

Detailed Forest Management Plan Approval Decision

Slave Lake Pulp Corporation
A Division of West Fraser Timber
Slave Lake, Alberta

Forest Management Agreement
#9000028

Date: April 3, 2003
Effective: May 1, 2002

Approved by: Original signed by
D. (Doug) A. Sklar
Executive Director
Forest Management Branch
Land and Forest Division

EXECUTIVE SUMMARY

This Approval Decision documents the facts considered, assumptions made and conditions imposed by the Executive Director regarding the Slave Lake Pulp Corporation (Slave Lake Pulp or SLP) detailed forest management plan submitted for department review on May 15, 2002. It brings closure to the DFMP planning process and provides direction for the successful and efficient implementation of the plan.

The department commends Slave Lake Pulp for developing a DFMP that meets the requirements of The Interim Forest Management Planning Manual, Guidelines to Plan Development, April 1998 and the Supplemental Guidelines – Timber Supply Analysis – Documentation of Results. All stakeholders participated at the planning table and reached consensus on the DFMP. The three Working Groups (Planning, Silviculture and Fish and Wildlife) introduced early in the process shows that the Companies are committed to working toward resolution of operational integration challenges anticipated through the implementation of the DFMP. This demonstrates to the department, stakeholders and the public the ability of cooperative management to achieve results when a planning process is inclusive and task orientated and understandable to all. I believe this process has worked well and has benefited those who participated.

The planning team's message is consistent throughout the document and the Company does a good job of providing a rationale for its management approach. Through this plan, Slave Lake Pulp has demonstrated its willingness and propensity for dealing with issues brought forward in the planning process.

The Detailed Forest Management Plan for Slave Lake Pulp Corporation submitted May 15, 2002 is approved subject to the Approval Conditions and the Annual Allowable Cuts presented in this Approval Decision.

Approval Conditions

1. Timber Salvage Drain

- i. The department requires that SLP track removals from the net landbase due to industrial development and account for the salvaged timber as production chargeable to the AAC. Timber volumes will be reconciled at the end of every five year period. Each operator will share this drain in proportion to their percentage allocation of the total AAC. The method of determining the percentage reduction to the AAC is presented in Appendix 2.*

At the end of the first period (2002 – 2006) SLP will determine the actual drain and where salvaged volumes are greater or lesser than the predicted average volumes, the surplus or deficit will be carried forward into the next period (2006 – 2011) and the AACs will be adjusted accordingly.

2. Commercial Thinning

- i. The Company will follow the department's specific requirements for developing, implementing and reporting the results of commercial thinning plans. (to be provided under separate cover)*

3. Growth and Yield Program

- i. Slave Lake Pulp will develop a Growth and Yield Program and have it approved by the Manager, Resource Analysis Section by October 1, 2003. The plan will be designed to provide the data necessary to validate the yields forecasted by all yield functions and strata used in the TSA,*

including all post-harvest, natural, and managed natural strata. Post harvest yield strata that predict greater than fire origin yields must meet the requirements of the EFM Technical Protocols.

- ii. Both permanent and temporary sample plots must be established for all yield strata as defined in (i.) above. This approach will build separate data sets to be used for independent model construction and validation.*
- iii. Local regeneration survey data must be incorporated into the Growth and Yield Program. This data will be collected and submitted as defined in the current versions of the Regeneration Survey Manual and the ARIS Industry Operations Manual. Raw regeneration survey plot data collected by all forest operators will also be submitted in a format acceptable to the department.*
- iv. The Company's plot establishment schedule will place special weight on obtaining useful amounts of post-harvest data in time to be used in the next DFMP.*

4. FMA Reforestation Standard

- i. Slave Lake Pulp will develop an FMA-specific reforestation standard (Model II) and implementation schedule for the FMA by December 31, 2004.*

5. Road Corridor Development Plan

- i. Slave Lake Pulp will develop and submit a road corridor development plan for the entire FMA by December 31, 2003.*

6. Structure Retention

- i. Slave Lake Pulp will design a cost effective and practical field assessment program for structure retention monitoring and reporting by June 30, 2003. This volume will be chargeable as AAC production and will be reconciled every 5 years at the end of each cut control period. The program must meet the approval of the Manager, Resource Analysis Section by this date. Failure to meet this deadline or to annually report these statistics will result in a reduction of the FMA AAC by 1% effective May 1, 2002.*

7. Spatial Harvest Sequence

The stands identified in Appendix H the Preferred Forest Management Strategy 20 year Harvest Sequence map are approved for harvest during the first 20 years of the planning period.

The following requirements apply:

- i. Slave Lake Pulp will prepare a summary table listing stands scheduled for harvest (20 years) by strata and leading species to the Manager, Forest Planning Section by March 31, 2003.*
- ii. To provide flexibility to address operational planning concerns, SLP and the embedded forestry disposition holders are authorized to modify the harvest sequence by replacing up to 20% of the total sequenced area in each compartment, within each decade.*
- iii. Preferably, stands selected to replace those in the DFMP harvest sequence will be selected from the second 10 years of the sequence (years 11 to 20). Where this is not feasible, replacement may be made from any other stand identified in the net landbase of the FMA.*
- iv. Where the Company plans to exceed the 20% authorized variance, approval for such must be granted by the department. The department's decision to authorize this deviation will be*

determined through discussions with the Company and a detailed analysis of the factors contributing to the variance. In the event the department determines the variance to be a result of inadequate TSA inputs, SRD will require the Company to update its TSA and generate a new harvest sequence.

- v. The department will generally not request a modification of the harvest sequence for the first 10 years of the planning period unless it is required by a change in legislation or a policy approved by the Minister.*

8. Stand Density Management

- i. Slave Lake Pulp will monitor, track and report the results of their stand density management trials as per the EFM Technical Protocol requirements.*

Approved Annual Allowable Cuts

The Annual Allowable Cuts (AACs) and carryover volumes as presented in Appendix 2 of this document are approved. Appendix 3 outlines the details of the carry-over volume calculations.

Authorization

The Detailed Forest Management Plan for Slave Lake Pulp Corporation submitted May 15, 2002 is approved subject to the Approval Conditions and the Annual Allowable Cuts presented in this Approval Decision.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	I
TABLE OF CONTENTS	IV
1. INTRODUCTION	1
2. FOREST MANAGEMENT PLAN AREA	1
3. PLAN BACKGROUND	1
4. SOURCE DOCUMENTS	1
5. APPROVAL SCOPE	2
6. DFMP COMMENTS	2
6.1 General	2
6.2 Specific Comments	3
Approval Condition 1 – Timber Salvage Drain	3
Approval Condition 2 – Commercial Thinning	4
7. GROWTH AND YIELD	4
7.1 Regenerated Yield Assumptions	4
7.2 Implementation and Monitoring	4
Approval Condition 3 - Growth and Yield Program	5
Approval Condition 4 - FMA Reforestation Standard	5
Approval Condition 5 - Road Corridor Development Plan	5
8. STRUCTURE RETENTION	6
Approval Condition 6 – Structure Retention	6
9. PREFERRED FOREST MANAGEMENT STRATEGY	6
10. SPATIAL HARVEST SEQUENCE	7
Approval Condition 7 – Spatial Harvest Sequence	7

11. TIMBER SUPPLY ANALYSIS (TSA).....	8
11.1 Net Landbase	8
12. STAND DENSITY MANAGEMENT (SDM)	9
Approval Condition 8 – Stand Density Management	9
13. MANAGED FOREST STATE.....	9
14. APPROVED ANNUAL ALLOWABLE CUTS.....	9
15. AUTHORIZATION.....	9
APPENDIX 1.....	10
Table 1. SLP Coniferous Allocations within the FMA ¹ by FMU.	10
Table 2. SLP Deciduous Allocations within FMA	10
APPENDIX 2.....	11
Table 2.0: Approved Annual Allowable Cut for 2002 - 2011	11
<u>Industrial Timber Salvage Drain</u>	12
APPENDIX 3.....	14

1. INTRODUCTION

The Executive Director of the Forest Management Branch (FMB), Land and Forest Division (LFD) of the Department of Sustainable Resource Development (SRD) has the authority to approve for implementation, Detailed Forest Management Plans (DFMP) prepared by Forest Management Agreement (FMA) holders. This Approval Decision documents the facts considered, assumptions made and conditions imposed by the Executive Director regarding the Slave Lake Pulp (SLP) Detailed Forest Management Plan submitted for department review on May 15, 2002. This approval decision also brings closure to the DFMP planning process and provides direction for the successful and efficient implementation of the DFMP.

2. FOREST MANAGEMENT PLAN AREA

The area under consideration is the Forest Management Agreement (FMA) area of Slave Lake Pulp. FMA #9000028 was allocated to SLP through Order-in-Council 614/90, dated November 7, 1990, and subsequently amended through Orders-in-Council 130/96, 26/99, and 219/2001.

The FMA area is comprised of one forest management unit (FMU) S20. Forest management unit S20 was formed by amalgamating FMU's S1 (east side), S2 and S6. The effective date for the creation of FMU S20 is May 1, 2002.

3. PLAN BACKGROUND

Early in the planning process SLP recognized that the completion of the DFMP by November 15, 2000 could not be accomplished due to the revision of the FMA and the significant impacts of the 1998 fire season. SLP requested an extension beyond this date to which SRD agreed and granted the extension to November 15, 2001. Subsequently, the impacts of the 2001 Chisholm Fire (Fire # LWF-063-2001) created a further delay in the DFMP development. The department acknowledged this and amended the final submission date to May 15, 2002.

The DFMP Planning Team has been in place since January of 2000. The team, made up of representatives from the major stakeholders within the FMA area including all other timber users, government agencies and representation from other forest users and the general public, met once a month and then bi-weekly as the due date for plan submission approached.

Upon receipt of the May 15, 2002 DFMP, the department began the formal review.

4. SOURCE DOCUMENTS

Refer to Appendix 1.

5. APPROVAL SCOPE

This Approval Decision relates to the Slave Lake Pulp Detailed Forest Management Plan submitted May 15, 2002.

Slave Lake Pulp will meet the requirements (dates and content) of the Approval Conditions unless alternate requirements are agreed to in writing by the Executive Director, Forest Management Branch.

In the event of an inconsistency between this plan and existing, new or revised legislation or regulation, the legislation or regulation shall apply.

6. DFMP COMMENTS

6.1 General

The department commends Slave Lake Pulp for developing a DFMP that meets the requirements of *The Interim Forest Management Planning Manual, Guidelines to Plan Development, April 1998 and the Supplemental Guidelines – Timber Supply Analysis – Documentation of Results*. I understand that all stakeholders participated at the planning table and reached consensus on the DFMP. The three Working Groups (Planning, Silviculture and Fish and Wildlife) introduced early in the process shows that the Companies are committed to working toward resolution of operational integration challenges anticipated through the implementation of the DFMP. This demonstrates to the department, stakeholders and the public the ability of cooperative management to achieve results when a planning process is inclusive and task orientated and understandable to all. I believe this process has worked well and has benefited all who participated.

The department review team commented that the Slave Lake Pulp DFMP is well organized and easy to understand. The planning team's message is consistent throughout the document and the Company does a good job of providing a rationale for its management approach. The plan accomplished this by linking effectively the DFMP strategies to the goals and the selected Preferred Forest Management Strategy (PFMS). The detailed Landscape Assessment and the independent Watershed Analysis clearly document the existing forest conditions and provide a baseline to which the PFMS can be compared and assessed.

Slave Lake Pulp has demonstrated its willingness and propensity for dealing with issues brought forward in the planning process. The Terms of Reference Issue Resolution Table (Table 8-5) clearly documents the stakeholder issues identified and provides a ready reference to the section of the DFMP where each issue was addressed.

6.2 Specific Comments

- 6.2.1 **DFMP Objective 12.2 and Strategy 12.2.1:** *Apply TDA money collected for both coniferous and deciduous species to the re-establishment of pre-disturbance cover types on the FMA.*

The department is unable to authorize the allocation of Timber Damage Assessment revenues to disposition holders (DTA, CTQ, CTP) regardless of the proposed use. The concept is innovative and the benefits to sustainable forest management are evident, however, SRD has no mechanism to allow this redirection of Provincial revenues to non-FMA disposition holders. I am unable to authorize this strategy for all operators at this time.

6.2.2 Industrial Timber Salvage

The DFMP does not address how timber drain will be accounted for on the FMA through the plan period. As this future drain is not considered in the timber supply analysis, the Company and the department have agreed to reduce the proposed total harvest levels by percentages (1.2% for coniferous and 0.4% for deciduous) that represent the historical average drain for the previous 5 timber years.

Approval Condition 1 – Timber Salvage Drain

The department requires that SLP track removals from the net landbase due to industrial development and account for the salvaged timber as production chargeable to the AAC. Timber volumes will be reconciled at the end of every five year period. Each operator will share this drain in proportion to their percentage allocation of the total AAC. The method of determining the percentage reduction to the AAC is presented in Appendix 2.

At the end of the first period (2002 – 2006) SLP will determine the actual drain and where salvaged volumes are greater or lesser than the predicted average volumes, the surplus or deficit will be carried forward into the next period (2006 – 2011) and the AACs will be adjusted accordingly.

- 6.2.3 **DFMP Strategy 15.3.5:** *“Provide opportunity for thinning with the understanding that additional volumes will be chargeable until such time as volume recovery estimates are developed and validated.”*

Opportunities for operators to investigate innovative practices are central to the concept of adaptive management. The department supports the development and implementation of commercial thinning plans that are prepared through discussion with other operators, consider the operational implications of the activity and have an end result in mind (crop planning). Each plan will be considered an *operational trial* and as such will not define a broad management strategy to be applied across the landscape.

The following condition applies:

Approval Condition 2 – Commercial Thinning

The Company will follow the department's specific requirements for developing, implementing and reporting the results of commercial thinning plans. *(to be provided under separate cover)*

7. GROWTH AND YIELD

7.1 Regenerated Yield Assumptions

The SLP Timber Supply Analysis assumes that yields from managed stands where Stand Density Management (SDM) is practiced produces increased timber volume above that produced by natural stands. SDM is to be practiced on 50% of the pine sites where the Timber Productivity Rating (TPR) is Good or Medium.

I encourage companies to develop and test new strategies for improved productivity and stand performance. Alberta considers this forest management work to be Enhanced Forest Management (EFM). Local empirical data is currently not available to validate these yield assumptions and therefore Alberta requires that SLP validate their assumptions via the implementation of a comprehensive Growth and Yield Program.

7.2 Implementation and Monitoring

Chapter 7, Plan Implementation and Monitoring reasonably explains the approach the Companies will follow to implement and monitor the achievement of DFMP Goals and Objectives. The effective monitoring and validation of DFMP assumptions is paramount to adaptive management, continual improvement and forest sustainability. SRD reviewers repeatedly noted the planned deferral for developing and implementing the various monitoring programs and plans. DFMP Table 7-4 outlines these and several are of concern.

For example, SLP proposes to,

- a. develop a growth and yield program by 2005;
- b. create Model II regeneration standards by 2010;
- c. develop a road development plan (M26, page 7-14) by 2005; and
- d. develop a site productivity (SDM/EFM/Potentially Productive Ground) framework by June 2004.

Given the lack of detail for the proposed implementation and monitoring plans in Chapter 7, the following is required:

Approval Condition 3 - Growth and Yield Program

- a) Slave Lake Pulp will develop a Growth and Yield Program and have it approved by the Manager, Resource Analysis Section by October 1, 2003. The plan will be designed to provide the data necessary to validate the yields forecasted by all yield functions and strata used in the TSA, including all post-harvest, natural, and managed natural strata. Post harvest yield strata that predict greater than fire origin yields must meet the requirements of the EFM Technical Protocols.
- b) Both permanent and temporary sample plots must be established for all yield strata as defined in a) above. This approach will build separate data sets to be used for independent model construction and validation.
- c) Local regeneration survey data must be incorporated into the Growth and Yield Program. This data will be collected and submitted as defined in the current versions of the Regeneration Survey Manual and the ARIS Industry Operations Manual. Raw regeneration survey plot data collected by all forest operators will also be submitted in a format acceptable to the department.
- c) The Company's plot establishment schedule will place special weight on obtaining useful amounts of post-harvest data in time to be used in the next DFMP.

I recommend that Slave Lake Pulp consult with the department prior to, and during the development of this program to ensure the department's needs are met.

Approval Condition 4 - FMA Reforestation Standard

- a) Slave Lake Pulp will develop an FMA-specific reforestation standard (Model II) and implementation schedule for the FMA by December 31, 2004.

Approval Condition 5 - Road Corridor Development Plan

- a) Slave Lake Pulp will develop and submit a road corridor development plan for the entire FMA by December 31, 2003.

8. STRUCTURE RETENTION

The Company proposes to develop stand level management strategies to mitigate the impacts of forestry practices on biological diversity and wildlife habitat. These are designed to ensure that key biodiversity indicators are maintained within a natural range of variability, in specific stand types across the FMA. The DFMP indicates that these strategies are important for the maintenance of biodiversity attributes across the landscape and for the maintenance of wildlife habitats by providing contiguous cover type patches.

Throughout the Province, forest industries practice merchantable green tree retention within cut blocks to create residual (post harvest) stand structure. SRD has approved detailed forest management plans that propose structure retention targets between 1% and 15% of merchantable volume. SLP is consistent with this approach as it proposes a minimum retention target of 1% of the scheduled harvest area within each operating unit and up to an average level of 3% of the scheduled harvest area across each Landscape Management Unit (LMU). The consideration of residual structure is important and SLP has taken a conservative approach. I believe this is appropriate in the absence of definitive, scientifically derived conclusions indicating otherwise.

SLP has defined (page 6-2) how structure retention will be implemented, monitored and the operational results reported (i.e. Annual Harvest Reports (M33) and Landscape Structure Reports (M12) total harvest areas and volumes will be reconciled with the harvest schedule every five-years.) I believe this strategy will allow for a practical and cost-effective method for tracking and reporting structure retention, and timber harvest production reconciliation to be developed.

Approval Condition 6 – Structure Retention

SLP proposes to utilize the merchantable components of harvested stands to create an optimum amount of retained stand structure within cutblocks, however the details of how this will be done are yet to be developed.

- a) Slave Lake Pulp will design a cost effective and practical field assessment program for structure retention monitoring and reporting by June 30, 2003. This volume will be chargeable as AAC production and will be reconciled every 5 years at the end of each cut control period. The program must meet the approval of the Manager, Resource Analysis Section by this date. Failure to meet this deadline or to annually report these statistics will result in a reduction of the FMA AAC by 1% effective May 1, 2002.

9. PREFERRED FOREST MANAGEMENT STRATEGY

The FMA will be managed on a single landbase basis. With this, SLP will adopt a single pass harvest system without predetermined constraints on maximum cutblock size, or green-up and

adjacency. This is a departure from the predominantly practiced two-pass harvest system and the associated operational constraints however it is not uncommon from other proposals in DFMPs.

The DFMP reasonably describes, tests and predicts the outcomes of the preferred forest management strategy. Companies will closely monitor, as outlined in the implementation and monitoring section, the attainment of commitments made and alignment with forecasted results. It is critical that a sound monitoring and reporting program be adhered to by all forest operators on the FMA to prove up and demonstrate the success in achieving the desired results of this plan.

The DFMP describes the elements that defined the Preferred Forest Management Strategy. The Company has satisfied the Department that the PFMS is reasonable and sustainable. The details presented in the landscape and watershed assessments, sensitivity analysis, spatial harvest sequence, and implementation and monitoring strategies support this conclusion.

10. SPATIAL HARVEST SEQUENCE

I believe the spatial (mapped) harvest sequence to be the most important DFMP output. The future forest condition is the culmination of the planning process. It presents spatially and temporally how the integration of environmental, economic, and social values will occur on the FMA. Adherence to the planned harvest sequence is imperative to achieving the predicted future forest.

Approval Condition 7 – Spatial Harvest Sequence

The stands identified in Appendix H the Preferred Forest Management Strategy 20 year Harvest Sequence map are approved for harvest during the first 20 years of the planning period.

The following requirements apply:

- a) Slave Lake Pulp will prepare a summary table listing stands scheduled for harvest (20 years) by strata and leading species to the Manager, Forest Planning Section by March 31, 2003.
- b) To provide flexibility to address operational planning concerns, SLP and the embedded forestry disposition holders are authorized to modify the harvest sequence by replacing up to 20% of the total sequenced area in each compartment, within each decade.
- c) Preferably, stands selected to replace those in the DFMP harvest sequence will be selected from the second 10 years of the sequence (years 11 to 20). Where this is not feasible replacement may be made from any other stand identified in the net landbase of the FMA.
- d) Where the Company plans to exceed the 20% authorized variance, approval for such must be granted by the department. The department's decision to authorize this deviation will be determined through discussions with the Company and a detailed analysis of the factors

contributing to the variance. In the event the department determines the variance to be a result of inadequate TSA inputs, SRD will require the Company to update its TSA and generate a new harvest sequence.

- e) The department will generally not request a modification of the harvest sequence for the first 10 years of the planning period unless it is required by a change in legislation or a policy approved by the Minister.

11. TIMBER SUPPLY ANALYSIS (TSA)

SRD's review of the timber supply analysis validated the methodology and documentation. The Resource Analysis Section conducted a TSA model run using the SLP proposed harvest sequence and produced similar results using SLP analysis criteria.

11.1 Net Landbase

Several anomalies were detected during the net landbase review. Our review indicated their impact on the TSA is negligible but they should be corrected in the next DFMP. A summary of the details is provided below.

- a) The net landbase indicates that a portion of NW quarter of Section 28, Township 73, Range 8, West of the 5th Meridian, south of the highway is in the FMA. The official FMA boundaries indicate that all of this quarter section is in the White Zone FMU S02 and not within the FMA. Less than one hectare (0.64 ha) of net landbase has been included in the net landbase file.
- b) The net landbase has classified three quarter sections in the S02 FMU as being in the S2 FMU. These are the NW & NE quarters of Section 29, Township 73, Range 8, West of the 5th Meridian, as well as the NW quarter of Section 28, Township 73, Range 8, West of the 5th Meridian (also listed in paragraph above). The amount of net landbase included in these 3-quarter sections is 15.90 hectares. This land is not part of the S2 FMU therefore it is important that no operations are scheduled in this area.
- c) Section 3.3.3, "AFORISM COVERAGE ASSUMPTIONS (STATUS)", uses an aspatial process to split land into quota and non quota areas for inclusion into the net landbase based on varying status (STS) calls in Phase 3 for pieces of a single stand. These stands could have been split for FMU boundaries or map cells. A spatial net down process does not work well with an aspatial process and as a result there is not an accurate representation of what stands actually contribute to the net landbase. We estimate that approximately 100 hectares of net landbase have been excluded from the net landbase.

12. STAND DENSITY MANAGEMENT (SDM)

SLP completed a sensitivity analysis of their SDM assumption that demonstrated minimal risk should the SDM forecasts not be attained. The analysis showed that if natural yields were realized instead of the predicted enhanced yields, the AAC impact would be a shortfall of 7,500 m³ after 10 years - DFMP H-13. The risk in this case is acceptable to the Department and is not considered a threat to forest sustainability. Given that this analysis was carried out with the full knowledge of all stakeholders, each understands the implications to their allocation and accept the marginal AAC reductions should the forecasts not be fully realized.

Approval Condition 8 – Stand Density Management

- a) Slave Lake Pulp will monitor, track and report the results of their stand density management trials as per the EFM Technical Protocol requirements.

13. MANAGED FOREST STATE

SLP is proposing that the managed forest will be brought under a regulated state within the 160 year planning horizon. The impact is that within this period the average stand age of timber harvested and average piece size will decline.

During SLP's presentation to LFD staff and SLP FMA timber operators, the company representatives indicated they understood the implications of this analysis. Millar Western Forest Products, Buchanan Lumber, Vanderwell Contractors, Alberta Plywood and the Slave Lake (S6) MTU indicated acceptance of this analysis.

14. APPROVED ANNUAL ALLOWABLE CUTS

The Annual Allowable Cuts (AACs) and carryover volumes as presented in Appendix 2 of this document are approved. Appendix 3 outlines the details of the carry-over volume calculations.

15. AUTHORIZATION

The Detailed Forest Management Plan for Slave Lake Pulp Corporation submitted May 15, 2002 is approved subject to the Approval Conditions and the Annual Allowable Cuts presented in this Approval Decision.

APPENDIX 1
Historical Approved Annual Allowable Cut
(Source: SLP September 15, 1998 DFMP)
(Effective May 1, 2001)

Table 1. SLP Coniferous Allocations within the FMA¹ by FMU.

FMU	Company	Disposition #	% of Coniferous AAC	Coniferous AAC (m ³ /yr)	Utilization Standard
S6	Vanderwell Contractors Ltd.	CTQS060011	59.36	44,465	15/11
	Alberta Plywood Ltd.	CTQS060009	35.16	26,337	15/11
	Local Misc. Timber Users		5.48	4,105	15/11
	Total		100.00	74,907	
S2	Millar Western Forest Products	CTQS020034	71.55	170,809	15/11
	Alberta Plywood Ltd.	CTQS020035	22.95	54,789	15/11
	Local Misc. Timber Users		5.50	13,130	15/11
	Total		100.00	238,728	
S1	Millar Western Forest Products	CTQS010036	12.99	38,648	15/11
	Buchanan Lumber Ltd.	CTQS010038	48.95	145,609	15/11
	Alberta Plywood Ltd.	CTQS010037	38.06	113,216	15/11
	Total		100.00	297,473	

¹ Effective date of the AAC's presented is May 1, 2001.

Table 2. SLP Deciduous Allocations within FMA

FMU	Company	% of Deciduous AAC ²	Deciduous AAC (m ³ /yr)	Utilization Standard
S1S ³ , S2S and S6S	Slave Lake Pulp	100.00	235,385	15/10
S1S-amended	Slave Lake Pulp	100.00	135,052	15/10
	Total	100.00	370,437	

² 2% of the deciduous AAC is allocated to the local timber users.

³ The original FMA area included two townships of FMU S1S (TWP 72-11-5 and 72-12-5).

APPENDIX 2

Table 2.: Approved Annual Allowable Cut for 2002 - 2011
Slave Lake Pulp Detailed Forest Management Plan (May 15, 2002)
(Effective May 1, 2002 – 15 / 10 utilization standard)

Company	Deciduous Timber			Coniferous Timber				
	Allocation (%)	Sustainable Deciduous AAC ⁵ (m ³ /yr)	1% Annual Cut Reduction (m ³) (Imposed if Approval Condition 6 is not achieved)	Allocation ¹ (%)	Non-Sustainable Carry-over Volume ² (m ³) from Period 1996-2001 to be harvested in Period 1, (2001 to 2006)	Sustainable Coniferous AAC ⁴ (m ³ /year)	1% Period 1 Cut Reduction (m ³) (2002 to 2006) ³ (Imposed if Approval Condition 6 is not achieved)	1% Period 2 Cut Reduction (m ³) (2006 to 2011) (Imposed if Approval Condition 6 is not achieved)
Slave Lake Pulp	98.00	530,201	-5,302					
Deciduous MTU	2.00	10,820	-108					
Total	100.00	541,021	-5,410					
Alberta Plywood Ltd				39.06	113,000 (un-audited)	229,039	-10,066	-11,452
Buchanan Lumber				9.32	74,003 (audited)	54,650	-2,778	-2,733
Lakeshore Local Timber Permit Association (S2 MTU)				2.45	0.00	14,367	-575	-718
Millar Western Forest Products Ltd.				40.01	451,000 (un-audited)	234,610	-12,992	-11,730
Slave Lake (S6) MTU				0.77	0.00	4,515	-181	-226
Vanderwell Contractors (1971) Ltd.				8.39	0.00	49,197	-1,968	-2,460
Total				100.00	638,003	586,378	-28,560	-29,319

¹ The decision to manage the FMA as a single landbase triggered a revision to the quota percentages. The calculation method used to revise the quota percentages is shown in Appendix 1 of the DFMP.

² The non-sustainable AAC includes carry-over volumes. The Companies were granted carryover volume to be harvested in the first period/quadrant (2001-2006). The carry-over volumes (audited and un-audited) are outlined in Appendix 3. The carry-over volume averages 127,600.6 m³ per year for the first five years (for a total estimated carry-over of 638,003 m³). The Companies with carry-over volume may harvest at a **higher non-sustainable AAC for the first five years** to completely utilize the carry-over volume. (i.e. the first quadrant of the new FMU S20 CTQ's). SRD's production audits will confirm or change the un-audited numbers.

³ The department assumed that 20% of the carry-over volume was harvested in 2001-2002. The 1% reduction applies to the total volume remaining for harvest calculated as 80% of the carry-over volume + 4 times the sustainable AAC.

⁴ A 1.2% reduction of the proposed DFMP coniferous harvest level as an estimate of future timber drain due to industrial timber salvage was taken to determine the coniferous AAC (Reduction was not applied to carry-over volume).

⁵ A 0.4% reduction of the proposed DFMP deciduous harvest level as an estimate of future timber drain due to industrial timber salvage was taken to determine the deciduous AAC.

APPENDIX 2 (Cont.)

Industrial Timber Salvage Drain

Method of Calculation:

1. Land Status Automated System (LSAS) summaries of non-timber dispositions within the FMA approved during the previous 5 timber years were used to estimate the average annual timber drain that could be expected to occur in the DFMP plan period. Annual summaries of disposition areas include (DRS, EXE, LOC, MLL, MLP, MSL, PLA, PLS, SMC, SML).

Table 3.

Timber Year	Area of Dispositions Approved by Timber Year across Gross FMA Landbase (Ha)	Area of Dispositions Approved by Timber Year across Net FMA Landbase (Net = 68.5% of Gross) (Ha)
May 1, 1997 to April 30, 1998	469.124	321.35
May 1, 1998 to April 30, 1999	274.082	187.75
May 1, 1999 to April 30, 2000	193.172	132.32
May 1, 2000 to April 30, 2001	264.901	181.46
May 1, 2001 to April 30, 2002	125.728	86.12
Five Year Total	1,327.007	909.0
Five Year Average	265.401	181.8

2. Annual areas for the gross FMA landbase were converted to annual areas for the net productive landbase based on *DFMP Table H-1: Net Landbase Summary*. The Net Productive Landbase represents 68.5% of the Gross Landbase: (435,380 ha / 635,477 ha X 100 = 68.5%)
3. Five year average areas were calculated.
4. The percentage split between the coniferous and deciduous landbases was determined by using DFMP yield curve assignments. (Coniferous – 64.04%, Deciduous – 35.96%)
5. Average area of dispositions by landbase (con/dec) is determined by applying the percentage split (#4) to the five year average area.
6. The current (2002-03) Timber Damage Assessment table provided FMA average volumes/ha for coniferous (62.5 m³/ha) and deciduous salvage (31.6 m³).
7. The average areas by landbase were multiplied by the FMA average TDA volumes/ha to determine average annual volumes.
8. The average annual volumes were expressed as a percentage of the recommended DFMP harvest levels. These percentages were applied as a reduction to the DFMP proposed harvest levels to determine the approved Annual Allowable Cuts for coniferous and deciduous timber.

APPENDIX 2 (CONT.)

Table 4.

Category	Area of Dispositions Approved by Timber Year across Gross FMA Landbase (Ha)	Area of Dispositions Approved by Timber Year across Net FMA Landbase (Net = 68.5% of Gross) (Ha)	FMA Timber Damage Assessment (Average FMA TDA Table Volume Yield) (m ³ /Ha)	Annual Volume Estimate of Timber Drain (m ³)	Reduction Applied to DFMP Recommended Harvest Levels to Account for Estimated Future Timber Drain (%)
Five Year Average Area of Non-Timber Dispositions	265.401 Ha	181.8 Ha	-	-	-
Average Area for Coniferous Landbase (64.04%)	N/A	116.4 Ha	62.5	7,275.0	7,275.0 / 593,500 m ³ X 100 = 1.2%
Average Area for Deciduous Landbase (35.96%)	N/A	65.4 Ha	31.6	2,066.6	2,066.6 / 543,194 m ³ X 100 = 0.4%

APPENDIX 3

❑ The PFMS: Single Pass with harvest constraints and SDM and carryover volume:

- Conifer AAC (15/10 utilization standard): 722,000 m³/year (years 1-5)
593,500 m³/year (years 6-160)

Deciduous AAC (15/10 utilization standard): 543,194 m³/year

Richard Briand in email on December 6, 2002: In response to your email & our phone conversation...here is how we (SLP) calculated the carry-over volume for the SLP DFMP:

FMU S1

S1 - Entire FMU (S1S and S1 West):

- Buchanan Lumber = 162,489 m³ (**audited**)
- Millar Western Forest Products = 97,000 m³ (**un-audited**)

The total carry-over for FMU S1 was $162,489 + 97,000 = 259,489$ m³.

In order to determine the proportion of the carry-over for the SLP FMA portion of FMU S1 we used the new interim AAC's for the FMU partition which were:

S1 West = 118,500 m³/yr (34.1%)

S1S = 229,000 m³/yr (65.9%)

The carry-over allocated to each portion of the newly split FMU S1 was calculated as:

S1 West = $259,489 \text{ m}^3 \times .341 = 88,486 \text{ m}^3$

S1S = $259,489 \text{ m}^3 \times .659 = 171,003 \text{ m}^3$

Buchanan agreed to take as much of the carry over as possible from within their new joint FMA with Tolko so:

- Buchanan Lumber carry-over in S1 West = 88,486 m³
- Buchanan Lumber carry-over in S1S = $162,489 \text{ m}^3 - 88,486 \text{ m}^3 = 74,003 \text{ m}^3$
- Millar Western Forest Products carry-over was allocated to S1S = 97,000 m³

FMU S2

- Millar Western Forest Products = 354,000 m³ (**un-audited**)

- Alberta Plywood = 113,000 m³ (**un-audited**)

The total carry-over for FMU S2 was $354,000 + 113,000 = 467,000$ m³.

FMU S6

No carry-over was available - we assumed that it was lost when the Chisholm fire hit.

TOTAL CARRY-OVER

Total carry over was determined to be $171,003 \text{ m}^3 \text{ (S1)} + 467,000 \text{ m}^3 \text{ (S2)} = 638,003 \text{ m}^3$

ADDING THE CARRY-OVER TO THE DFMP:

Carry over was added to the cut in the first five year period = $638,003 \text{ m}^3 / 5 \text{ years} = 127,600.6 \text{ m}^3/\text{yr}$ for 5 years

AAC without carry over = $593,500 \text{ m}^3/\text{yr}$

Therefore the harvest volume in the first five-years was set at $593,500 \text{ m}^3/\text{yr} + 127,600 \text{ m}^3/\text{yr} = 721,100 \text{ m}^3/\text{yr}$

The figure of $722,000 \text{ m}^3/\text{yr}$ was used in the DFMP to account for slight differences that may arise when the carry-over numbers are audited.