# TABLE OF INSTRUMENTS TO TFL 55 LICENCE AGREEMENT

Instrument #	Date	Area (ha)	Description
#1	05/15/93		Subdivision of TFL 55 into TFL 55 and TFL 56
#2	07/07/93		Licence text amendment

# APPENDIX I(b)

**History of Selkirk Tree Farm Licence 55** 

# HISTORY OF SELKIRK TREE FARM 55

# INTRODUCTION

TFL 55 is a new tree farm licence only recently awarded in June 1993. Prior to that, the area had been the north block of TFL 23. As TFL 55 was an integral part of TFL 23 for the past 37 years, some of the early history of TFL 23 is related below.

#### EARLY DEVELOPMENT

The first Europeans arrived in the Arrow Lakes area via the Columbia River in the 1830's, and consisted of explorers and fur-traders. The Hudson's Bay Company at Fosthall established the first trading post in the area, which is 12 miles north of Nakusp on the Upper Arrow Lake.

In 1860, gold was discovered in the Big Bend of the Columbia River, starting a gold rush in which 10,000 placer miners were said to have removed four to five million dollars worth of gold by 1865. With the completion of the Canadian Pacific Railway in 1885, settlement and homesteading of the district began, and the community of Revelstoke started to grow. As local markets for produce proved unreliable, growing fruit and farming for a living became unviable. Many "stump ranches" were also abandoned by settlers to work in the mines and woods. Settlers in the region became dependent on mining and sawmilling for their livelihoods. Throughout this time, small sawmills operated for varying periods. By the early 1950's, with the exception of Revelstoke, the only surviving communities along the CPR were those supported by the forest industry.

The first sawmill was established in Nakusp in 1893. The White Pine Lumber Company operated in Nakusp until it burnt down in 1929. The Big Bend Lumber Company then built a sawmill on the same site in 1935; it operated until 1960 when it was shutdown. Logs were obtained from small contractors who logged along the Upper Arrow Lakes. Fosthall was one of the early areas of large-scale harvesting. Logs were towed in flatbooms across the Upper Arrow Lake to the Nakusp mill site.

#### **MANUFACTURING FACILITIES**

In the 1950's, the Celgar Development Company showed an interest in establishing a pulpmill at Castlegar. The Celanese Corporation of America operated a textile business in the US. After World War II, the corporation began searching for a new source of raw materials that lead them to the forests of British Columbia. In 1952, the company made an application to the BC government for a forest management licence over the Arrow Lakes forest. The government awarded the licence after holding public hearings, with the condition that Celgar Ltd. construct and operate an integrated pulpmill and sawmill complex at Castlegar, BC.

#### PULPMILL

L-P Engineered Wood Products Ltd.

The construction of the integrated complex began in 1958, and the pulpmill started running in early 1961 along with a new sawmill and a wood room for whole log chipping. The pulpmill had a production capacity of 500 tonnes per day of bleached and semi-bleached kraft pulp.

In 1991, the new owners of the pulpmill, Celgar Pulp Company, built a state-of-the-art bleached kraft pulpmill adjacent to the old pulpmill. Its production capacity is 1,000 tons per day of bleached and semi-bleached kraft pulp. Sawmills in Revelstoke sell woodchips to the Celgar pulpmill. In the fall of 1994, Celgar re-opened the wood room, which had been closed since 1986, for processing roundwood and pulplogs into chips.

#### **SAWMILL**

In 1952, the Celgar Development Company acquired the three sawmills that were cutting the majority of the timber within the proposed forest management licence area. The three sawmills were:

William Waldie and Sons Ltd., Castlegar Big Bend Lumber Company, Nakusp Columbia River Timbers, Sidmouth, north of Arrowhead

The Sidmouth sawmill stopped running in 1954. On being awarded the TFL, Celgar Ltd. proceeded to build a modern three-line sawmill at Castlegar. The last of the old sawmills was shutdown in 1960 with the opening of this new sawmill. The annual capacity of the new mill was 10 million board feet of lumber per year. The sawmill is the chief source of chip fibre for the pulpmill.

Westar Timber Ltd., who owned the sawmill at the time, completed a major upgrade of the sawmill in 1985-86. The sawmill is now owned by Pope & Talbot Ltd., and continues to operate in Castlegar as it has for the last 34 years. Continued modifications and upgrades have kept it modern and competitive.

Westar Timber Ltd. acquired the Malakwa sawmill in 1988. Prior to being acquired by Westar Timber the mill had a number of different owners and had been in receivership during the economic downturn of the early 1980s. In 1993 the mill and TFL 55 were acquired from Westar by Evans Forest Products Ltd. In 1997 Evans upgraded the mill to include a small log line. In November of 1999 the mill was acquired by Louisiana-Pacific Canada Engineered Wood Products Ltd. The sawmill continues to cut exclusively cedar to this day.

#### LICENCE HOLDER

TFL 23 was first awarded to Celgar Development Company Ltd. on July 20, 1955 as Forest Management Licence 23. Forest Management Licence 23 covered 889,360 acres (359,923 ha), and extended from Mica Creek south to Castlegar in the Upper Columbia River/Arrow Lakes Valley. Although it was one of the largest TFLs in the province, only one-third was estimated to be harvestable timber. The remaining land consists of alpine tundra, mountain peaks, glaciers, scrubland, lakes, and rivers. In the 1970's, the Province of BC acquired ownership of the licence. A new company, Canadian Cellulose Company Ltd. (Cancel), was formed and assigned TFL 23. Subsequent licensee and licensee name changes are noted below.

In 1992, TFL 23 was subdivided to create TFL 55 from the licence area north of Revelstoke, and a new TFL 23 to the south. Pope & Talbot Ltd. purchased the Castlegar sawmill and the TFL 23 assets from Westars southern operations the same year. Westar remained as the licence holder of TFL 55 until June 1993. Subsequently, TFL 55 was subdivided into a northern block that remained as TFL 55, and a southern block that became TFL 56. Evans Forest Products Ltd. became the new licensee of TFL 55 in June 1993. The new licence area covers 92,227 ha extending from the Mica Creek in the north and bounded by the Goldstream River to the south. The new TFL 56 is held by the Revelstoke Community Forest Corporation.

#### **LICENSEE**

Changes in licensee and name are noted below:

- 1955 Forest Management Licence 23 awarded to Celgar Development Company Ltd.
- 1958 Name change to Columbia Cellulose Company Ltd. (Celgar)
- 1973 Ownership acquired by BC provincial government. New company Canadian Cellulose Ltd. (Cancel) formed and assigned TFL 23 as new licensee.
- 1980 Name change to BC Timber Ltd. Assets became part of BRIC (British Columbia Investment Corporation).
- 1984 Name change to Westar Timber Ltd.
- 1992 Subdivision of TFL 23. Castlegar sawmill and southern assets acquired by Pope & Talbot Ltd., new licence holder of TFL 23. Westar Timber retained TFL 55, northern block of previous TFL 23.
- 1993 TFL 55 divided into northern and southern blocks. Evans Forest Products Limited acquired the northern block that remained TFL 55 (Selkirk Tree Farm Licence). The southern block became TFL 56 held by Revelstoke Community Forest Corporation.
- 2000 Name changed from Evans Forest Products Limited to Louisiana-Pacific Canada Engineered Wood Products Ltd. (known as L-P Engineered Wood Products Ltd.

#### **BOUNDARY REVISIONS**

Since Forest Management Licence 23 was issued in 1955, numerous parcels of crown land have been removed from the licence for other uses. Some of these uses include home sites, mineral claims, park reserves, lookout and cabin sites, TV and radio repeater sites, BC Hydro transmission line rights-of-way, various access roads and highway gravel pits, recreation sites, and water reservoirs.

These land deletions have diminished the size of TFL 23, and have resulted in the creation of TFL's 55 and 56.

- (1) Removal for the Columbia River hydro project. In 1955-56, crown land was removed around the perimeter of the Upper and Lower Arrow Lakes and the Columbia River for the creation of the High Arrow Reservoir. This was followed by a further withdrawal of lands in 1977-78 in the Upper Columbia Valley north of Revelstoke to create the Upper Columbia Reservoir.
- (2) In 1987, the Downie Block northwest of Revelstoke was removed from TFL 23 and added to the Revelstoke timber supply area. This reduced the TFL by approximately 244,868 ha.
- (3) In 1992, TFL 23 was subdivided and the TFL lands north of Revelstoke became the new TFL 55.
- (4) As TFL 55 is a relatively new licence, few boundary changes have occurred since it was subtracted from TFL 23. The most notable revision was in 1993 when the licence was divided into north and south blocks, the north one being TFL 55 and the south the newly created TFL 56. As a consequence TFL 55 went from 211,975 hectares to its present size of 92,227 hectares.
- (5) New TRIM mapping and definition of the height of land boundaries resulted in an increase in gross area to 92,700 hectares.

#### **FOREST MANAGEMENT**

Forest management in TFL 55 can be chronicled through the past management of TFL 23 until 1992 when the licence was subdivided. Because TFL 55 was only created in 1992, prior to then no year by year summary statistics are available except for the former TFL 23.

#### LOG TRANSPORTATION AND HARVESTING

The first logging on TFL 23 began in 1959 in order to supply pulpwood to Celgar Ltd.'s new pulpmill which was due to be commissioned in 1961. Initial logging operations occurred between Arrowhead and Revelstoke as well as the Fosthall area. The following year, logging commenced north of Revelstoke in Spikers Valley, and the Goldstream area that is now part of TFL 55. An attached article from the Castlegar News in 1964 describes the early years of operations on TFL 23.

During the early sixties, water transport was an important component of log transportation. A combined system of trucking, river drives on the Columbia River, and towing of bundle booms to Castlegar served to transport logs to the pulp and sawmills. River drives were also utilized to transport logs on the Canoe River.

With the announcement of the Columbia River hydro project, log transport by that river system would end. BC Hydro planned the construction of three dams during the mid 1960's to the late 1970's: the High Arrow dam, the Mica dam, and the Revelstoke dam. Because the river could no longer be used as a transportation corridor, new roads would have to be built.

A new highway from Nakusp to Galena Bay was opened in 1967. Clearing of the High Arrow Reservoir took place in 1967, and the High Arrow dam was completed and closed in 1968. The last river drive on the Upper Columbia River to Galena Bay was in 1963. River drives continued on the last open section of the Columbia River until 1978, when the Revelstoke dam was closed. Since 1978, a combination of truck haul to a lake dumpsite and then towing in bundle booms down the Arrow Lakes has served to transport logs to the Castlegar mill site. In addition, a system of main line forest roads was progressively constructed into all the main drainages and networked to link with the lake towing system.

A number of main roads access TFL 55. The French creek mainline was initially constructed by placer miners in the 1940s and later upgraded by Westar Timber in 1992. The Bigmouth road was constructed in the early 1970s and a crossing over the Bigmouth River constructed in 1986. Most construction since that time has been connected to these mainline roads or directly to Highway 23 North.

Until the late 1960's, selective harvesting of preferred species such as white pine, spruce, Douglasfir, larch, and cedar poles was a common system. The timber stands were regarded as defective and low in sawlog quality. Timber was logged by small crawler tractor. Early cutting patterns consisted of small clearcut blocks or strips, surrounded by leave blocks that acted as fire breaks and seed blocks. This gradually evolved into a clearcutting system using rubber-tired skidders, but crawler tractors were still used on steeper ground. Cable harvesting was first introduced in TFL 23 in 1974. A feller-buncher system followed in 1975. During the 1970's, the conventional interior ground-based skidding systems were established. The use of crawler tractors and FMC skidders on steeper ground (>50% slope) drew criticism due to the large amount of soil disturbance, sidecuts, and skidtrails involved in logging a cutblock. In the mid-1980's various cable yarding systems were introduced and are now a standard logging system in TFL 55.

Log utilization standards have also changed through the years. In 1970, a major shift from the intermediate utilization standard to close utilization (CU) occurred, lowering the compulsory minimum harvestable tree diameter from 22.5 cm to 17.5 cm dbh. During the 1980 economic recession in the forest industry, Westar obtained temporary exemption from this standard so that lower quality logs did not have to be utilized. However, by the mid 1980's, utilization rose back to the normal CU standard, and by the early 1990's was exceeding the minimum standard due to a buoyant market for pulplogs.

By the mid-1990s development and first pass logging of the Mica Creek drainage was completed and the road system was semi-permanently deactivated. In the late 1990s harvesting of first pass was also substantially completed up Norman Wood Creek. By 2000 most of the main drainage on the TFL had primary access constructed. New development commenced into McCulloch Creek and French Creek, while harvesting continued at high elevations of Cariboo Creek., and the Bigmouth.

#### **TIMBER INVENTORY**

The initial inventory of TFL 23 was undertaken in 1952 to gather data for the proposed licence application. Columbia Cellulose used aerial photographic surveys as the basis for identifying and mapping the forest cover types.

In 1973, Reid Collins and Associates, forestry consultants, of Vancouver completed a comprehensive timber inventory, using BC Forest Service's latest inventory techniques. Refinements were added during the next 20 years by identifying terrain slope classes and determining an operable cut line.

In 1989, Westar engaged Industrial Forestry Services Ltd. of Prince George to undertake a reinventory for the entire TFL 23. The re-inventory used new MoF systems to reclassify the forest cover of the younger age classes. The new inventory was entered into a computer database and is accessible through a GIS and was maintained by Timberline Forest Inventory Consultants until 1996.

In 1997 the Ministry of Forests undertook an inventory audit. The results concluded that the mature component is statistically reliable. Non-forest classification did not meet the new inventory standards. It also suggested that site index assignment of immature standards may not be accurate.

#### **PLANNING**

#### Licensee

Forest management in TFL 55 has been guided by seven successive management and working plans for TFL 23 until division of TFL 23 into TFL's 23, 55, and 56. Each MWP was written for a five-year period and approved by the provincial chief forester. Management and Working Plan 7 originally outlined management strategies and commitments for TFL 55 through to December 1993, after which it was extended through to the end of 1994.

## L-P Engineered Wood Products Ltd.

The Kootenay Boundary Land Use Plan (1994) and the associated Minister's Advisory Committee plan (2000) have directly influenced forest land allocation and resource planning strategies on TFL 55.

Harvesting for the first two management plan terms are summarized below:

TFL 55 L-P Harvesting Summary 1992 to 2000

MPlan #	Year	AAC (m³/yr)	Harvested (m³)	% AAC
1	1992	212,356	117,117	55%
	1993	100,542	106,205	106%
	1994	97,955	130,956	134%
	1995	97,955	130,956	134%
	1996	92,229	89,318	97%
Total		601,037	574,552	
2	1996	85,562	101,564	119%
	1997	97,022	57,226	59%
	1998	97,022	82,673	85%
	1999	96,816	116,670	121%
	2000	92,606	120,000	130%
Total		469,028	478.133	

AAC excludes SBFEP volume of 11,6753/yr

97-99 AAC includes undercut carry forward of <sup>3</sup>/yr

Cut control requirements were met for both periods (table 1). Volumes harvested during both planning terms met the commitments for problem forest types, steep slopes and partition cut performance (table 2).

# **Small Business Forest Enterprise Program**

This program was initiated in 1991 when an operating area was allocated at Stitt Creek. The timber was sold under a value-added timber sale licence to Downie Timber Ltd. Downie Timber carried out construction of access roads and carried out harvesting of blocks.

A large fire occurred in the Stitt on the north side of the Stitt River during the summer of 1998. Downie Timber recently completed the heli-log salvage of this area. A large amount of merchantable timber was recovered.

# **SMALL BUSINESS PROGRAM**

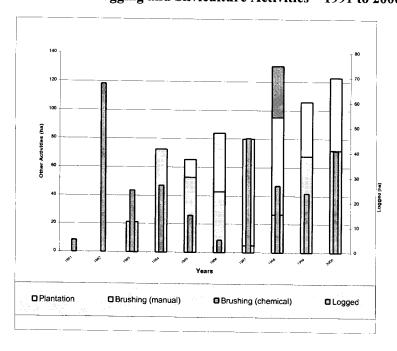
Harvesting completed during the two management plan terms is summarized below.

TFL 55 SBFEP Harvesting Summary 1992 to 2000

MPlan #	Year	AAC m <sup>3</sup>	Actual Cut m <sup>3</sup>
1	1992	13,000	10,557
	1993	11,675	7,515
	1994	11,675	4,279
	1995	11,675	8,493
Total		48,025	30,844
2	1996	11,675	2.460
	1997	11,675	16.831
	1998	11,675	10,272
	1999	11,881	9,934
	2000	16,091	23,961
Total		62,997	63,458

Reforestation activities are in tables 5 and 6.

TFL 55 SBFEP Logging and Silviculture Activities – 1991 to 2000



#### **FOREST PROTECTION**

Since TFL 23 was first awarded in 1955, the area has been relatively stable and protected from major catastrophic events such as wildfire or disease outbreaks. Forest fires, caused by lightning and operations, have occurred sporadically, but have been contained without major losses.

A review of fire history data reveals that the 10 largest fires which occurred during a 43 year period (1995-1997) accounted for 97% of the area burned. Further analysis revealed that the majority of the area was salvaged or if the fire occurred today would be salvaged as the areas in question are now well roaded. Annual losses for fire are estimated to be 540 m³/year.

#### SILVICULTURE

The first plantation on TFL 55 was in 1978 on CP 770. The planting program varied dramatically until 1986, as the program was concentrated in either the South or North each year. This resulted in little or no planting on TFL 55 several years between 1978 and 1986.

The first plantation was all B class spruce. Most plantations were single species until the early 90s, and the program has rapidly evolved until virtually all plantations are multi-species.

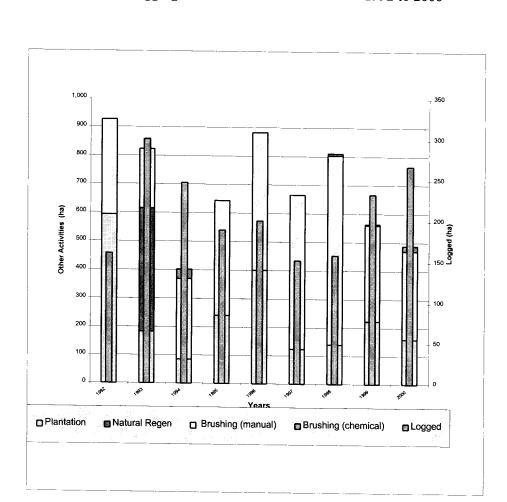
Genetically improved spruce was first planted on TFL 55 in 1992, and has become available to cover most elevations. Since 1996 almost all of the spruce now planted on the TFL is 'A' class seed orchard seed of improved genetic worth.

Efforts were made to re-establish white pine through Westar's white pine management program. This involved cooperation with the US Forest Service and the BC Forest Service in a tree improvement program and reforestation with genetically improved rust-resistant seedlings. Harvesting of rust-infected white pine trees also received priority.

The new Silviculture Regulations introduced in 1987 gave individual companies technical and financial responsibility for reforestation programs. The licensee at the time, Westar Timber Ltd., began placing more emphasis on practices that would improve the survival, establishment, and growth of plantations. Improvements began at the initial reforestation planning level. Detailed ecosystem-based pre-harvest silviculture prescriptions were now being prepared for every cutblock prior to harvesting. The Forest Renewal Initiative commenced in 1989 to restock and brush 12,000 hectares of backlog NSR, and had been largely completed by 1994.

In 1990, changes in site preparation strategy were implemented. The strategy called for less broadcast burning and planting over a larger area. Mechanical site preparation evolved from use of crawler tractors with brush blades to mounding with backhoes.

The nutrient-rich valley bottom sites have proven difficult to re-establish with conifers due to dense regrowth of brush species after logging. It was recognized that stand-tending brush control needed a higher priority. Various hand brush control techniques were tested in this period. From 1990 to 1993, up to 4,000 sheep were used to graze brush on plantations as well as browse herbaceous brush in other areas prior to planting.



TFL 55 L-P Logging and Silviculture Activities -- 1992 to 2000

Table 1: TFL 55 L-P Harvest by Cut Control Period (m<sup>3</sup>)

Period	Year	Allowable Annual Cut Dec 31 (m³)	Adjusted Undercut (m³)	Allowable Annual Rate of Cut (m³)	Volume Harvested (m³)	% AAC
Second	1992			212,356	117,117	55%
	1993			100,542	106,205	106%
	1994			97,955	130,956	134%
	1995			92,229	89,318	97%
	1996			85,562	101,564	119%
Total				588,644	545,160	93%
Third	1997	88,325	8,697	97,022	F7 220	<b>500</b> /
	1998	88,325	8,697	97,022 97,022	57,226	59%
	1999	88,119	8,697	96,816	82,673 116,670	85% 121%
	2000	83,909	8,697	92,606	120,000	130%
	2001	83,909	8,696	92,605	120,000	130%
Total		432,587	43,484	476,071		

AAC excludes SBFEP 11,675 m<sup>3</sup>/yr

**Table 2: Summary of Harvesting Commitments** 

TFL 55 L-P Problem Forest Types\*

Activity	Units		M F	# <b>2</b> (1996-	2000)		Total
		1996	1997	1998	1999	2000	Total
TFL Volume Logged	m³	101,564	57,226	82,673	116,670	120,000	478,133
Problem Forest Types Volume Logged	m³	45,196	35,881	40,344	30,684	37,759	189,864
TFL Area Logged	ha	201	152	159	233	268	1,013
Planned Problem Forest Types	ha	59	59	59	59	59	295
Problem Forest Types Area Logged	ha	89	95	83	117	93	477
% Logged of Planned	%	151.6%	161.5%	140.1%	197.9%	157.6%	161.7%
% Problem Forest Types	%	44.5%	62.7%	52.0%	50.1%	34.7%	48.8%

# **Steep Slope Harvest\***

Activity	Units		MP	# <b>2</b> (1996-:	2000)		Total
		1996	1997	1998	1999	2000	Total
TFL Volume Logged	m³	101,564	57,226	82,673	116,670	120,000	478,133
Steep Slope Volume Logged	m³	42,657	15,451	28,357	47,601	65,138	194,791
Requirement	%	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%
Minimum Target Volume	m <sup>3</sup>	17,266	9,728	14,054	19,834	20,400	81,283
% Logged of Target	%	247.1%	158.8%	201.8%	240.0%	319.3%	233.4%
% Steep Slope of TFL Volume	%	42.0%	27.0%	34.3%	40.8%	59.6%	40.7%
TFL Area Logged	ha	201	152	159	233	268	1,013

## **Partition Cut Performance\***

Units		M F	#2 (1996-	2000)		Total
	1996	1997	1998	1999	2000	Total
m³	101,564	57,226	82,673	116,670	120,000	478,133
m <sup>3</sup>	6,666	10,000	10,000	10,000	10,000	46,666
m <sup>3</sup>	16,760	32,356	27,104	19,954	12,912	109,086
%	251.4%	323.6%	271.0%	199.5%	129.1%	233.8%
%	16.5%	56.5%	32.8%	17.1%	10.8%	26.7%
	m <sup>3</sup> m <sup>3</sup> m <sup>3</sup> %	m³ 101,564 m³ 6,666 m³ 16,760 % 251.4%	m³         1996         1997           m³         101,564         57,226           m³         6,666         10,000           m³         16,760         32,356           %         251.4%         323.6%	1996     1997     1998       m³     101,564     57,226     82,673       m³     6,666     10,000     10,000       m³     16,760     32,356     27,104       %     251.4%     323.6%     271.0%	1996     1997     1998     1999       m³     101,564     57,226     82,673     116,670       m³     6,666     10,000     10,000     10,000       m³     16,760     32,356     27,104     19,954       %     251.4%     323.6%     271.0%     199.5%	m³         1996         1997         1998         1999         2000           m³         101,564         57,226         82,673         116,670         120,000           m³         6,666         10,000         10,000         10,000         10,000           m³         16,760         32,356         27,104         19,954         12,912           %         251.4%         323.6%         271.0%         199.5%         129.1%

<sup>\*</sup> Information based on TFL 55 Annual Reports

Table 3: TFL 55 L-P Logging & Silviculture Activities 1992 to 2000

Activity	şic		M P # 1	# 1				M P #2			177
		1992	1993	1994	1995	1996	1997	1998	1999	2000	lotal
Volume Logged	m <sub>3</sub>	117,117	106,205	130,956	89,318	101,564	57,226	82,672	116,670	120,000	921,728
Logged Vol/ha	vol/ha	730	353	530	473	206	376	521	200	448	483
Pogged	ha	160	301	247	189	201	152	159	233	268	1,910
Natural Regen	ha		431								431
Broadcast Burned	ha	27	31	27	-				29		153
Site Preparation	ha	64	41	84	6	21					192
Plantation	ha	593	184	85	242	401	123	140	224	160	2,153
No. Seedlings	s,000	746	249	137	306	575	204	186	310	198	2,910
Brushing (manual)	ha	334	209	284	401	482	541	664	336	310	3,561
Brushing (chemical)	ha			34				7	4	19	64
Survey (regen)	ha	435	1,405	691	808	1,613	682	1,241	488	599	7,962
Survey (survival)	ha	764	207	179	264	355	425	152	166	635	3,147
Survey (free growing)	ha	289	6	231	161	42	415	574	1,342	263	3,326
Ratio Area Treated / Harvested	sted	6.35	1.46	2.08	3.46	4.51	4.36	5.11	2.71	1.82	3.21

\* MP #1 = MP #7 of TFL23 Natural regen for 1993 = FRI (Forest Renewal Initiative area)

Table 4: L-P Species Planted 1992 to 2000

		%	25.6	. w	4.7	10.5	ς σ	2.2	5.4	10.7	6.8	100.0
Total	<u> </u>	# plntd	745 770	249,000	136.473	305 750	574 790	204.230	185,704	310,200	198,034	2,909,951
		%			,					28	ì	0.3
	Hm	# plntd								8.700		8,700
	L	%		8.8						9.7	3.7	2.0
	19	# plntd		21,900						30.000	7,395	59,295
	HW	%							2.7			0.2
٥	E	# plintd							4.960			4,960
NTE	ΡW	%		1.3					3.8	2.8	8.0	1.2
P L /	_	# plntd		3,200					7,140	8,700	15,800	34,840
SPECIES PLANTED	Š	%		9.7	8.2	1.8	18.5	30.0	30.5	6.6	26.8	11.8
SPE	<u>ا</u>	# plntd		18,900	11,160	5,595	106,280	61,325	56,599	30,600	53,016	343,475
		%	2.1	5.8	15.5	2.0	21.2	6.4	9.7	6.1	4.5	8.2
	Fai	# plntd	15,765	14,400	21,129	6,060	122,010	13,060	18,070	18,900	000'6	238,394
	Sx	%	97.9	76.5	76.3	96.2	60.3	63.6	53.3	8.89	57.0	76.3
	S	# plntd	730,005	190,600	104,184	294,095	346,500	129,845	98,935	213,300	112,823	2,220,287
Year	Planted		1992	1993	1994	1995	1996	1997	1998	1999	2000	Total

Table 5: TFL 55 SBFEP Logging & Silviculture Activities 1991 to 1999

Activity	stinits			MP # 1*					MP#2			Total
		1991	1991 1992 1993 1994 1995	1993	1994	1995	1996	1996 1997	1998	1999	2000	- Ola
Volume Logged	m³	1,242	10,557 7,515	7,515	4,279	8,493	2,460 16,831	16,831	10,272	9,934	23,961	95,544
Logged Vol/ha	vol/ha	253	156	301	158	266	492	366	380	407	584	338
Peggod	ha	2	89	25	27	15	5	46	27	24	41	283
Broadcast Burned	ha		12	20		က				∞	80	101
Site Preparation	ha								34			34
Plantation	ha			21	73	53	43	2	27	89	72	362
No. Seedlings	s,000			27,000	94,574	56,115	52,240	1,860	26,990	129,775	96,520	485,074
Brushing (manual)	ha					12	41	75	89	38	51	285
Brushing (chemical)	ha								36			36
Survey (regen)	ha				21	41	30	64	06	20	42	308
Survey (survial)	ha				64	122	137	123	89	165	174	874
Ratio Area Treated / Harvested	rvested		0.18	3.65	2.69	4.56	16.80 1.74 4.77	1.74	4.77	4.75	3.20	2.77

<sup>\*</sup> MP #1 = MP #7 of TFL23

Table 6: TFL 55 SBFEP Species Planted 1993 to 1999

Voar					<b>\\ \</b>	SPECIE	SPECIES PLANTED	<b>E</b>						Total	12
Planted	SS		Fdi		S C		Ρw		HW			Others		2	
5	# plntd	%	# plntd	%	# plntd	%	# plntd	%	# pintd	%	species	# plntd	%	# plntd	%
1993	27,000	100.0												27,000	5.9
1994	69,254	68.7	3,195	က	20,235	20.1	1,530	1.5	099'9	9.9				100,874	22.1
1995	45,480	88.8	1,020	7	2,070	4.0	465	6.0			B	2,200	4.3	51,235	11.2
1996	36,850	77.2	9,540	20			1,350	2.8						47,740	10.5
1997	540	29.0	009	32	720	38.7								1,860	0.4
1998	8,550	8.09	4,980	35							ζ	540	3.8	14,070	3.1
1999	45,180	34.8	620	-	36,140	27.8	920	0.7	006'9	5.3	ā	40,015	30.8	129,775	28.5
2000	29,090	7.07	4,970	9	11,480	13.7	460	9.0	096	1.	丽	009'9	7.9	83,560	18.3
Total	291,944	0.49	24,925	9	70,645	15.5	4,725	1.0	14,520	3.2		49,355	10.8	456,114	100.0