
***British Columbia Mapping Standards For use in
RESULTS Submissions***

Version 1.1

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Forest Practices Branch



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Executive Summary

In the fall of 2003, the Reporting Silviculture Updates and Land Status Tracking System (RESULTS) and the Electronic Submission Framework (ESF) system replaced the Integrated Silviculture Information System (ISIS) and the Major Licence Electronic Data Transfer (MLSEDT) applications. These applications will enable clients to electronically submit silviculture information and accompanying maps.¹

Traditionally the Ministry of Forests (MoF), Inventory Branch digitally-mapped openings in the forest cover caused by disturbances such as logging or fire etc. Forest inventory digital mapping is now the responsibility of the Ministry of Sustainable Resources Management (MSRM) – Resources Information Branch (RIB). The openings created for Silviculture mapping will be incorporated into the MSRM Vegetation Resources Inventory (VRI) digital maps.

The MoF Forest Practice Branch, Silviculture Practices Section requires more detailed mapping within the opening (standards units, non productive areas, wildlife tree patches, etc.). In the past, the MoF District and/or licensees did not have digital geographic information system (GIS) capability, so paper copies of silviculture maps were provided to the MoF District office and stored. With increased access to powerful computers, high speed Internet, and software capability, electronic submissions of data have become more efficient and cost-effective.

For basic silviculture obligations, the contents of this document provide details so that licensees and BC Timber Sales (BCTS) will be able to meet the requirements for mapping contained in Section 45, 46, and 48 of the Timber Harvesting and Silviculture Practices Regulation (THSPR). The requirements contained in this document are authorized under Section 47 of the THSPR.

This document also provides details for licensees and MoF staff to meet the requirements for mapping contained in Forest Investment Account (FIA) standards agreements for silviculture activities.

¹ Sheldan, Tim 2003. Provincial RESULTS Orientation Sessions, September and October 2003 (Memorandum), Operations Division and BC Timber Sales, 2003. 7pp.

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Introduction

1.1 Background

The Timber Harvesting and Silviculture Practices Regulations (THSPR)² requires licensees to submit aspatial silviculture data and maps¹ to the Ministry of Forests (MoF). This can be accomplished by using the new Reporting Silviculture Updates and Land Status Tracking System (RESULTS) and Electronic Submission Framework (ESF) systems. These new systems have replaced the Integrated Silviculture Information System (ISIS) and the Major Licence Electronic Data Transfer (MLSEDT) applications.

The MoF and Ministry of Sustainable Resources Management (MSRM) will rely on licencees and service providers to load the data into RESULTS. The non-spatial data specifications have been written using ISIS guidelines.³ However standards need to be developed for the new spatial data loading and submission requirements. This document provides a basis for spatial mapping submission guidelines.

1.2 Legislative Requirements for Silviculture Mapping

The legislative requirements in the *Forest Practices Code of BC Act - Timber Harvesting and Silviculture Practices Regulation* (THSPR) specifies the reporting of basic silviculture obligations (the web site can be found in the links section). Section 47 of the THSPR provides the following authority for this document:²

- 47 (1) *The minister, with respect to the reports referred to in section 45 or 46, may*
- (a) require Forms A, B, and C and associated maps to be electronically submitted to the ministry,*
 - (b) specify the format of the electronic data submission, and*
 - (c) establish guidelines for silviculture surveys and the content and accuracy of the information to be submitted on maps, Forms A, B, and C or alternate approved forms.*
- 47 (2) *Despite section 45 or 46, if under subsection (1) the minister*
- (a) requires a form to be electronically submitted, or*
 - (b) specifies the format and content of the submission, the holder of an agreement under the Forest Act who is required under this section to submit data or prepare a map must do so in accordance with the requirements or specifications.*

1.3 Document Goals

The document goal is to provide digital mapping standards for electronic submissions required by RESULTS. These standards will reduce the complexity of digital mapping submissions.

² Ministry of Forests Legislation & Regulations, 2003 Timber Harvesting & Silviculture Practices Regulations, On-line Internet August 5, 2003, Available:

<http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcaregs/thspr/thspr.htm>

³ Ministry of Forests, ISIS User Guide

http://www.for.gov.bc.ca/his/isis/user_guide/index.htm

1.4 Funding

Translating silviculture report data for submission to the MoF is a FIA eligible activity. The current FIA requirements for licensees to provide the MoF with an electronic submission are found on the MoF website.⁴

2 Digital RESULTS Submission Mapping Standards

2.1 Overview

The *Forest Practices Code of British Columbia Act* and Regulations requires licensees that are responsible for establishing a free growing stand to submit reports to the MoF.² The silviculture digital mapping standards are documented for spatial submissions to RESULTS. The standards allow for maximum flexibility while maintaining strict rules. The standards will allow for multiple input systems and require only one final output format.

2.2 Spatial Data Submission Format

The digital spatial format for map submissions will be in the GML. GML is a subset of XML that allows for encoding of geographic information; including, both spatial and non-spatial properties of geographic features.⁵ Schemas can be found at the MoF electronic submission website. Maps may be produced using a variety of CAD and GIS systems but must conform to GML format. Each new opening should result in one digital file with polygon features. The digital file should contain:

- Opening boundary – gross area
- Silviculture standards units
- Reserves (mature and immature), including Wildlife Tree Patches (WTPs)
- Forest cover polygons

Minimum Requirements:

Formal Submission must be in:

- GML format
- One of the two officially adopted projections
 - Albers Equal Area Conic (BCALBERS) – NAD83
 - Universal Transverse Mercator (UTM) – WGS (zones 7-11)
- Metres

⁴ MoF Forest Investment Account information can be found on the following website:

http://www.for.gov.bc.ca/hcp/fia/landbase/stand_establishment_treatment_eligible_act.htm

⁵ Ministry of Forests, 2003. Electronic Submission Framework (ESF) RESULTS Submission Guide Rev. 5, On-line Internet September 15, 2003 Available:

http://www.for.gov.bc.ca/his/esf/assets/results/version02/RESULTS_Submission_Creation_Guide_v2.doc

2.3 Topographic Base

Terrain Resources Information Management (TRIM) (1:20,000) topographical base maps will be used to check the position of new silviculture opening digital data. The TRIM maps are the responsibility of the MSRM Base Mapping and Geomatics Services Branch.⁶ Addressing errors or updates to TRIM is outside the mandate of this document.

Minimum Requirement:

- Must use TRIM base maps to check the position of the new silviculture opening digital data.

2.4 VRI Base Maps

The VRI vegetation inventory maps are the responsibility of the MSRM Resources Information Branch.⁷ The position of the new opening digital data will be overlaid onto the VRI base maps to check MSRM updates. Addressing errors or updates to the VRI vegetation inventory maps is outside the mandate of this document.

Minimum Requirement:

- Use vegetation inventory maps as an overlay to verify the position of new openings.

2.5 Positional Accuracy

Both 1:20,000 TRIM and VRI maps may be used to test positional accuracy and increasing the scale will not increase the accuracy of the maps. Submissions will be at a resolution of 1:20,000.

Minimum Requirement:

- The base map scale for RESULTS submissions will be 1:20,000.
- Map boundaries must originate from a 1:20,000 map scale or greater.

⁶ The MSRM Base Mapping and Geomatics Services Branch website is: <http://srmwww.gov.bc.ca/bmgs>

⁷ The MSRM Resources Information Branch website is: <http://srmwww.gov.bc.ca/tib/vri/index.htm>

2.6 Relative Positional Accuracy

Relative positional accuracy specifies how closely the shape of a feature in its coordinate space reflects its true shape on the ground and its relationship to other features in the dataset.⁸ Generally, global positioning system (GPS) traverses provide the most accurate measure of opening boundaries; they will easily convert to any of the required projections. All data collection methods require digitizing other than GPS, which requires only translation to the required format. All traverse types will be based on NAD83 datum.

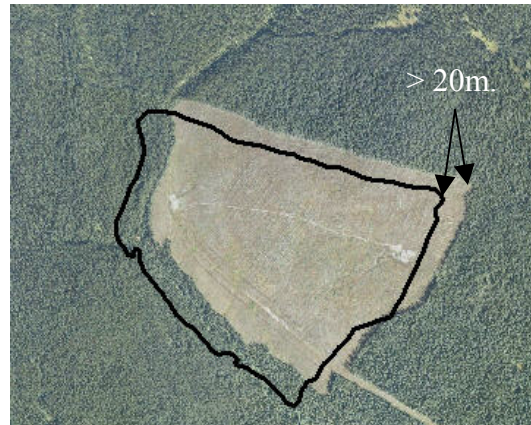


Figure 1. Relative positional accuracy overlay.

Standards for all traverses are not part of this document. Websites for both GPS and Conventional standards for traverses can be found in Appendix III (10 and 11). Figure 1 shows a file not meeting the specifications and would be returned to the licensee.

Minimum Requirement:

- At a scale of 1:20,000, the polygon boundary must be within one millimetre of its true NAD83 map location (i.e., within 20 metres of its true NAD83 ground position).⁹

2.7 Absolute Positional Accuracy

Absolute positional accuracy specifies how closely the location of a feature in its coordinate space (either longitude/latitude, or a projection plane) reflects its true location on the ground.⁷ In GPS or tight chain traverses, *one* tie point must be established to a known map feature that is within 10 metres of its true NAD83 position.

Minimum Requirement:

- One tie point must be established within 10 metres of its true NAD83 position.

⁸ Digital Data Working Group, Resources Inventory Committee MSRM 1998 Standard for Developing Digital Data Specification Standards Documents (Version 1) Feb 1998 On-line Internet February 5, 1998 Available: <http://srmwww.gov.bc.ca/risc/pubs/other/standardfordevelopdigitaldata/index.htm>.

⁹ These standards changed the specifications in footnote 7 to 20 m to reflect the use of 1:20,000 maps.

2.8 Minimum Polygon Size

Current technology enables mappers to create small polygons that can be accurately mapped. However, the cost of maintaining these small polygons is too high for the business needs of silviculture operations.

TRIM I (1:20,000) standards (Appendix III) require polygons to be at least one hectare.¹⁰ The MoF, Forest Practices Branch, Wildlife Tree Committee requires a minimum of 0.25 ha. to track wildlife retention and other reserve areas.¹¹ The TRIM II (1:10,000) specifications decrease the minimum polygon size to 0.25 hectares.¹²

The recommended minimum polygon size for the Silviculture Digital Mapping is 0.25 hectare. However, if there is a business reason for smaller polygons, this can be accommodated in the RESULTS data submission.

Minimum Requirement:

- The minimum polygon size is 0.25 ha. If there is a business need for a smaller than 0.25 ha polygon, this can be accommodated in the RESULTS database.

2.9 Minimum Resolution

Resolution is the degree to which closely related entities can be discriminated. This includes the minimum separation of points along the same feature, and the minimum separation between two features.⁷ Two linear features cannot be less than 10 metres apart.¹³ Tolerance levels of GIS systems may have difficulty retaining smaller resolutions.

Minimum Requirement:

- Two linear features cannot be less than 10 meters apart.

¹⁰ MSRM, 1992. British Columbia Specifications and Guidelines for Geomatics Volume 3 January 1992 Page. 230 On-Line Internet Available: <http://srmwww.gov.bc.ca/bmgs/trim/1to20specs/specs20.pdf>

¹¹ Wildlife Tree Retention Minimum Polygon Size: <http://www.for.gov.bc.ca/hfp/wlt/wlt-policy-08.htm>

¹² Policies and Specifications for TRIM II (1:20,000) and 1:10,000) Revision Data Capture Version 2 May 1997 example Pg. 58, On-Line Internet Available:

<http://srmwww.gov.bc.ca/bmgs/trim/trm2sps/trm2sps.pdf>

¹³ We increased the resolution to 10 meters as suggested by the “Standard for Developing Digital Data Specification Standards Documents (Version 1)” also footnote 7.

3 Digital Polygon Standards

Digital polygon files may have a variety of digital sources including sketch mapping, tight chain traversing, to very accurate GPS data. In each case, the data must meet the standards outlined in Section 2. Section 3 defines the submission types found in each document. Each of the following components of an opening may have multi-part polygons with only one corresponding row in the database (i.e., one to many relationships). This will be discussed in several of the following figures.

3.1 Tolerance for differences in area between the aspatial and spatial data

Minimum Requirement:

- The tolerance for differences in area between the aspatial and spatial data is:
 - Openings < 20 ha = 1 ha or 25% of the opening size whichever is less
 - Openings > 20 ha = 5% of the opening size

3.2 RESULTS Submission Types

Until March 31, 2005 licensees can submit silviculture reports on Forms A, B, and C. A “Form A submission” identifies the standards unit and a map showing the location of those standards units, in RESULTS this data is referred to as an Opening submission. A “Form B submission” is a description of the harvest activity within the opening, and a map showing where this activity took place, in RESULTS this is referred to as a Harvest submission. A “Form C submission” is the forest cover description with an accompanying map, in RESULTS this is referred to as a Forest Cover submission. Each of the following polygon types is generic to each submission type. Conversion to RESULTS will change mapping requirements.

3.3 Opening Boundary

An opening submission indicates the administrative boundary (Figure 2) of an area of land on which silviculture activities are planned and completed.⁴ The opening boundary is the gross area of an opening including standards units, reserve areas, and non-productive areas. The position of this boundary *must* be accurate (Section 2). Many other applications may also use this boundary (i.e., VRI). A unique BC Grid System mapsheet number and a unique opening number by mapsheet will identify the opening.



Figure 2. Example opening boundaries.

Minimum Requirement:

- Mapsheet grid number – values are 82, 83, 92, 93, 94, 95, 102, 103, 104, and 114
- Mapsheet letter code – values are A-P
- Mapsheet number – values are 1-100
- Opening number – A unique identifier of up to four characters that describes the opening on a *specified* mapsheet.

3.4 Forest Cover Polygon

A polygon (stratum) alphanumeric code is assigned to each component within an opening, including reserves, areas to be reforested, and non-productive types. Including the silviculture polygon code with the mapsheet and opening number is a unique link between spatial and aspatial data. (Figure 3).



Figure 3. Patch cut with a multi-part forest cover polygon 1 and forest cover polygon 2.

Minimum Requirement:

- Each unique polygon (stratum) must be assigned a unique alphanumeric code in the spatial file.

3.5 Silviculture Standards Units (SU)

A standard indicates the basic silviculture objective stated in quantifiable terms for a specific area (Figure 4.) These are the acceptable standards for reforestation and soil conservation.⁴

Each subunit within the opening boundary will be uniquely identified. An opening definition can contain multiple standards, but each will be identified by an alpha or numeric code. The sum of the SUs in an opening equals the net area to be reforested. The boundary lines are a planning boundary and are generally not as accurate as the opening boundary unless it is part of the opening boundary.



Figure 4. Patch cut has one SU.

In Figure 4, there could be two SUs. If so, each patch should only be assigned to one SU. If a patch were split and assigned to 2 SUs, this patch must be described as two forest cover polygons.

Minimum Requirement:

- Each standards units must be assigned a unique one character alphanumeric code in the spatial file.

3.6 Reserve Areas

Reserves are mapped polygons within the gross opening area where no silviculture or harvesting activities are planned (Figure 5). They generally retain their original forest cover attributes and are indicated by a unique reserve code. If the reserve is not within the cutblock, it would be assigned a polygon number just like the other reserves. It may be part of a multi-part polygon if the attributes are the same as an internal reserve. These external reserves are also part of the opening boundary.

A formal survey or cruise is not necessary to describe the forest cover; however, accurate vegetation cover



Figure 5. Clearcut with two riparian reserve areas and one external reserve.

information will assist many business areas. Reserve lines are generally not as accurate as opening boundaries unless it forms part of the opening boundary.

Minimum Requirement:

- Reserves with different Reserve Type codes in the RESULTS database must be separate polygon.

3.7 Wildlife Tree Patches

WTPs are legislated (THSPR Part 3, Division 3, Section 16.1b)² and have a minimum reserve area for each hectare harvested. WTP's may be located (Figure 6) as:

- A discrete reserve area within the opening boundary (1);
- A discrete area of reserve adjacent to the opening boundary (2);
- A discrete reserve area separated from, but assigned to, an opening (5); and
- Unmappable tree(s) not meeting the 0.25 ha. minimum polygon size requirements and not added to the spatial file (3,4).



Figure 6. WTP's.

WTP's sharing a boundary with an opening boundary or a standard's unit planned for harvest must have the same level of accuracy as the opening boundary. If mappable WTP boundaries are not cutting boundaries in crown timber, they do not require the same accuracy as cutting boundaries.

Where WTP boundaries are located in areas of unharvestable crown timber, the boundary may be approximated for mapping purposes. Having accurate boundary locations may not be cost-effective in areas of steep, broken terrain. The mapped WTP attributes must be similarly updated for inventory purposes as those in the Reserves Areas section (Section 3.6).

Minimum Requirement:

- All WTPs greater than 0.25 hectares, which are associated with the opening, must be assigned a unique polygon id.

3.8 Non-Productive Areas

Non-productive (NP) areas contained within the gross area of the opening but are not scheduled for silviculture or harvesting activity. These areas include features such as swamps, alpine lakes, etc (Figure 7 #2, and #3). Permanent roads and landings are also considered NP and can be identified as a separate polygon within the opening (Figure 7-#1) or as a line feature as described in Appendix III. This also includes roads inside partial cuts. Spur and skid trails do not need to be mapped unless they are re-used for subsequent access to the stand (i.e., repeat commercial thinning access trails).



Figure 7. Clearcut with reserves, WTP's and NP types.

Minimum Requirement:

- NP areas with different stocking status / stocking type combinations in the RESULTS database must be separate forest cover polygons.
- NP Types are described in Appendix II

4 Digital Attribute Standards

Each new opening results in one database file. The attribute file schema will follow the “Electronic Submission Framework (ESF) RESULTS Submission Guide Rev. 5”, September 15, 2003. The ESF document identifies the requirements for filling in the RESULTS aspatial database. The spatial file will contain the mapsheet number, opening number, polygon/strata, and SU code. Area summaries of the SU code will result in the net area to be reforested.

Minimum Requirement:

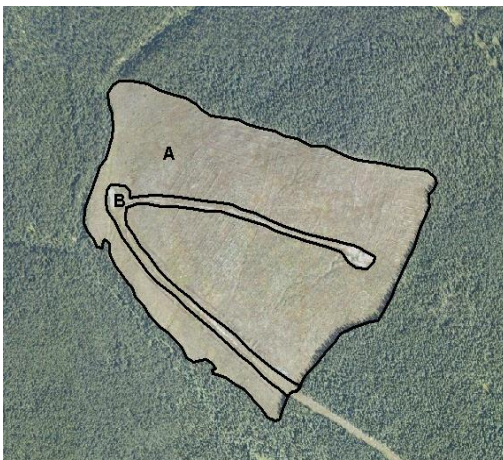
- The spatial file will contain the mapsheet number, opening number, and polygon (strata).

5 Silvicultural Systems Spatial Data Examples

A silvicultural system is a planned program of treatments during the life of a stand designed to achieve specific stand structural objectives. This program of treatments integrates specific harvesting, regeneration, and stand tending methods to achieve a predictable yield of benefits from the stand over time.¹⁴ This section shows how to process different silviculture system opening types.

5.1 Even-aged Stands

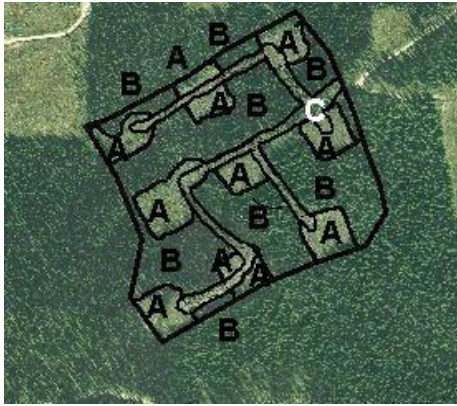
Clearcut Harvesting – This type of system cuts all the trees within the cutblock boundary resulting in an even aged stand.



Polygon	Description	Opening No.	Standards Unit	Area (ha)
A	Clearcut	093H 002-10	1	55.0
B	NP UNN	093H 002-10		5.0

Figure 8. Clearcut Silviculture System.

Patch cutting harvesting – Map patch cut areas exceeding 0.25 ha (guideline only). For each polygon, map and describe the polygon based on the species and structure attributes.



Polygon	Description	Opening No.	Standards Unit	Area (ha)
A	Cutover	093H002-10	1	10.0
B	Mature	093H002-10		45.0
C	NP UNN	093H002-10		5.0

Figure 9. Patch cut harvesting.



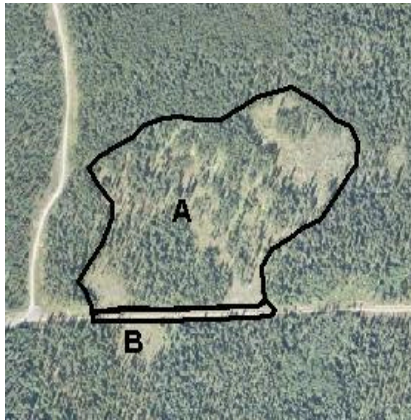
Seed Tree System - Do not map seed trees in this harvest type.

Polygon	Description	Opening No.	Standards Unit	Area (ha)
A	Clearcut	093H002-10	1	30.0
B	Seedtree	093H002-10	2	20.0
C	Reserve	093H002-10		10.0
D	NP UNN	093H002-10		5.0

Figure 10. Seed tree and clearcut systems.

¹⁴ Introduction to Silviculture Systems: <http://www.for.gov.bc.ca/hfd/pubs/SSIntroworkbook/index.htm>.

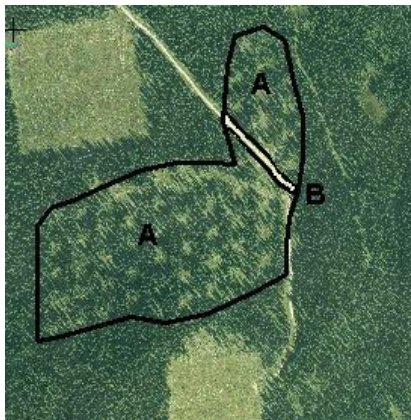
Variable Retention Harvesting - Map and describe reserve areas exceeding 0.25 ha. For areas outside the reserve areas, map and describe polygon species and stand layers.



Poly gon	Description	Opening No.	Standards Unit	Area (ha)
A	Variable Retention	093H002-10	1	20.0
B	NP UNN	093H002-10		5.0

Figure 11. Variable retention system.

Group Selection Harvesting - Do not map individual group selection. Map and describe polygon based on the species and stand structure attributes.



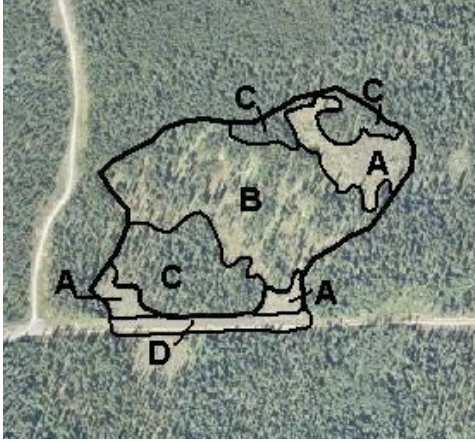
Polygon	Description	Opening No.	Standards Unit	Area (ha)
A	Group Sel.	093H002-10	1	55.0
B	NP UNN	093H002-10		5.0

Figure 12. Group Selection System.

Shelterwood System - Map and describe polygons based on the species and stand structure attributes. When the overstory is harvested to release the regeneration and/or sapling layer(s), the polygon information must be updated to reflect the released species attributes. This system would be spatially processed the same as Figure 11 other than the stand structure will be different.

5.2 Uneven-aged Stands

Single Tree Selection System - Map and describe polygon based on the species and stand layers.



Polygon	Description	Opening No.	Standards Unit	Area (ha)
A	Cutover	093H002-10	1	10.0
B	Seed Tree	093H002-10	2	25.0
C	Reserve	093H002-10		10.0
D	NP UNN	093H002-10		5.0

Figure 13. Single tree selection system.

5.3 Intermediate Harvests

The intermediate harvest polygons will follow the area of treatment boundaries:

- Commercial thinning
- Harvesting of poles
- Sanitation treatments

6 Electronic Submissions

The licensee will create the XML/GML digital file following the guidelines in this document and those in the RESULTS submission guide.⁴ Licensees will log onto the Electronic Submission web site and upload an electronic RESULTS submission document.¹⁵ The document's XML/GML structure and geometry will be validated immediately upon upload.

The XML/GML document will be checked thoroughly to see where detailed business rules can be applied. If the file passes, it will be loaded into RESULTS. If the file fails the validation tests the licensee will be notified by email.

¹⁵ MoF, Information Management Group 203, Region and District Manager's Electronic Business Information Package Communication #1, May 5, 2003 pg. 8

Appendix I - Acronyms Used

BCGS	British Columbia Geographic System
CP	Cutting permit
ESRI	Environmental Systems Research Institute
GA	gross area
GIS	Geographic Information System
GML	Geographic Markup Language
GPS	Global positioning system
HA	hectare
IGDS	Interactive Graphic Design Software
NAD	North American Datum
NAR	net area to be reforested
NCA	net cutblock area
NCC	non-commercial cover
NP	non-productive
RA	reserve area
RESULTS	Results Based Code Silviculture and Land status Tracking System
RET	retention harvesting
SPH	stems per hectare
SU	standard unit
THSPR	Timber Harvesting & Silviculture Practices Regulation
TRIM	Terrain Resource Information Management
UTM	Universal Transverse Mercator
VRI	Vegetation Resources Inventory
WTP	Wildlife Tree Patch

Appendix II- NP Types

NP type options are described in the following table. Most submissions will describe NP types as NP UNN or NP Nat. The submission process can optionally handle more detailed descriptions providing more meaningful information. For example: R Nat instead of NP Nat to describe a rock outcrop.

Stocking Status		Stocking Type		Description
A	Alpine	NAT	Natural	Includes non-forested land above the timberline.
AF	Alpine Forest	FOR	Forest	High elevation forest located adjacent to alpine areas.
C	Cultivated Cleared	UNN	Unnatural	Land managed for agricultural purposes.
G	Gravel Bar	NAT	Natural	Gravel bars adjacent to streams.
IMM	Immature	ART	Artificial	Young stands that are stocked (non-NSR). Conifers aged 1–120 years, and PI, Pa and all deciduous species aged 1–80 yrs, can be immature.
L	Lakes	NAT	Natural	
M	Meadow	NAT	Natural	Uncultivated low-lying, usually flat grassland.
MAT	Mature	ART	Artificial	Conifers older than 121 years; and PI, Pa and deciduous species older than 81 years.
NC	Non-commercial	NAT	Natural	Describes potential productive forest land that is covered or occupied with either "forest" or "brush".
NP	Non-productive	BR	Brush	Forest land that is incapable of growing merchantable stands within a reasonable length of time.
		FOR	Forest	
		NAT	Natural	– used when you don't know specifically what type of NP (R,S,G etc.) to describe.
				– used to describe all roads and landings, permanently removed from the productive landbase.
NSR	Not Satisfactorily Restocked	UNN	Unnatural	Forest land that does not meet the minimum stocking standards. Note: NSR NPL describes strata that require some type of site preparation in order to provide proper microsite for regeneration.
		NAT	Natural	
		NPL	Non-plantable	
OR	Open Range	PL	Plantable	Ecologically stable, non-forested rangeland community, best suited for range management.
		NAT	Natural	
R	Rock	NAT	Natural	
S	Swamp	NAT	Natural	
U		Urban	UNN	Manmade cover such as industrial sites, powerlines, pipelines, railways, seismic lines.
RES	Reserve			define

Appendix III- Road Line Option

In this option, road line work will be derived from a separate road submission. Small unmappable NP will not be assigned polygons for vegetation inventory map updates, but will be removed from the NAR and identified in the site plan. NP UNN or road area and unmappable NAT areas will be removed from the gross polygon area. No spatial data is required for the non-mappable component (NMC).

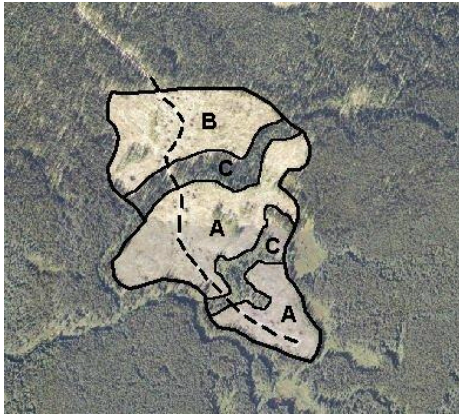


Figure 14. Road line option

Polygon	NMC	Description	Opening No.	Standards Unit	Gross Area	Net Area
A		Clearcut	093H002-10	1	30.0	27.0
	A	NP UNN	093H002-10		2.8	
	A	NP NAT	093H002-10		0.2	
B		Seedtree	093H002-10	2	20.0	19.0
	B	NP UNN	093H002-10		1.0	
C		Reserve	093H002-10		10.0	9.0
	B	NP UNN	093H002-10		1.0	

Appendix IV - Linkage to Other Documents

- 1) Legislative Requirements for Silviculture Mapping
<http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcaregs/thspr/thspr.htm#part6>
- 2) Forest Investment Account Funding
http://www.gov.bc.ca/hcp/fia/landbase/stand_establishment_treatment_eligible_act.htm
- 3) Guidelines and Procedures for FIA Funded Silviculture Activities
http://www.for.gov.bc.ca/ftp/hfp/external!/publish/FIA_Documents/Guidelines_including_Cost_Caps/procedures_for_fia.pdf
- 4) General FIA Standards
http://www.for.gov.bc.ca/ftp/hfp/external!/publish/FIA_Documents/Standards/FS1001.pdf
- 5) Electronic Submission Framework (ESF) RESULTS Submission Guide (Rev. 5)
http://www.for.gov.bc.ca/his/esf/assets/results/version02/RESULTS_Submission_Creation_Guide_v2.doc
- 6) Electronic Submission Framework website
http://www.for.gov.bc.ca/his/esf/index_ressub.htm
- 7) The MSRM Base Mapping and Geomatics Services Branch
<http://srmwww.gov.bc.ca/bmgs/>
- 8) MoF – Resources Information Branch Vegetation Resources Inventory
<http://srmwww.gov.bc.ca/tib/>
- 9) Standard for Developing Digital Data Specification Standards Documents
<http://srmwww.gov.bc.ca/risc/pubs/other/standardfordevelopdigitaldata/index.htm>
- 10) British Columbia Standards, Specifications and Guidelines for Resource Surveys Using GPS Technology. Currently not available on-line see:
http://srmwww.gov.bc.ca/bmgs/gsr/psguc/psguc_changemanagement.htm
<http://srmwww.gov.bc.ca/risc/pubs/teveg/opfield/>
- 11) Conventional Guidelines for Traditional Resource Survey Standards
 - a) Cruising Manual (2003)
<http://www.for.gov.bc.ca/hva/manuals/cruising/CH3.htm>
 - b) Forest Practices Code of BC Act Boundary Marking Guidebook
<http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/bound/boundtoc.htm>

- c) Stocking and Free Growing Survey Procedures Manual
<http://www.for.gov.bc.ca/hfp/pubs/silvman/index.htm>
- 12) British Columbia Specifications and Guidelines for Geomatics Volume 3 January 1992 Page. 230
<http://srmwww.gov.bc.ca/bmgs/trim/1to20specs/specs20.pdf>
- 13) Wildlife Tree Retention Minimum Polygon Size
<http://www.for.gov.bc.ca/hfp/wlt/wlt-policy-08.htm>
- 14) Policies and Specifications for TRIM II (1:20,000) and 1:10,000) Revision Data Capture Version 2 May 1997
<http://srmwww.gov.bc.ca/bmgs/trim/trm2sps/trm2sps.pdf>
- 15) Introduction to Silviculture Systems
<http://www.for.gov.bc.ca/hfd/pubs/SSIntroworkbook/index.htm>
- 16) Guidelines for completing the FS 708
http://www.for.gov.bc.ca/hfp/pubs/fs708_user_guide/index.htm
- 17) Ministry of Forests
http://www.gov.bc.ca/bvprd/bc/channel.do?action=ministry&channelID=-8385&navID=NAV_ID_province
- 18) Ministry of Sustainable Resources Management
http://www.gov.bc.ca/bvprd/bc/channel.do?action=ministry&channelID=-8393&navID=NAV_ID_province