

## **SOP Title: FO – SOP 21 Planting and Seedlots**

### **Purpose:**

To describe the steps to be taken to adequately inspect an active planting activity for the purpose of Forest Operations Monitoring (FOM) and a planting activity/records inspection for the purpose of Silviculture / ARIS Monitoring (SAM).

### **Active Reforestation Inspections (FOM):**

As part of the minimum requirements of the Forest Operations Monitoring Program, **at least one** inspection per scheduled silviculture activity (site preparation, planting, establishment surveys, performance surveys and stand tending) must be completed for each company during active operations per timber year.

Communication with the company at the start of their silviculture season is critical to determine a timing window for these inspections. The intent is to have the inspecting officer in the opening, while the planting crew is working, so that the planting boxes can be examined to verify that the appropriate seedlot\* is being used.

\*Openings where genetically improved stock (from Stream 2 seed) is being deployed should be considered a higher priority for an inspection.

### **Procedure:**

- 1) Procedure for identifying stream 2 seedlots is 1) office planning (the first steps), 2) prepare a field package, and 3) verify activity in the field.
- 2) Determine the dates (through communications with the company's silviculture representative) and locations (openings) of active planting operations.
- 3) Verify that the activity is approved in the Silviculture Schedule of the appropriate Annual Operating Plan (AOP) including amendments thereto. Also review any applicable Silviculture Strategies Tables in the Forest Management Plan.
- 4) Complete a field visit while the planting crew is actively planting the opening. Ensure that the approved seedlings are being planted as per the approved plan (AOP) or applicable Silviculture Strategy Table (DFMP). Examine the seedling boxes and collect the seedlot information for verification that the proper seedlot was planted in the appropriate seed zone. (Note: although we are not assessing the quality of the plant, observations should be brought to the attention of the Company's Silviculture Forester).
- 5) If the seedlot is Stream 2 seed, verify if there is an applicable AAC% uplift and that the opening has been specifically identified in the approved plan (AOP). Some key ways to identify Stream 2 Seed Withdrawals:
  - a. The seedlot number does not have a legal location but should include "SO" that designates it came from a seed orchard
  - b. There will be a breeding region rather than a seed zone.
  - c. Inventory number control number is a number in the 8000s.

Species: SW - White Spruce

Inv #	Seedlot Number	Sublot	PT	SDLG Limit	Elevation From	To	Seed Zone	Breeding Region	Germination % Unstrat	Strat	Last Test Date	Balance (kg)
3844	BR 16-64-17-5-2003 SW	BULK	Y		938	938	CM3.4		55	86	9/29/2003	48.2430
3844	BR 16-64-17-5-2003 SW	PRT	Y		938	938	CM3.4		70	97	12/14/2004	4.1470
3844	BR 16-64-17-5-2003 SW	SLFN	Y		938	938	CM3.4		68	94	9/7/2005	2.5090
8050	BR IG291 SO 2003/2007 SW		N/A					D	57	83	12/7/2007	1.1040
8152	BR IG333 SO 2006/07 SW		N/A					I	93	91	1/15/2008	0.3030
8082	BR IG291 SO 2007 SW		N/A					D	83	84	10/29/2009	1.8900
8099	BR IG291 SO-2010 SW		N/A					D	89	84	11/5/2010	2.2180
8183	BR IG291 SO 2013 SW Pending		N/A					D	54	92	11/25/2013	15.0600
5739	BR 31-51-13-5-2013 SW		Y		960	1020	LF1.5					27.9800

6) Note any variances or the occurrence of environmental damage on the FOM inspection form.

The following should be considered during the field inspection:

- Were the approved species of seedling planted?
  - Was Stream 2 (genetically improved) seed specifically identified in AOP?
  - Is the activity being conducted in accordance with the operating ground rules? Is there any environmental damage as a result of the activity? (e.g. damage to a watercourse by inappropriate ATV's used to access the block).
  - Are the planting boxes and plastic wrap being disposed of in an appropriate manner as per the specific OGR's? (Plastic from planting boxes is to be hauled out upon completion of planting operations and delivered to an appropriate facility. Boxes, not wrap may be burned on site, where ground access no longer exists. Boxes left for burning on site later must be secured in piles or tied bundles)
- 7) Take photographs to attach to the completed inspection report (suggest a photograph of the planting box label and of each species planted).
  - 8) Back at the office determine which seed zone the block exists in. Using the SIMS database, verify that the opening's seed zone (e.g. LF2.1) was planted with stock from a seedlot sharing the same seed zone (e.g. LF 2.1). Refer to Appendix 1.0 to this SOP; *Instructions for accessing the SIMS Seed Inventory Report*.
  - 9) Should the seedlot be from a seed zone (e.g. LF 2.1) that is different from that of the opening (e.g. UF 1.3), check to see that the company obtained a variance for this specific opening. Refer to the Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual; *Appendix 13. Decision tree for Transfer of Stream 1 Material Outside Seed zone of Origin*).
  - 10) Complete the inspection form in GLIMPS and follow up with the FOMP team lead should an investigation be required. Variances are captured in an action plan completed by the FOMP Team Lead – see also **SOP Action Plan Preparation** for appropriate follow-up procedures.

Examples of FOM variances include but are not limited to:

- The species being planted are different from the ones approved in the appropriate AOP or applicable Forest Management Plan Silviculture Strategy Table
- Activity is not completed in accordance with legislation or OGR's.
- The planting activity has resulted in environmental damage. (i.e. rutting, watercourse damage)

- As per the Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual (Appendix 13), a variance was required, but was not obtained by the company.

### **Silviculture ARIS monitoring (SAM):**

The SAM portion of the program is designed to ensure that the activity completed in the field corresponds to the company record (Company records vs. ARIS) and to the ARIS (ARIS vs. Field) record for the opening, and to verify that the activity was approved in the appropriate plan (Plan vs. ARIS).

Each year, Forest Management Branch (FMB) will supply a snapshot of all the previous year's data entered into ARIS (by the May 15<sup>th</sup> deadline). All openings that are eligible for an inspection during the current operating season, and a summary of the "target" number of openings to be inspected based on provincially approved risk criteria will be included. **This ARIS snapshot is considered to be the source of truth for FOMP inspections. Any information acquired directly from ARIS is for reference and information only as this information may be different than the May 15<sup>th</sup> snapshot.**

The FOMP team lead, in consultation with team members and inspecting officers is required to select the appropriate number of openings to inspect (target generated from Geodatabase with a minimum 10% field check requirement) to ensure that these minimum targets are achieved. Although the opening list is randomly generated openings should be selected based on the level of risk associated with each opening (e.g. genetically improved stock, sensitive sites or habitat, high watershed values, steep slopes etc.), keeping logistical considerations in mind. **Further, any openings previously inspected during active operations (FOM) should be given higher priority.** Once the openings are selected for the "Planting" category, the following procedure should be followed.

#### **Procedure:**

Fill out the header information of the SAM inspection report and verify that the activity and treatment subtype that is entered (e.g. Plant = Normal plant) into ARIS was the approved activity in the Silviculture schedule of the appropriate AOP. Record the approval date on the inspection report. At this time verify that the treatment area corresponds to the planned treatment area, and that the treatment area does not exceed the opening's net harvested area (may be an indication of a possible trespass). If planting is the initial reforestation activity for this opening, ensure that the company has met the legislative timelines (2 year rule) as per section 141.1(1) of the *Timber Management Regulation*. Select the appropriate "Activity Group" (e.g. Normal - on the inspection form).

Verify that the proper seedlot was planted in the appropriate seed zone. Determine which seed zone the opening exists in. Using the SIMS database, verify that the opening's seed zone (e.g. LF2.1) was planted with stock from a seedlot sharing the same seed zone (e.g. LF 2.1). Refer to Appendix 1.0 to this SOP; *Instructions for accessing the SIMS Seed Inventory Report*.

If the seedlot is from a seed zone (e.g. LF 2.1) that is different from the opening (e.g. UF 1.3), check to see that the company obtained a variance for the opening. Refer to the Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual; *Appendix 13. Decision tree for Transfer of Stream 1 Material Outside Seed Zone of Origin*).

Examples of SAM variances include but are not limited to:

- The activity recorded in ARIS is different from the one approved in the appropriate AOP (or applicable FMP Silviculture Strategy), or the activity is not recorded in ARIS
- The activity recorded in ARIS was not approved in the appropriate AOP
- The treatment area exceeds the net harvested area
- The activity is completed outside of the two year timing window (as assessed from the "Reforestation Clock Start Date")
- As per the Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual (Appendix 13), a variance was required, but was not obtained by the company.

1) Prepare a field package

A field package (prepared for a minimum 10% of target) should include the partially completed inspection report, a map of the opening. The company records at a minimum should include a map showing the seed zones that exist within the opening, the area of planting and the species planted (if possible, QA / QC company planting audit, showing plot locations)

Documents you should consider bringing to the field include:

- Company map of the opening with treatment identified
- Approved silviculture schedule
- SAM form
- OGR's
- Legislative Links Table

2) Verify the activity in the field (10% check of target)

This is the stage in which the inspecting officer checks that the company records capture what has been done in the field, that the company has reported the activity accurately into ARIS, and that all field activities have been conducted in accordance with applicable legislation and operating ground rules.

The following should be considered during the inspection:

- Were the species of seedling planted approved and recorded accurately?
- Was the activity conducted in accordance with the operating ground rules? Is there any environmental damage as a result of the activity? (e.g. Damage to a watercourse by inappropriate ATV's used to access the block).
- Were the planting boxes and plastic wrap disposed of in an appropriate manner, this is dependent on specific OGR's (Is there any evidence of burned planting boxes?)
- Does the area of planting and species planted correspond to the maps and information provided by the company? Where large variances in area exist, a GPS could be used to capture the actual treatment area for follow-up purposes.
- Has the activity been conducted in accordance with the operating ground rules? Is there any environmental damage as a result of the activity? Should environmental damage exist, or there is still outstanding work (e.g. debris disposal or creek crossing removal) to be completed by the company, post final clearance.

Examples of SAM variances include but are not limited to:

- The activity completed is different from the one approved in the appropriate AOP (or applicable FMP Silviculture Strategy) and/or reported in ARIS (e.g. Opening has not been planted)
- The actual treatment area is not consistent with the reported treatment area (greater than +/- 10% variance)
- Activity is not completed in accordance with legislation or operating ground rules.
- The planting activity has resulted in environmental damage.

**Note:**

Details are required when “variances” are noted. Enough detail should be provided so that any officer can carry forward with a previous inspection and be confident that an accurate account of the inspection has been completed. Variances should be included on the SAM Action Plan with the appropriate follow-up as per **SOP Action Plan Preparation**.

**Appendix 1.0** Instructions for accessing the SIMS Seed Inventory Report.**SAM – Planting inspections (Seedlot verification)**

Accessing Seedlot and seed zone information

1. Open the CITRIX metaframe
2. Select the “Forest Management” folder
3. Select the “SIMS” Icon
4. USER\_ID: Field (case sensitive – Capital “F”)
5. PASSWORD: Field (case sensitive – Capital “F”)

**Company Owner Code**

1. On the main SIMS screen click on the “Reports” icon. A screen listing the different reports available will appear.
2. Click on “Other Reports”. A new screen will appear. Click on “Company List”. Hit “preview” and the list will appear. The Owner Code is on the left hand side of the report.

**Company Seed Inventory Reports**

1. On the main SIMS screen click on the “Reports” icon. A screen listing the types of reports will appear.
2. Click on “Seed Inventory by Company” (This selection is second from the top.) A new screen will appear and will have 3 buttons “Preview”, “Print” and “Cancel”.
3. Click on “Preview” or “Print”. A screen asking to “Enter the Seed Owner Code” will appear. Type in the Owner Acronym (for example MW for Millar Western) and hit “OK”.
4. The inventory will appear. The inventory is listed by species in order of year of collection. There will be a seed zone designation for all collections unless it is an orchard collection and then there is a breeding region designation.

**Depleted Seedlots**

1. On the main SIMS screen click on the “Reports” icon. A screen listing the types of reports will appear.
2. Click on “Archived Seedlot by Company”. This brings up a report of all depleted seedlots by company. Seedlots within companies are listed by collection year.

**Reading the SIMS Report:**

*Species: PL - Lodgepole Pine*

a	Seedlot Number	Sublot	c		Elevation	b	Breeding Region
			PT	Fro T			
	SPF 39-15-5-2001 PL		N/A	1595	0	UF2.5	
	SPF 40-14-5-2001 PL		N/A	1340	0	UF1.4	
	SPF 16-31-10-5-2002 PL		N/A	1525	0	UF2.5	
	SPF 20-32-9-5-2002 PL		N/A	1450	1575	UF2.5	
	SPF 30-9-5-2003 PL		N/A			UF2.5	
	SPF 38-11-5-2003 PL		N/A	1200	1250	UF1.5	
	SPF 39-9-5-2003 PL	EX01	N/A	1075		LF2.2	
	SPF 39-9-5-2003 PL	EX02	N/A	1075		LF2.2	
	SPF -40-14-5-2003 PL	EX01	N/A	1375		UF1.4	
	SPF -40-14-5-2003 PL	EX02	N/A	1375		UF1.4	
	SPF I G278 SO 2003/2004 PL		N/A				K1
	SPF 6-38-10-5-2004 PL		Y	1300	1350		
	SPF I G278 SO 2005 PL		N/A				K1
	SPF 2-39-10-5-2005 PL		Y	1180	1260	LF2.2	
	SPF 5-39-14-5-2005 PL		Y	1560	1660	UF2.5	
	SPF I G278 SO 2006 PL		N/A				K1
	SPF 34-34-8-5-2006 PL		Y	1280	1320	UF1.5	
	SPF 3-35-8-5-2006 PL		Y	1200	1300	UF1.5	
	SPF 16-36-11-5-2006 PL		Y	1550	1650	UF2.5	
	SPF 20-36-11-5-2006 PL		Y	1650	1750	SA3.1	
	SPF 22-36-11-5-2006 PL		Y	1545	1645	UF2.5	
	SPF 25-36-11-5-2006 PL		Y	1505	1605	UF2.5	

- a. **Seedlot number** – shows the legal location and the year of collections. Ensure that the seedlot reported in ARIS is a valid seedlot for the company. A measurement of the distance between the point of collection and deployment may be required to determine if the deployment fits within the old transfer rules (Appendix 13 – Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual)
- b. **Seed zone and Elevation** –this is the seed zone from which the seed was collected. The designated alphabetic descriptor denotes the natural sub region in which the seed zone falls.

A comparison between the seed zone of deployment (cutblock) and the seedlot is required to determine the need for a variance. Note the mean elevation of the cutblock and the mid point as well as the min and max elevations for the seedlot, in order to determine if the deployment fits within the old transfer rules (Appendix 13 – Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual)

- c. **PT** (Point collection) – As per appendix 4 (Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual), PT refers to whether or not the seed collection has been confined to a 2km radius, and within a maximum elevation range of 100m.

Y = This seedlot may be deployed within 1km of the seed zone boundary, *provided that* the elevation from the point of collection (mid point range) to the point of deployment does not exceed 100m. This deployment can occur **without an approved variance**.

NOTE: This only applies to seed collected after 2003, and is valid for unrestricted material

N = Transfer request of this seedlot will not be considered for deployment outside the seed zone of origin. Refer to the decision tree in “Appendix 13” of the Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual, to determine if in fact a variance was required.

N/A = Transfer of this seedlot within or across natural sub region boundaries **may require an approved variance**, or may not be allowed. Refer to the decision tree in “Appendix 13” of the Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual, to determine if in fact a variance was required.

Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual link;

<http://esrd.alberta.ca/lands-forests/forest-management/forest-management-manuals-guidelines.aspx>

For more information please refer to section 18 – Green Area Deployment, of the manual.

**Authorities:**

Section 29(1) – Forests Acts

Section 100(1) and (2) TMR

Section 115.1(1) TMR

Section 141.1(1) TMR

Section 142.4 (1) TMR

Section 142.8 TMR

Section 143.1(1) TMR

Directive 2001-01: Balsam and Alpine Fir as an acceptable regeneration species

**Supporting References:**

Alberta Forest Genetic Resource Management and Conservation Standards May 1, 2009 manual.

<b>Revision History</b>				
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5.0	July 1, 2010	Numbering		Andre Savaria
6.0	April 29, 2011	Annual Document Review		Darren Fearon
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