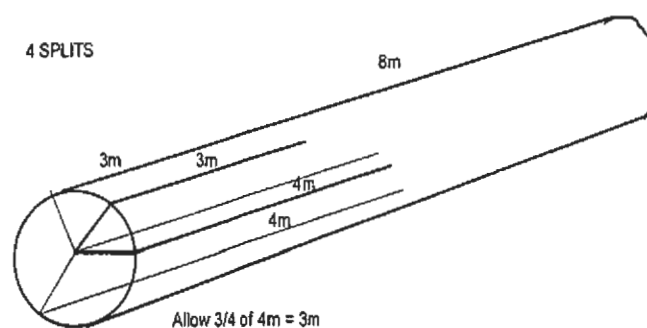
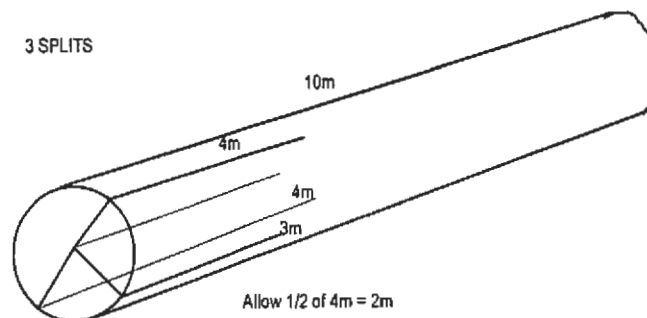
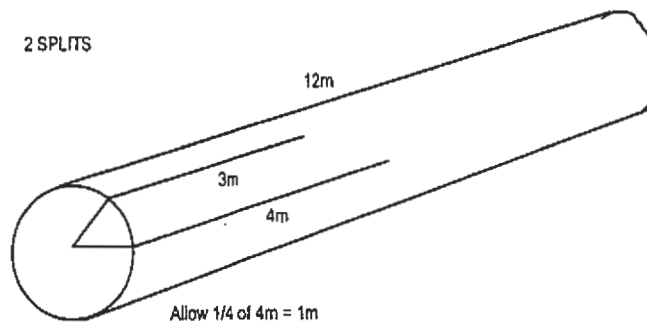
Handwritten signature/initials

Where logs are of very poor shape, an allowance equivalent to the estimated length deemed to be lost through shape should be made, eg if estimate one third of the log is going to be lost in sawn recovery due to misshapen form, then allow $\frac{1}{3}$ in length. This allowance will be higher for logs with pipe.

2.3.3.5 Straight Splits

Straight splits along the log which are inherent in the log, may be allowed as length deduction as follows:

1 x Split	- no allowance
2 x Splits	- 25% of length of log affected
3 x Splits	- 50% of length of log affected
4 x Splits	- 75% of length of log affected



In some cases, excessive splits should have been serviced off and a non-allowable deduction may be appropriate.

2.3.3.6 Curly Grain

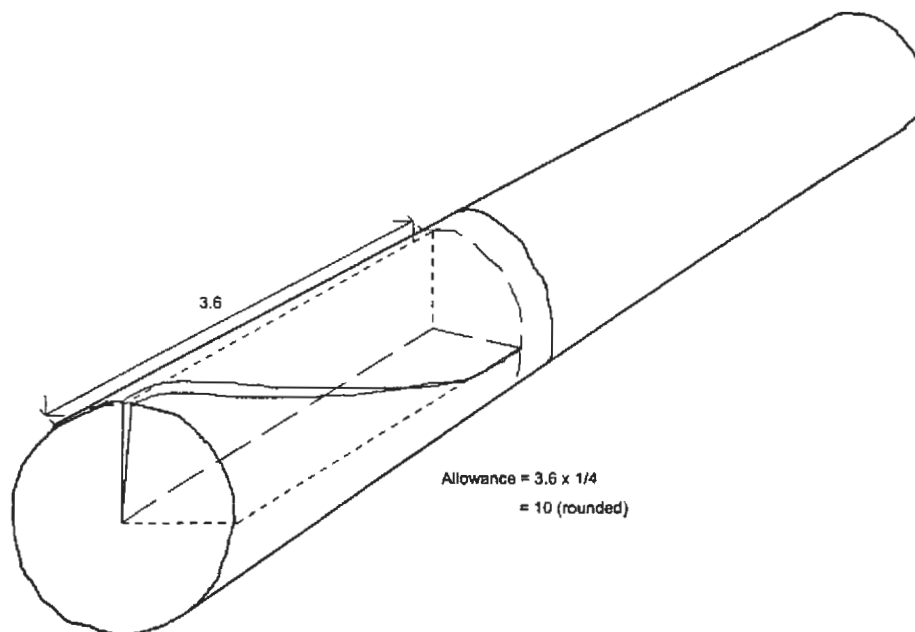
nfw mce

Excessive curly grain, where proven to extend through to the heartwood in Brushbox, may cause a log to be downgraded.

2.3.3.7 Spiral Grain and Associated Splits

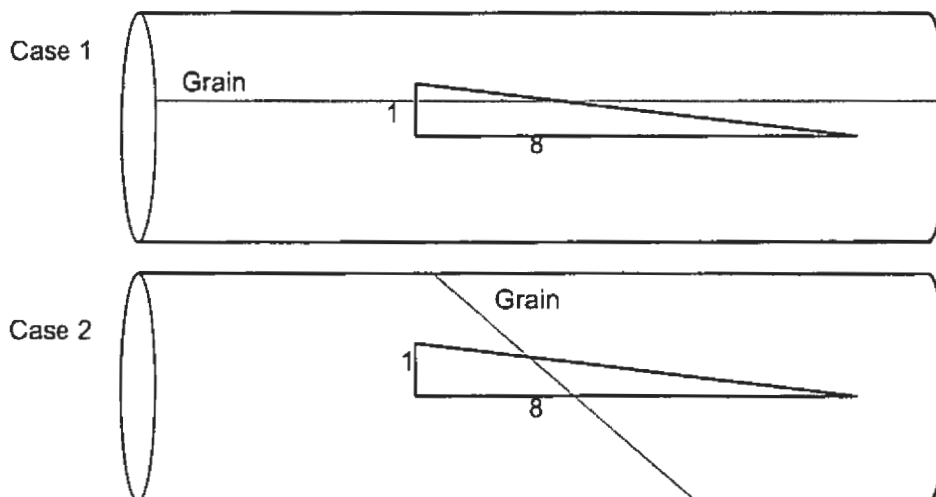
Spiral grain in excess of 1 in 8 will render logs non-compulsory, less than 1 in 8 is acceptable and no allowance is given. *The log grader should always check that spiral grain extends beyond the sapwood.*

Splits associated with spiral grain will render affected section of log useless and in most cases may be serviced off. Where some useable wood appears available, an adequate allowance to cover the unusable section of log should be made.



Spiral Grain

To determine acceptability of spiral grain in comparison to the maximum spiral permitted (1 in 8), the following procedure can be undertaken:



1. Remove bark to ensure spiral is in wood. Again check to ensure spiral is more than sapwood deep.

2. With chalk draw a triangle as shown above on log. Short side 10 cm, long side 80 cm or multiples thereof.
3. If grain is steeper than slope of the triangle (Case 2) the grain is steeper than 1:8, if not (Case 1) the log is acceptable.

APPENDIX 1**Determination of Defect Percentage****Method A - Sharp Pocket Computer Model PC-1248****Operation**

- **Press ON.**
- **Press SHIFT**
- **Press = (RUN)**
- **Press ENTER**

Display will prompt you for the next move

- **Enter length in dm**
- **Press ENTER**
- **Enter diameter in cm**
- **Press ENTER**
- **Enter pipe in cm**
- **Press ENTER**
- **Enter length deduction in dm (If Nil press 0.)**
- **Press ENTER**

Display will indicate defect %

Note: Some pocket computers may also display gross, defect and net volumes each time **ENTER** is pressed.

APPENDIX 1**Determination of Defect Percentage****Method B - Sharp Programmable Scientific Calculator Model EL-5120****Operation of normal calculator function**

- Press **ON**
- Press **MODE** until display shows <MODE SELECT>
- Press **1:REAL** then use as a normal calculator
- Use **ENTER** key to calculate
- To exit, Press **2ndF** (yellow button) and **ON/OFF** button (top left)

Note: to calculate the square root ($\sqrt{}$) of an equation, the equation must be first enclosed in parenthesis, eg $\sqrt{(320 + 160 + 192)}$

Operation of defect program function

- Press **ON**
- Press **MODE** until display shows <MODE SELECT>
- Press **4:PROG** then use as a normal calculator
- Press **1:RUN**. Display will ask which program you want to run, ie RUN
→01:DEFECT You may have to use the arrow keys to scroll to the program of your choice if there is more than one program in the calculator.
- Press **ENTER**. Display will prompt you to enter the length.
- Enter length in dm
- Press **ENTER**. Display will prompt you to enter the diameter.
- Enter diameter in cm
- Press **ENTER**. Display will prompt you to enter the pipe diameter.
- Enter pipe diameter in cm
- Press **ENTER**. Display will prompt you to enter the length deduction.
- Enter length deduction in dm. If there are no length deductions, enter 0
- Press **ENTER**. Displays "Gross volume"
- Press **ENTER**. Displays "Defect volume"
- Press **ENTER**. Displays "Net volume"
- Press **ENTER**. Displays "Defect percent"
- Press **ENTER** and program starts again, display will prompt you to enter the next length
- To exit, Press **2ndF** (yellow button) and red **CL/CA** button.
- Press **QUIT**. Displays PROGRAM MODE
- Press **2ndF** and **ON/OFF** button (top left)

APPENDIX 2

Conversion of Area to Equivalent Pipe Diameter

Pipe Allowance (cm)	$\sqrt{\text{equivalent (sq cm)}}$	Pipe Allowance (cm)	$\sqrt{\text{equivalent (sq cm)}}$
10	100	68	4624
12	144	70	4900
14	196	72	5184
16	256	74	5476
18	324	76	5776
20	400	78	6084
22	484	80	6400
24	576	82	6724
26	676	84	7056
28	784	86	7396
30	900	88	7744
32	1024	90	8100
34	1156	92	8464
36	1296	94	8836
38	1444	96	9216
40	1600	98	9604
42	1764	100	10000
46	2116	102	10404
48	2304	104	10816
50	2500	106	11236
52	2704	108	11664
54	2916	110	12100
56	3136	112	12544
58	3364	114	12996
60	3600	116	13456
62	3844	118	13924
64	4096	120	14400
66	4356		

SCHEDULE 5

Price Schedule

RFW MCE

a few more

A few more

SCHEDULE 6

DELIVERY CHARGE SCHEDULE

Delivery Charges (1 October 2003 to 1 October 2004)

Region	Price Zone	Delivery Charges \$/m ³ (Exclusive of GST)
Mid North Coast Region	Coopernook	\$ [REDACTED]
	Kempsey	\$ [REDACTED]
	Kendall	\$ [REDACTED]
	Wauchope Coastal	\$ [REDACTED]
	Wauchope Foothills	\$ [REDACTED]
North East Region	Dorrigo Central	\$ [REDACTED]
	Dorrigo West	
	Coffs Harbour	
	Urunga Upriver	
	Urunga Coastal	

A few more

SCHEDULE 7

DELIVERY SITE AND DELIVERY HOURS

Thora mill, Thora
6:30am – 5:00pm Monday to Thursday
6:30am – 1:30pm Friday

All other deliveries outside of the above hours and arrangements will be by prior agreement with the
Company.

nfw me

**SCHEDULE 8
REVIEW OF DELIVERY CHARGE**

Changes in the level of costs of Conducting Contract Harvesting

Cost Item	Contract Harvesting Adjustment Indicator	Contract Haulage Adjustment Indicator
Item 1: Wages	Wages: 75% of the movement in Transport Industry Interim (State) Award - Transport Worker Grade 7	Wages: 75% of the movement in Federal Forest and Building Manufacturing and Merchandising General Award (1996) Level 5 operator
	Workers Compensation: 100% of the movement in the applicable WorkCover NSW rate for native forest haulage	Workers Compensation: 100% of the movement in the applicable WorkCover NSW rate for native forest harvesting
	Superannuation: 100% of the legislated movement in the employer superannuation contribution rate	Superannuation: 100% of the legislated movement in the employer superannuation contribution rate
Item 2: Fuel	100% of the movement in the Shell Wholesale price for Diesel 500 in NSW less the On road Grant Base Price (exc GST) Plus Federal Excise Less On Road Grant Total (exc GST)	100% of the movement in the Shell list price for diesel 500 in NSW Base Price Plus Federal Excise Less Diesel Fuel Rebate Total
Item 3: Repairs and Maintenance	Parts: 100% of the movement in the ABS Transportation vehicle parts index	Parts: 100% of the movement in the ABS Transportation vehicle parts index
	Labour: 75% of the movement in the Metal and Engineering Award Level C10 mechanic	Labour: 75% of the movement in the Metal and Engineering Award Level C10 mechanic
Item 4: Tyres	100% of the movement in the retail list price (including GST) of a Goodyear G286 11R22.5 radial truck tyre	No adjustment
Item 5: Administration and Overheads	75% of the movement in the ABS Consumer Price Index for 8 capital cities	75% of the movement in the ABS Consumer Price Index for 8 capital cities
Item 6: Capital related items (depreciation and interest)	No adjustment	No adjustment

afw

mcc

SCHEDULE 9
EXAMPLE APPLICATION OF CLAUSE 5.5

Refer me