

LP Canada Ltd.

Swan Valley Forest Resources Division



STANDARD OPERATING GUIDELINE

FOREST OPERATIONS

Revised: June 20th, 2016

Contents

1.0	GENERAL OVERVIEW	3
1.1	SUSTAINABLE FOREST MANAGEMENT (SFM)	3
1.2	OBJECTIVES OF THE SPECIFICATIONS & SOG’S	4
2.0	OPERATIONS	5
2.1	GENERAL	5
2.1.1	<i>Pre-Work Meeting</i>	5
2.1.2	<i>Operations Guidelines</i>	5
3.0	HARVESTING OPERATIONS	10
3.1	UTILIZATION STANDARDS	10
3.1.1	<i>Hardwood</i>	10
3.1.2	<i>Non-merchantable trees</i>	10
3.1.3	<i>Softwood</i>	11
3.1.4	<i>Chipper Wood</i>	11
4.0	FINAL CLEARANCE	11
5.0	FIRE FIGHTING PROVISIONS	11
6.0	DEBRIS DISPERSAL	12
7.0	SLASH-FREE FIRE BREAK ZONE	12

STANDARD OPERATING GUIDELINES (SOG's)

1.0 General Overview

LP Canada Ltd. (LPC) is committed to working closely with surrounding communities that may be affected by forest management operations and to ensuring orderly development of the forest resource to accommodate all forest values.

Originally LPC included a group of Standard Operating Procedures (SOP's) in Section 9 of the 10 Year Forest Management Plan (FMP). With the subsequent development of an Environmental Management System (EMS) for the Swan Valley Operations, it is appropriate to adapt the original SOP's into a complimentary set of Standard Operating Guidelines (SOG's) within the EMS.

LP Canada Ltd. is committed to the implementation of ecosystem based management within FML #3 and is presently developing the required infrastructure. This includes the development of an ecosystem based resource inventory, adjustments to planning and operational practices and the research necessary to achieve a better understanding of the ecosystems present and the processes occurring within them.

1.1 Sustainable Forest Management (SFM)

The Canadian Council of Forest Ministers (CCFM) began a process in 1993 to define, measure and report on the forest values Canadians want to sustain and enhance. The CCFM, along with technical and scientific advisors to lend support, consulted with officials and scientists of federal, provincial and territorial governments, experts from industry, the academic community, non-governmental organizations, the Aboriginal community and various other interest groups. The results of these consultations were documented in *Defining Sustainable Forest Management: A Canadian Approach to Criteria and Indicators* (1995). The development of these criteria and indicators (C & I) was an important step in meeting Canada's domestic commitments on sustainable forest management.

The purpose of the Criteria and Indicators are to provide a common understanding and scientific definition of sustainable forest management in Canada. Together they form a framework for describing and measuring the state of our forests, forest management practices, values and progress towards sustainability. This information is then used to develop forest management policy and to determine areas where research is required to fill information gaps and develop new technologies. The C & I approach not only recognizes that forests are ecosystems but also realizes forests provide a wide range of social, economic and environmental benefits to Canadians and realizes the necessity of public education and participation in the process of sustainable forest management.

There are six criteria relating to sustainable forest management. Each criterion has been broken down into 27 elements to yield 83 indicators to help track progress in achieving sustainable development and social, economic and environmental objectives. The six criterion of SFM are:

- Conservation of biological diversity.
- Maintenance and enhancement of forest ecosystem condition and productivity.
- Conservation of soil and water resources.
- Forest ecosystem contributions to global ecological cycles.
- Multiple benefits of forests to society.
- Accepting society's responsibility for sustainable development.

LPC is striving towards sustainable forest management, as defined by the above criterion, in its forest management practices. These SOG's are a partial fulfillment of SFM. The Stakeholders Advisory Committee plays an integral role in the public participation, contribution of societal values and knowledge dissemination component of SFM. Pre-harvest surveys, permanent sample plots, ecological monitoring and research programs contribute to SFM by providing baseline data, site specific ecological information and enable LPC to identify areas where more information is required.

1.2 Objectives of the Specifications & SOG's

The EMS and SOGs provide a framework for the company to achieve and maintain a particular standard, as set out in these documents as well as the approved 10 Year FMP, Environment License 2191E and the FML #3 Agreement.

- The government's objectives will be met by the forest management planning process described in the EMS and the SOGs.
- Provide direction to LPC for planning, implementing and monitoring timber harvest operations on the forest management area.
- Outline the planning and operating standards of Ecosystem Based Management for timber harvest, road development, reclamation and integration of timber harvesting with other forest uses.
- Describe the planning and submission requirements for timber harvest operations.
- The EMS and SOGs are dynamic enough to provide sufficient flexibility to accommodate most site conditions. The principles in the EMS and SOGs are considered to be the normal expectations for harvest operations.
- The EMS and the SOGs are expected to be applied using sound judgment based on practical experience and technical competence.
- The EMS and SOGs provide documentation, structure and accountability associated with a particular activity.

Ecosystem based management refers to the development of management systems that attempt to simulate ecological processes with the goal of maintaining a satisfactory level of diversity in natural landscapes and their pattern of distribution in order to ensure the sustainability of forest ecosystems and forest ecosystem processes (Canadian Council of Forest Ministers, 1997).

The SOGs are unique to FML #3. They have been developed with specific reference and compliance to Federal and Provincial legislation, regulations and guidelines, and the requirements and conditions of the FML #3 agreement signed in September 1994, with the Province of Manitoba. They are also consistent with the requirements as set out in Environment Act License 2191E issued to LPC in 1996.

Many of the provisions, options and approaches in these SOGs may be considered for other jurisdictions, but they cannot be considered as a precedent for those jurisdictions. These provisions are based on concerns and conditions specifically related to operations within FML #3. They take into account potential future uses. They are an interrelated set of provisions, and not stand-alone solutions.

The EMS and SOGs ensure LPC meets or exceeds government regulations. They cannot, however, be considered a final position. Rather, they are part of a dynamic plan that will adapt or adjust as determined by legislation or societal attitudes, interests and concerns. As the SAC will assist LPC throughout the years in operational planning, ongoing review of the EMS and SOGs will be part of LPC's adaptive management planning.

2.0 Operations

2.1 General

2.1.1 Pre-Work Meeting

Prior to beginning operations on any block, LPC Operations staff conduct a pre work meeting with the contractor to discuss all pertinent information relating to the approved prescription for that block. It is important the contractor clearly understand the Company's stand level management objectives. A Harvesting & Roads Pre-Work Form (Figure 1) will be used to include:

- Cutblock Prescription
- Road development information
- Road Deactivation information
- Crossing information
- Permit conditions

2.1.2 Operations Guidelines

The following guidelines have general applicability to all harvesting, road construction and clearing operations within FML #3:

- Minor harvest plan modifications within approved blocks will be permitted in the field when agreed on by both LPC supervisory staff and the supervising Natural Resource Officer.
- Alterations which have an impact on the approved block boundary, road, stream or wildlife buffers and reserved or visually sensitive areas will require review and approval by LPC planning/wildlife/silviculture staff where required, followed by written approval from the IRMT. These changes will be documented on the **Block Amendment Form** (Figure 2)

- In the event that an unknown or unmapped watercourse is found during forest management operations it will be identified on the block map and given appropriate protection measures.
- As per government regulations, all logging debris, including that from landing, road and skid trail development, will be contained within the cutblock boundaries, and not pushed into standing timber. Unless otherwise specified in the work permit, tops and limbs will be spread over the cutover.
- Operations will be conducted to minimize soil disturbance, erosion and sedimentation into watercourses. Bared surfaces and unstable fill material will be stabilized and re-vegetated concurrent with operations if they are directly associated with a stream, and within one year in other situations. Details and specifics can be reviewed in Table 1 below.



Harvesting & Roads Prewrite Form

Section 1 – General Information					
Date:	Activity:	Contractor Name:			
Block:	Road#:	Contractor Supervisor Designate:			
		LP Supervisor Designate:			
Section 2 – Specific Information to be Reviewed					
The following have been RECIEVED & DISCUSSED:			Yes	N/A	
Annual Operating Plan Details			General		
Cut-block Prescription <ul style="list-style-type: none"> • Harvest / Silviculture system • Slash abatement • Buffer information • Line of site mitigation • Wildlife tree / structure retention • Harvest comments / issues • In-block roads information 	<input type="checkbox"/>	<input type="checkbox"/>	Block boundaries, stream crossing locations, and other resource features identified on maps		
			Work Permit Effective Date: _____ Expiry Date: _____		
			Layout complete		
			Has contractor signed contract		
Road Development Information <ul style="list-style-type: none"> • ROW width • Road surface width • Additional road development comments 	<input type="checkbox"/>	<input type="checkbox"/>	Contractor has discussed applicable WI with employees		
			Applicable erosion control SOG's discussed		
Road Deactivation Information <ul style="list-style-type: none"> • Road closure responsibility • Type of road closure • Additional road closure comments 	<input type="checkbox"/>	<input type="checkbox"/>	Inspections - Interim & Final Inspections to be completed and additional inspections may be completed as required		
			Work Permit Conditions		
Water Crossing Installation and Deactivation Info <ul style="list-style-type: none"> • Proposed crossing structure • Lifespan of crossing • Installation and deactivation comments 	<input type="checkbox"/>	<input type="checkbox"/>			
Section 3 – Comments / Instructions					
I acknowledge that I understand the plan or plans, including any special conditions conveyed to me in this prework.					
Contractor Signature: _____ LP Supervisor Signature: _____					

Figure 1. Harvesting and Roads Prewrite Form



**FOREST OPERATIONS AMENDMENT
To Approved AOP**

WORK PERMIT _____ OPERATING AREA: _____

CUTBLOCK NUMBER: _____ DATE: _____

CHECK APPROPRIATE MODIFICATION(S): (MINOR on left side /MAJOR on right side)

- | | |
|---|---|
| <input type="checkbox"/> Minor Amendment (District Approved) | <input type="checkbox"/> Major Amendment (Region Approval) |
| <input type="checkbox"/> CutBlock Boundary Modifications (<50 metres) | <input type="checkbox"/> Buffers/Leave Area Modifications |
| <input type="checkbox"/> Inblock Road Location Change | <input type="checkbox"/> Change to Primary Access |
| <input type="checkbox"/> Change to Inblock Leave Structure | <input type="checkbox"/> Changing to Renewal Prescription |
| <input type="checkbox"/> Addition of Incidental Volumes With Explanation/QH Allocation | <input type="checkbox"/> Stream Crossing Changes |
| <input type="checkbox"/> Changes to Debris Disposal | <input type="checkbox"/> Operating Area Access or Access Control Changes |
| <input type="checkbox"/> Other, Specify _____ | <input type="checkbox"/> Adding Prescriptions (Specify) |

NOTE: See back of form for list of amendments from Forestry Branch Circular C-5 Forest Operations Amendment.

Details of Amendment: _____

Company Supervisor

Area Planner

Mb Conservation Supervising Officer

IRMT (buffer modifications or potential major amendment)

NOTE: Forward copy of ALL amendments to REGIONAL FORESTER

Figure 2. Block Amendment Form

Standards and guidelines for operating beside watercourses LP Canada Ltd.

Table 1

Watercourse Classification	Watercourse Protective Buffers	Roads, Landings, Bared Areas	Tree Felling	Field Modification
Large Permanent	<ul style="list-style-type: none"> no disturbance or removal of merchantable timber within 60m of the high-water mark except where specifically approved through the AOP approval procedures 	<ul style="list-style-type: none"> not permitted within 60m of the high-water mark within 60 to 100m of the high-water mark may be permitted with written approval of a Natural Resources Officer (NRO) or the IRMT 	<ul style="list-style-type: none"> trees within these areas to be felled away from water remove slash or debris as it accumulates 	<ul style="list-style-type: none"> where removal of timber within 60m is approved, no machinery normally operates within 20m of the high-water mark timber within 20m to be removed by winching or other means so the machine remains outside a 20m strip. If possible, topographical breaks used as protective strip boundaries
Small Permanent	<ul style="list-style-type: none"> no disturbance or removal of merchantable timber within 60m of the high-water mark except where specifically approved through the AOP approval procedures 	<ul style="list-style-type: none"> not permitted within 30m of the high-water in the area 30-100m of the high-water mark may be permitted with written approval of an NRO or the IRMT 	<ul style="list-style-type: none"> trees within these areas to be felled away from water remove slash or debris as it accumulates 	<ul style="list-style-type: none"> where removal of timber within 30m is approved, no machinery operates within 20m of the high-water mark timber within 20m to be removed by winching or other means so the machine remains outside a 20m strip if possible, topographical breaks should be used as protection strip boundaries
Intermittent/ Ephemeral	<ul style="list-style-type: none"> buffer of brush and lesser vegetation to be undisturbed along the channel width of buffer varies according to soils, topography, water source areas and fisheries values treed buffer not required unless specifically requested for sensitive or complex sites 	<ul style="list-style-type: none"> not permitted within 30m of the high-water mark, unless approved by NRO or the IRMT 	<ul style="list-style-type: none"> trees within these areas to be felled away from water remove slash or debris as it accumulates 	<ul style="list-style-type: none"> heavy equipment operates only within 20m during frozen or dry periods no random skidding through channel - crossing must be planned with adequate structures crossing removed on completion of operations where fish and spawning movements have been identified, special crossings that will not obstruct fish passage or create stream silting should be required
Lakes, little or no recreation, waterfowl or sport fishing potential	<ul style="list-style-type: none"> no disturbance or removal of merchantable timber within 60m of the high-water mark except where specifically approved through the AOP approval procedures 	<ul style="list-style-type: none"> not permitted within 100m of the high-water mark without written approval of an NRO or the IRMT 	<ul style="list-style-type: none"> trees within these areas to be felled away from water remove slash or debris as it accumulates 	<ul style="list-style-type: none"> if timber removal is approved within the buffer, no machinery to operate within 20m of the high-water mark unless in winter conditions
Lakes, recreational waterfowl or sport fishing potential	<ul style="list-style-type: none"> no disturbance or removal of merchantable timber within 60m of the high-water mark except where specifically approved through the AOP approval procedures 	<ul style="list-style-type: none"> not permitted within 100m of the high water mark without written approval of an NRO or the IRMT 	<ul style="list-style-type: none"> trees within these areas to be felled away from the water remove slash or debris as it accumulates 	<ul style="list-style-type: none"> if timber removal approved within the buffer, no machine to operate within 20m of the high-water mark unless in winter conditions aesthetics to be considered in planning and conducting harvesting adjacent to lakes with recreation potential timber harvesting within reserve areas subject to specific operating conditions (i.e. selective cutting winter operations)
Water Source Areas/Springs	<ul style="list-style-type: none"> no disturbance or removal of merchantable timber within 60m of the high-water mark except where specifically approved through the AOP approval procedures 	<ul style="list-style-type: none"> construction not permitted unless approved in the AOP no log decks permitted 	<ul style="list-style-type: none"> heavy machinery not permitted in areas timber may be harvested if minimal disturbance of organic soils and lesser vegetation on unstable areas subject to blowdown, merchantable trees should be carefully harvested to minimize disturbance to roots and duff layers 	<ul style="list-style-type: none"> road construction, timber harvest, reforestation and reclamation done with equipment that minimizes disturbing organic soil layers heavy equipment not permitted at all
Beaver Floods	<ul style="list-style-type: none"> none unless specific wildlife habitat 	<ul style="list-style-type: none"> not permitted within 30m of water's edge unless approved by NRO or the IRMT 	<ul style="list-style-type: none"> trees to be felled away from water body any slash or debris in water to be removed 	<ul style="list-style-type: none"> no machine to operate within 30m of the water's edge unless approved by NRO, IRMT or AOP

3.0 Harvesting Operations

3.1 Utilization Standards

LPC utilizes timber that meets the specifications identified in Timber Harvesting Practices for Forestry Operations in Manitoba developed by Manitoba Natural Resources, Forestry Branch, or that is identified in the LPC Independent Contractor Agreement and other logging contracts.

- All live, dead, downed or broken and defective trees whose merchantable content make up 50 percent or more of the tree and meet the utilization and wood quality standards of LPC will be utilized.
- LPC harvests and removes deciduous and incidental mature coniferous timber from its cutblocks during the same harvesting operations according to the requirements in the FML agreement, unless required for wildlife habitat or seed trees as prescribed in the AOP.
- In cooperation with coniferous operators, LPC utilizes merchantable deciduous timber harvested during coniferous operations in FML #3. Such utilization assists with reforestation commitments required of the coniferous operators, unless required for wildlife habitat as determined jointly by the Province of Manitoba and LPC.

3.1.1 Hardwood

Trembling Aspen/ Balsam Poplar

- The siding mill requires fresh cut roundwood logs for optimum performance. To ensure all roundwood delivered are fresh cut, LPC pays harvesting contractors for timber on delivery to the mill log yard. This encourages contractors to deliver the timber as soon as possible after harvest, virtually eliminating the need for log storage in the field.
- On occasion, interim roundwood storage areas may be required when wood has to be forwarded to high ground immediately prior to spring breakup. Such storage areas will be short-term as the timber will be moved as soon as access conditions improve and highway load limits are removed.
- If and when roundwood log storage sites are required on Crown land, LPC will notify the Province of Manitoba with site specific information.

3.1.2 Non-merchantable trees

- Residual non-merchantable trees, i.e. elm, maple, are left standing where possible. If felled in the course of logging operations, they are skidded to roadside. This is undertaken in pre-determined blocks where it is highly possible that it will be utilized by fuelwood users. Where it is not likely to be salvaged for fuelwood, the trees will

be left at the stump. This is better for the site ecologically and more aesthetically pleasing.

3.1.3 Softwood

- Softwood logs may be stored at various sites throughout FML #3.
- Incidental softwoods are harvested along with the hardwoods in LPC's operations. Softwood volumes harvested are purchased by a party as identified on the harvest permit such as Roblin Forest Products and Spruce Products Limited, or possibly one of the local softwood quota holders.
- Intermediate log storage sites may be required from time to time before delivery of softwood timber is finally made to the appropriate facilities. Use of these log storage and chipper processing sites is subject to the Province of Manitoba approval following formal site specific application

3.1.4 Chipper Wood

- Chipper wood sites serve as holding areas for timber as well as processing sites for a portable softwood chipper.
- Chipper debris will be either piled and burned at roadside or spread on to the road network at a mean depth of 10 cm (4 inches)
- Spreading of debris onto specific roads may be denied for the following reasons:
 - (i) access is required for forest renewal activities
 - (ii) the road pre-existed harvesting activities
 - (iii) the road may be required for future wood supply extraction from the area
- Use of these log storage and chipper processing sites is subject to the Province of Manitoba approval following formal site specific application

4.0 Final Clearance

LPC will complete slash abatement, cleanup and any other reclamation work required as a direct result of its operations before moving operations to another operating area. This ensures a progressive completion to harvesting operations. LPC will obtain a final harvest block inspection from the Province of Manitoba.

5.0 Fire Fighting Provisions

In compliance with the Forest Act, the Fire Prevention Act and Regulations and in accordance with all agreements, plans and operating and work permits pertaining to the

operation, firefighting equipment will be on site and in serviceable condition during active operating seasons, relative to the size and scope of the operation.

6.0 Debris Dispersal

Accumulated slash from harvesting operations will be minimized for the following reasons:

- Reduce fire hazard.
- Accommodate silviculture and wildlife objectives.
- Restore site productivity.
- Lessen any negative visual impact.

To minimize any effects related to debris accumulation, the following guidelines will be applied:

- Harvested areas subject to wind or water erosion will have slash evenly distributed to prevent soil erosion.
- Before construction, all landings are to be harvested to reduce debris accumulation.
- Slash and debris burning will not take place during the fire season (April 1 to November 15) unless approved on a work permit.
- Small debris piles may be left on cutblocks for rodent habitat.

7.0 Slash-Free Fire Break Zone

As per government guideline, and where possible, a slash-free firebreak zone will be maintained within five meters of uncut stands and all exclusion zones. A measure for determining acceptable levels of accumulated debris will be the levels on the adjacent undisturbed forest floor. All felled trees are to be removed from this zone and processed, thereby minimizing accumulation of litter.