Cruise Plan Workshop

Rocky Mountain Forest District

February 27 2007

Agenda:

1. Introductions/Housekeeping – 0800 to 0815
2. Workshop objectives – 0815 to 0830
3. Business Process – 0830 to 0900
4. Expectation Letter – 0900 to 1000

Break

5. Cruise Plans: FS694, Mapping requirements - 1015 to 1200

Lunch

6. ECAS submissions – 1300 to 1400
7. Common field problems – 1400 to 1500

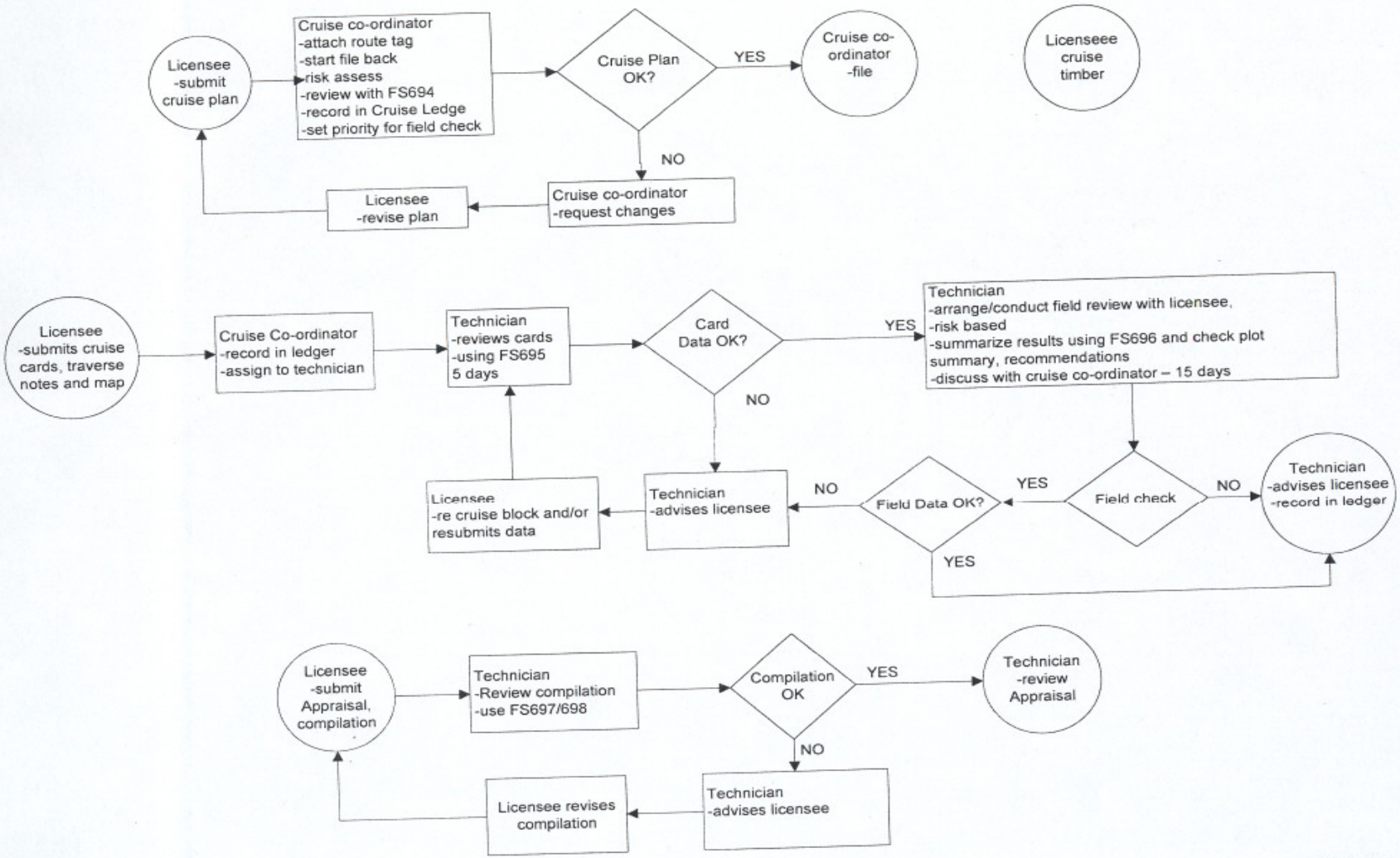
Break

8. Questions – 1515 to 1600

Objectives:

- Provide a clear understanding of the cruising business process in the RMFD
- Provide a clear understanding of the RMFD cruise expectation letter
- Improve the quality of cruise plan submissions in the RMFD
- Improve consistency and equity between licensee cruise submissions
- Demonstrate the linkages between the business process, the expectation letter, cruise plan submissions, the Provincial cruise manual, check cruises, appraisal submissions and licensee harvest schedules
- Demonstrate how meeting submission timelines and content requirements will result in more flexibility in licensee harvest options and scheduling

Cruising - Current Process



30/11/2006

Cruise Expectation Letter

- This purpose of this letter is:
- To provide clarity on the timber cruising expectations in the Rocky Mountain Forest District (RMFD), and demonstrate how meeting the expectations will reduce the time it takes to attain approvals of your cutting permit applications.
- To outline our District procedure for check cruising which, if followed, will streamline the cutting authority approval process through improved submission quality and meaningful communications.

- The RMFD expects that every licensee will adhere to all aspects of the *Provincial Cruising Manual* (the manual). In 2002, the Southern Interior Forest Region initiated a directive for Districts to interpret ALL revenue manuals literally, which includes the Provincial Cruise manual. The manual is amended each year and it is the responsibility of the licensees, to ensure they are following the appropriate version of the manual. Any deviation, from the procedures or standards outlined in the manual, requires approval from the Regional Executive Director of the Southern Interior Forest Region, **prior** to conducting the work. Protocol dictates that licensees first check with the District to determine whether the proposal fits within the context of the manual, or if it requires special approval from the Regional Executive Director. Meeting this protocol expectation will reduce time-lags down the road, where the district has to ask for additional rationales from submitting professionals, to account for any cruise manual deviations (after the fact).

- Please note, section 2.1.1 of the manual, entitled ‘Cruise Plans’, states in part that:

- **It is mandatory** for licensees, consultants and Forest Service contractors **to submit plans** to the Ministry of Forests and Range district office **prior to the commencement of a cruise**. It is recommended that the cruise plan be submitted at least 30 days in advance of the fieldwork to facilitate the scheduling of check cruises. This includes submission of cruise plans for all cutblock(s), including amendments to existing cutting permits. Specifically, if blocks are dropped or added to a previously submitted cruise plan, an amended cruise plan is required to be submitted, prior to the CP application or reappraisal submission. The amended plan will then be assessed on its own merits. The thirty days will commence on the date the plan is received and date stamped at the district office. Meeting this expectation will reduce the time between cruise completion and MOFR field checks and increase licensees’ ability to compile with confidence, at an early stage in the application process.

- In addition, section 3.6.2 of the manual ‘Objectives of Check Cruising’ states in part……The field check should be performed while the production cruisers are on site provided that an “**acceptable cruise plan”** was submitted to the appropriate district office at least 30 days in advance of the commencement of field work. (*Check cruising while production cruisers are on site, may negate the added expense of paying the cruise contractor for an extra day or two to attend the check, sometime after the cruise is completed*.)

- An **“acceptable cruise plan”** is one which meets all of the minimum requirements in the manual including, all the information on the two page FS 693 form, as well as, all the cruise plan map requirements as stated in section 3.1.7.1 of the manual. The area cruised may be one or several cutting blocks that will be covered under one cutting permit and subject to one appraisal.

- Please be aware that current staffing levels do not always provide us the ability to consider licensee requests for field checking to meet their schedules and plans. When a cruise is commenced prior to this office receiving an “**acceptable cruise plan”**, a field check can be conducted at any time, regardless of licensee harvest schedules. Basically, the licensee will bear the risk, if cruise plan submissions are not in accordance with the manual.

- Upon receiving cruise plans in the Rocky Mountain Forest District, staff will risk rate the plan and prioritize for scheduling of checks. There will be no response to cruise plans and no approvals given, in the spirit of ‘Professional Reliance’. However, if obvious flaws are identified during the risk rating process, they will be documented and the licensee will be notified as a courtesy.

- In order to help relieve scheduling bottlenecks for field checks, timely, meaningful communication is encouraged. Licensees *should* provide this office with a copy of the completed cruise cards and final cruise map within 10 working days of the cruise fieldwork having been completed (send to the attention of Peter von Wittgenstein). The latest date on the field cards will serve as the *"cruise completion date".*

- In summary:
- When **“acceptable cruise plans”** are received at least 30 days in advance of field work commencement, the check cruise will normally be performed while cruisers are on site.
- When **“acceptable cruise plans”** are received at least 30 days in advance of field work commencement, the RMFD will send a timely notice to the licensee advising of field check dates or, a notice that the field check will be waived.
- When **“acceptable cruise plans”** are received in advance of the cruise commencement (but less than 30 days in advance), District staff will have 45 days, after receipt of field card data, to schedule and complete a check cruise and communicate the results to you. If licensees do not receive notification within the 45 working days, the cruise will not receive a normal field check by District staff, prior to cutting authority issuance.

- When a cruise is commenced *prior* to this office receiving an "**acceptable cruise plan"**, and/or, copies of cruise cards are not received within 10 days of cruise completion, a field check can be conducted at any time, regardless of licensee harvest schedules.

- Failure to submit "acceptable cruise plans" or, copies of field cards indicating fieldwork completion, in accordance with this letter, may result in delays in the issuance of cutting authorities.

- Cruise plans which identify urgencies for MPBB or other forest health issues will receive consideration for expedited field checking (or for expedited notice of field check being waived). Urgencies must be identified on the FS693 ‘Provincial Cruise Plan form’, in section I (‘comments’) in order to be granted this extra consideration.

- Please note that the RMFD does reserve the right to field check any data submitted for appraisal that an office check deems suspect. Licensees must have all the signed, original cruise cards available during any field checks (‘Cruise-mate’ print-outs are also acceptable).

- The manual can be accessed at the following website:
- http://www.for.gov.bc.ca/hva/manuals/cruising/index.htm
- For those who wish to purchase a hard copy of the manual, it is available for a fee through:
- Crown Publications
  521 Fort Street
  Victoria, BC V8W 1E7
  (250) 386-4636

- The RMFD looks forward to working with you to help ensure acceptable cruise plans are received in a manner that reduces bottlenecks for field checking, and ultimately reducing the time it takes to attain approvals for your cutting authority applications.

- Please contact Peter von Wittgenstein at this office, if you have any questions regarding this letter or other cruising/valuation matters.

- Yours truly,
- Tony Wideski
- District Manager
- Rocky Mountain Forest District

- Merva Lyons, Revenue Co-manager, Southern Interior Forest Region

PROTOCOL PROCEDURES FOR INTERPRETATION OF THE PROVINCIAL CRUISING MANUAL

Intent:

These procedures are to be followed to maintain consistency in protocol throughout the Southern Interior Forest Region in the interpretation of the provincial *Cruising Manual*.

Cutting authority specific issues and interpretations should be addressed at a local level first prior to the issue being forwarded for a regional determination.

Issues of a general or global nature may be raised to the regional level or if potentially provincial in nature, immediately to Revenue Branch for determination.

While the intent of this procedure is for Districts to forward all enquiries regarding the interpretation of the provincial *Cruising Manual* to the Regional Cruising Coordinator, it is not meant to dissuade any other party from requesting an interpretation.

The Regional Cruising Coordinator will provide an interpretation in a timely manner to all parties involved.

Protocol Procedures

A. Local Issues and/or Interpretations

1. Local issues and/or interpretations (I.e. cutting authority specific questions) should be addressed at the immediate local level (I.e. between licensee/consultant and MOF District Staff).

2. When an issue or interpretation can not be agreed upon, the District will raise the issue/interpretation to Regional Level, when all parties agree.

- Licensees/consultants *will not raise* the issue to the Regional Office (unless agreed to by the District).
- Districts, licensees and consultants *will not raise* the issue to the Revenue Branch (unless directed by the Regional Cruising Coordinator).

3. The Region Cruising Coordinator will make a decision/interpretation on the issue raised and notify the District and/or Licensee/Consultant.

4. If a “decision” or clarification cannot be made regionally, then the Region Cruising Coordinator will raise the issue to Revenue Branch for final determination.
5. Revenue Branch will notify the Regional Cruising Coordinator, who will notify all districts.

- Revenue Branch WILL NOT NOTIFY original enquirers (Districts).
- ***Revenue Branch shall inform all enquirers that issue(s) must be addressed on a local basis first***. (***If a licensee/consultant has made a specific enquiry to Revenue Branch without first consulting the local office.)***

B. Global/Regional Issues and/or Interpretations

1. When an issue/interpretation is global/regional in nature (and not cutting authority specific), then the district, licensee or consultant may present the enquiry to the Regional Cruising Coordinator to be addressed.
2. The Regional Cruising Coordinator will make a decision/interpretation on the issue raised and notify the “enquirers”. The Regional Cruising Coordinator’s determination will be forwarded to all districts, all other Regions, and Revenue Branch.
3. If a “decision” or clarification cannot be made regionally, then the Regional Cruising Coordinator will raise the issue to Revenue Branch for final determination.
4. Revenue Branch will notify **all** Regional Cruising Coordinators, who will notify all enquirers.

- Revenue Branch WILL NOT NOTIFY original enquirers (unless issue/concern is provincial in nature.).

RMFD Manual Interpretation

- Where the Provincial Cruise manual says “must” or “Shall” - this is mandatory!

- Where the Provincial cruise manual says “should” – then you should! If not, then a professional rationale must be provided by the licensee.

2.1.1 Cruise Plans

It is *mandatory* for licensees, consultants and Forest Service contractors to submit plans to the Ministry of Forests and Range district office prior to the commencement of a cruise.

It is recommended that the cruise plan be submitted at least 30 days in advance of the fieldwork to facilitate the scheduling of check cruises.
This includes submission of cruise plans for all cutblock(s), including amendments to existing cutting permits.

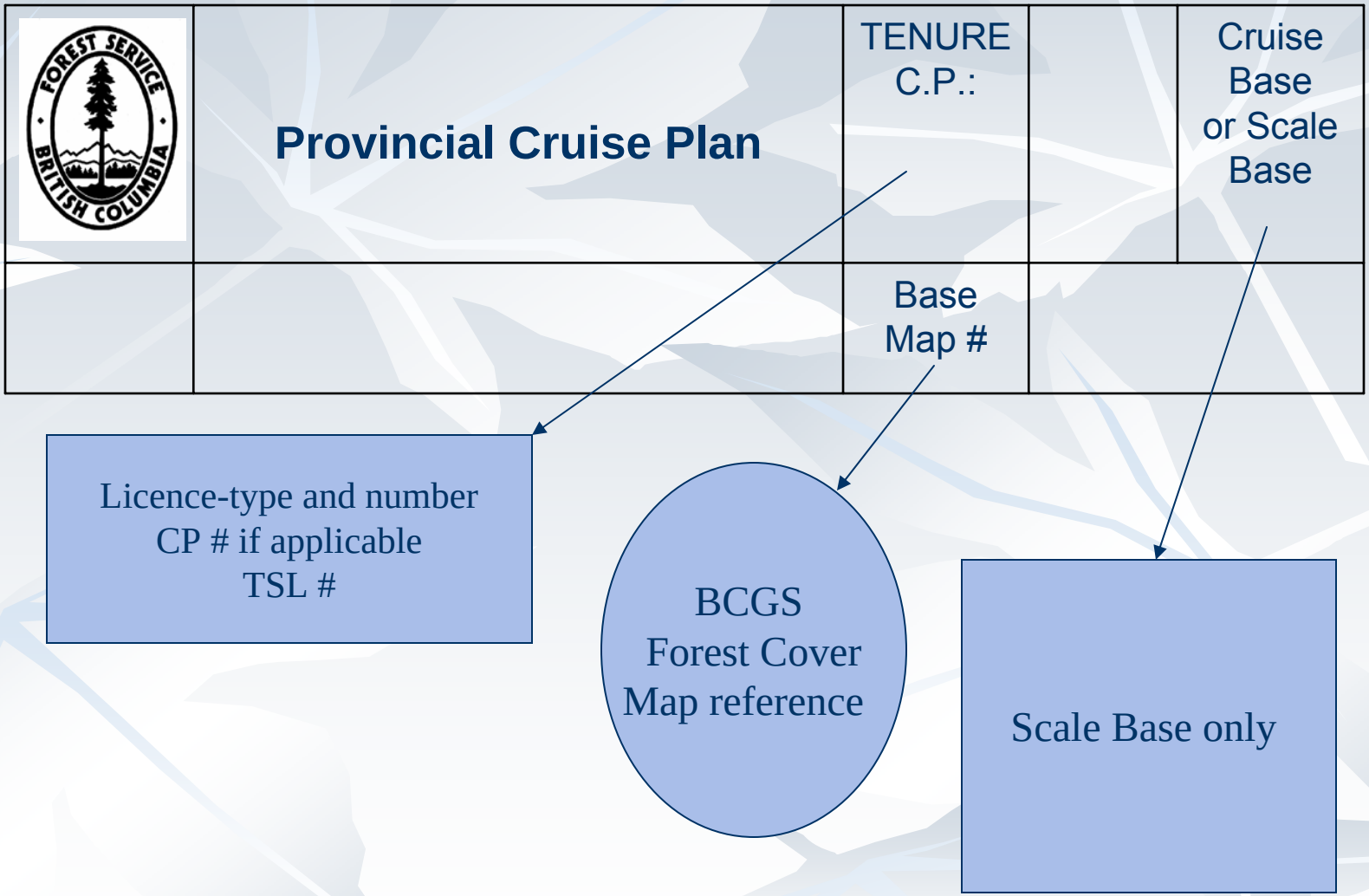
The thirty days will commence on the date the plan is received and date stamped at the district office (see the attached *sample* Cruise Plan format in the Forms chapter).

If the licensee or consultant has not received a response after providing at least thirty days notice then the cruise plan will be considered acceptable.

Cruise plans **must** be submitted to the appropriate district manager on either the prescribed Ministry of Forests and Range format or on a format designed by the licensee or consultant, but **containing all of the information requested as per Chapter 3 of the *Cruising Manual*.**

A cruise plan (see the Forms Chapter - FS 693 Provincial Cruise Plan) prepared by the licensee **must be submitted to the district office prior to the commencement of field work.**

Bias in the cruise planning phase will result in rejection of the cruise plan and will result in corrections to any fieldwork that has been done. Attach a location map and forest cover map for the cruise area to assist with access and timber type verification.


Provincial Cruise Plan
TENURE
C.P.:
Cruise
Base
or Scale
Base
Base
Map #
Licence-type and number
CP # if applicable
TSL #
BCGS
Forest Cover
Map reference
Scale Base only

A. ATTENTION:											
District Manager:							**Cruise Area (ha):**				
Licensee:						**Contact:**					
Geographic Location:											
TSA:		PSYU:		FIZ:		Inv. Reg. No:		Comp't. No:			
Coast:			Immature:		Mature:			Both:			

TSA = Cranbrook / Invermere
PSYU = As per manual
FIZ = F or as per manual

Inventory/Region/Compartment # are required

A. ATTENTION:									
District Manager:						**Cruise Area (ha):**			
Licensee:				**Contact:**					
Geographic Location:									
TSA:		PSYU:		FIZ:		Inv. Reg. No:		Comp't. No:	
Coast:			Immature:		Mature:		Both:		

B. CRUISING AGENCY:		COMPILING AGENCY:	
Agency Name:		Name:	
Cruiser Names (if known):		Address:	
Address:			

Fill in if known otherwise enter TBA

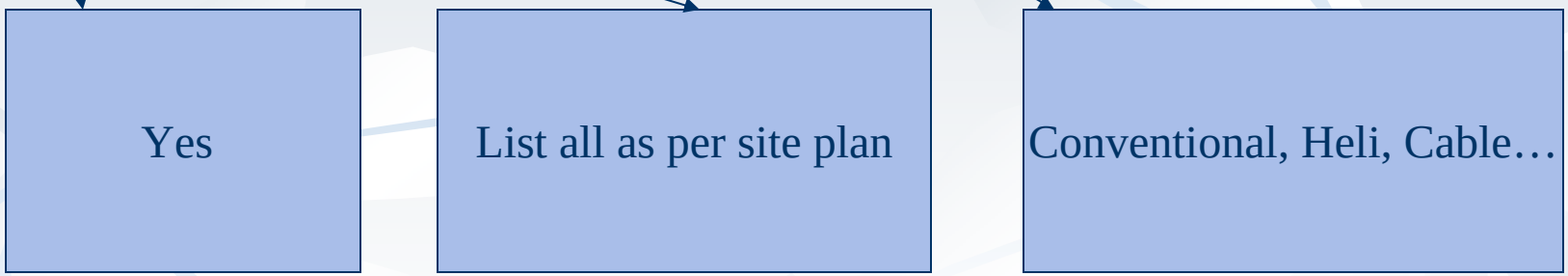
Fill in if known otherwise enter TBA

C. TENTATIVE CRUISE DATES:			
From:		To:	
Proposed Years of Logging:		Access:	

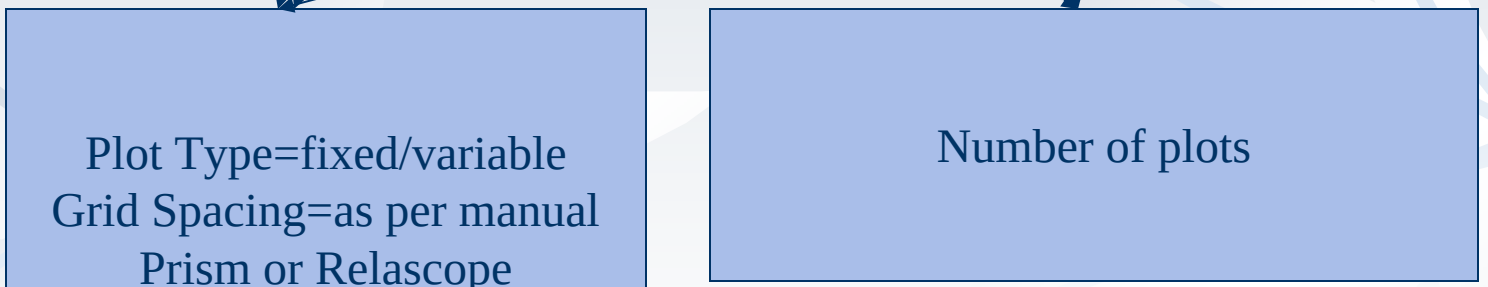
Date of field work
Commencement
Estimate year of harvest

Date of field work completion
Access – Method of access
Ie: heli, quad, 4x4…

D. HARVESTING SYSTEM:	
Harvesting System:	
Systematic Grid:	
1. Segregate Silv. System (patch clearcut, seed tree, note avg. opening size).	



E. PLOT NO:							
Measure Plots:		Count Plots:		Estimated C.V.:		S.E. Waived (Y/N):	
Grid Spacing (in m)			by	200 x 200 m if cruise < 250 ha 250 x 250 m if cruise ≥ 250 ha			
PLOT TYPE:		Prism/ Relascope:		Fixed Area:		Plot Size (ha):	



Plot Type=fixed/variable
Grid Spacing=as per manual
Prism or Relascope

Number of plots

E. PLOT NO:							
Measure Plots:		Count Plots:		Estimated C.V.:		S.E. Waived (Y/N):	
Grid Spacing (in m)		by		200 x 200 m if cruise < 250 ha 250 x 250 m if cruise ≥ 250 ha			
PLOT TYPE:	Prism/ Relascope:		Fixed Area:		Plot Size (ha):		

If SE not waived enter
CV estimate to
determine # of plots required
to meet sample error
SE waived – Y or N

Rarely used-enter # of plots if used
Fixed area plot size in ha

F. MINIMUM DIAMETER LIMITS:	COAST		INTERIOR	
	Mature	Immature	Species (cm to)	Exemption (cm)
Field Tally				
Compilation - Appraisal (cm)				
Compilation - Cutting Permit (cm)				

As per compilation manual 12.5Pl/17.5other

N/A

G. MARKING	Ribbon Colour	Paint Colour	Axe Blaze	Other (tags)
Boundaries				
Baseline				
Strips				
Plot Centre				
Tie Points				
Non Forest Types				
Riparian Areas				
Wildlife Tree Patches				
Other				

describe ribbon colour, paint colour, and any other identifying features for all criteria in left column

H. TREE HEIGHTS: (TOTAL HEIGHT METHOD IS MANDATORY)			
Height Estimation Method (ocular, vertex, etc.)		**Height Measuring Instrument (clino, hypsometer, etc.)**	

How tree heights are to be determined

What tools will you use?

I. OTHER:			
Comments:			
Note The original traverse notes must be provided to Forest Service staff upon request.:			
Signed:			
	Authorized Licensee Representative	RPF/RFT/ATC or ATE Number	Date:
Are block(s) in an approved Forest Stewardship or Forest Development Plan?			

MPB Priorities
Fire Salvage
Blow down
Green Permit
Any urgencies

Need name
And #
of licensee rep
taking
responsibility
for the plan

Plan or
Amendment #

RMFD requests these in every case (mandatory submission)
Proper headers and signatures required

J. STRATIFIED SYSTEMATIC SAMPLING: (Calculate sampling requirements for each timber type)

				A	B	C	D	E	F	G	H
Type No.	Type Description	BEC Subzone / Variant	Plot/Prism size	Type Area (ha)	Average m^3/ha	Estimated Vol / Type m^3	Type Vol. % of Total Vol.	Estimated Type CV	Weighted Type CV	Total Plots/ CP	Grid Spacing
1										Refer to	
2										Sections	
3										2.4, 2.5	
4										Provincial	
5										Cruising	
6										Manual	
7											
			Tot. Ha's		Tot. Vol.		Tot. Weighted CV:				

Mandatory info used in risk rating process.
Columns E and F only required if sample error not waived.
Column H only required when planning to use different spacing in different types.

J. STRATIFIED SYSTEMATIC SAMPLING: (Calculate sampling requirements for each timber type)

				A	B	C	D	E	F	G	H
Type No.	Type Description	BEC Subzone/ Variant	Plot/Prism size	Type Area (ha)	Average m^3/ha	Estimated Vol / Type m^3	Type Vol. % of Total Vol.	Estimated Type CV	Weighted Type CV	Total Plots/ CP	Grid Spacing
1										Refer to	
2										Sections	
3										2.4, 2.5	
4										Provincial	
5										Cruising	
6										Manual	
7											
			Tot. Ha's		Tot. Vol.		Tot. Weighted CV:				

EXPLANATION OF FORMULA

C = A X B	**D = $\frac{C}{\text{Sum C1…7}}$ X 100**	**E = cruising manual, section 2.62**
Variable Plot F = D X E	**Fixed Plot F = A X E**	**G = cruising manual section 2.4, 2.5**
		H = $\sqrt{\frac{\text{Total hectares x 10,000}}{\text{G (number of plots)}}}$

K. SOURCE OF CV ESTIMATES	
Type 1:	
Type 2:	
Type 3:	
Type 4:	
Type 5:	
Type 6:	
Type 7:	

Only required if more than one type and planning to achieve sample error.
Source of CV estimate used in calculations to
determine # of plots to meet sample error.

L. INSTRUCTIONS FOR SECTIONS

A Enter district and tenure information.
B Enter the name and address of the cruising and compiling agencies.
C Enter the tentative start and completion dates of the field work.
D Enter yes beside applicable headings.
E Enter the number of plots and the grid spacing.
F Enter the diameter limits measured and compiled to, and prism BAF.
G Enter the colour(s) of paint and flagging used, and the type of blazing and plot tags.
H Enter the appropriate height estimation method, and height measuring instrument used.
I Enter remarks if required. Signature and date are mandatory**.**
J OPTIONAL. Enter data ONLY if stratified systematic sampling is used. Type description – include: species/ age class/ height class/ site quality.
K OPTIONAL. Enter source of CV estimates.

ATTACH: CRUISE PLAN MAP. Drawn to 1:5,000 or 1:10,000 scale, topography, (streams and roads), air photo numbers, strips and baselines, plot locations, boundaries, area in the merch and total by cut block, label the cut block (mature or immature). MUST BE SUBMITTED WITH THIS FORM.

AERIAL PHOTOGRAPH: Submit a copy with timber typing. **(When more than 2 types)**

2.2.2.1 Systematic Sampling

In systematic sampling, plots are at fixed intervals with a minimum of two full measure
plots per timber type.

One full measure plot in a timber type is acceptable if falling boundary amendments isolate some plots after cruising.

The sampling grid spacing must be the same for each timber type. If the grids are different within a timber type in different blocks, then the types can be either labelled as unique types within a block or the areas can be re-cruised to meet the minimum sampling intensity.

In addition:

1. The cruise grid **should** be aligned in cardinal directions (i.e., North/South or East/West) unless otherwise approved in a cruise plan, and the grid **should** be referenced to the point of commencement (P. of C.) and **should** use 1/2 of the grid interval.

2. The maximum plot spacing listed in Section 2.1.2 (4) will ensure adequate coverage of the area for timber typing and tree and terrain information.

3. The sampling grid horizontal distances **must** be equidistant between plots and strips. The options are square grid or staggered grid. The option selected must be used consistently for the cutting permit.

2.6.3 Stratification

Consider the following:

1. Are there two or more distinctive timber types that can be identified and can readily be mapped.

2. The timber types can be readily mapped as a result of ground examination.

3. The following attributes **should** be considered when stratifying timber:

Major species composition, age, particularly younger and older immature and mature, height of major species, and crown closure.

****(*other attributes must be justified by licensee professional to gain acceptance)****DRM*

4. Where previous harvesting has resulted in patch-cuts, stratify as follows:
Where previous harvesting has resulted in patch-cuts that are mapped in the Results or Forest Tenure Administration systems, then map them on the cruise plan map. Exclude these harvested patches from the harvest area and do not sample them.

2.6.3.1 Forest Typing

Forest types must be kept fairly broad. There is a common tendency to overtype which nullifies any increases in sampling error achievement.

Forest type islands must not be smaller than 1.0 ha unless the block is less than 1.0 hectare and then the type area can match the block area.

Brush patches smaller than 1 ha are normally left in the forest type and sampled. Non-productive types, and other small areas reserved from harvesting, should be typed the same as the partial cut source documents.

All types that contain merchantable timber **must** be sampled unless the timber is reserved from harvesting in the partial cut source documents.

A map showing all forest and non-forest types **must** accompany the cruise plan and **must** be submitted prior to the commencement of field work. Modifications to the cruise plan typing can only be made when supported by the fieldwork and documented in the field traverse notes. Refer to **Section 7.3** for further information regarding the procedure for identifying and labelling timber types.

If typing changes after the cruising field work, due to reserves for example, cruisers may need to revisit the cruise plots in the field to ensure they are not influenced by these changes. Good traverse note taking, to identify potential reserves, will reduce the need for cruisers to re-visit cruise plots.

Use the following methodology for stratification:

1. Forest types **must** be distinguished before the cruise commences based on:
a. aerial photograph interpretation, or
b. the most recent forest cover maps,
2. Field inspection or sampling.
The type lines **must** be documented in the traverse notes.
3. If the transition from one timber type to another is very gradual and not detected in the field, then the type line **must** be drawn equidistant from dissimilar plots.
4. If non-forest types are stratified out of the harvest area, then they **must** not be sampled.

3.1.2 Tie-Points

• The cruise **must** originate from valid tie points such as unique photo and map locations like creek junctions, road locations, falling corners and GPS positions.

•All of the cruise strips **must** be linked together and to the boundary line. If the boundary traverse is completed after the cruise, it **must** be tied to the cruise in at least 2 places. ****DRM will not entertain cruise plans when boundaries are not in place****

•The tie-point or reference point of each strip-line **must** be well established on the ground so that it may be found at a future date.

•The first plot on a cruise grid will be located in the sample area and **should** be 0.5 the grid spacing on a North bearing from the POC. If North does not work, try East, if East does not work then try South, if South does not work then try West.

If the above options do not work then use full grid spacing starting at North, then East, then South, then West. Continue using multiples of 0.5 grid spacing and cardinal bearings commencing at North until a plot can be located in the sample area. A staggered grid is recommended.

3.1.2.1 Options for selecting the Point of Commencement (POC)

1. Select the map feature (creek, junction, etc.) or GPS station, which is closest to the access in the block that the cruiser's plan to use.

2. In the case of patch-cuts, the POC for each patch will be from the nearest plot in the adjacent patch.

3.1.7.1 Cruise Plan Map Standards

1. The cruise map will be legible and of good quality 1:5 000 or 1:10 000 scale.
2. The map will provide neat and clear lines, lettering and numbers.
3. The cruise map and Cruise Area Summary **shall** include the following:

a. tenure,
b. forest region and district,
c. scale used,
d. timber supply area,
e. north arrow and declination,
f. cut block(s) **must** be identified as mature or immature,
g. timber type lines and description, including a forest cover map of the cruise and adjacent areas,
h. plots **must** be numbered (measure and count identified), and
i. types, area and summary, see Section 7.3, Card Type C, timber type label codes.
j. existing and proposed roads,
k. adjacent logging and burn history,
l. inventory region and compartment number,
m. Forest Inventory Zone, and
n. PSYU.

3.1.7.2 Final Cruise Map Standards

Cruise maps **must** accompany the compilation report, and must be produced as required under Section 3.1.7.1 plus:

1. Scale of 1:5000, 1:10000 or as approved by the District Manager.

2. Plots used in the compilation are to be clearly indicated and numbered on the map.

3. Locations of baselines (when used), boundary tie lines, points of commencement and actual strip line location with direction of travel must be indicated,

4. Contour lines are recommended and must be indicated in such a fashion that they are clearly legible and indicative of local topographic features.

5. Physiographic features **must** be shown.

6. Legal survey features **must** be shown.

3.1.7.2 Final Cruise Map Standards con't

7. Forest and non-forest type boundaries **must** be clearly indicated.

8. Status clearance boundaries and cutting boundaries must be shown.

9. Any other features of significance with respect to the sale of Crown timber (i.e., windfall areas, fire areas, insect or disease infestations, fish-bearing streams), and contour logging considerations **must** also be shown.

10. Digital GPS Survey and mapping data **must** be provided upon request by the Ministry of Forests and Range if GPS technology is used.

11. Name of the person or company that produced the final cruise map.

PROVINCIAL
CRUISE PLAN AND MAP CHECK LIST

TENURE:	___ ___
C.P.:	___ ___
CRUISE AREA (ha):	___ ___
BASE MAP #:	___ ___

		YES	NO	N/A
A.	**TENURE and CRUISING AGENCY INFORMATION (Cruise Design – Parts A to C)**			
1.	Licensee's name shown?			
2.	Tenure and Cutting Permit numbers shown?			
3.	TSA, PSYU, FIZ, Region and Compartment Numbers indicated.			
4.	Cruising and Compiling Agencies indicated.			
B.	**HARVESTING and SAMPLING SYSTEM INFORMATION (Cruise Design -- Parts D to G, J and K)**			
11.	Harvesting and sampling system acceptable? (Part D)			
12.	Number of plots and plot type acceptable? (Part E)			
13.	Diameter Limits acceptable? (Part F)			
14.	Boundary marking acceptable? (Part G)			
C.	**TREE HEIGHTS AND HEIGHT METHOD (Cruise Design -- Part H)**			
15.	Tree height measuring instrument and estimation method indicated?			
D.	**CRUISE PLAN MAP and PLOT ESTABLISHMENT INFORMATION (Cruise Plan Map)**			
16.	Tenure Information adequate? (i.e. Licence, CP, FIZ zone, UTM Grid Nos, Reg and Comp. Nos. etc.)			
17.	Acceptable map scale? (1:5 000; 1:10 000)			
18.	Map area statement clearly shown? (Timber type descriptions and areas indicated?)			
19.	Timber types on the cruise plan map and forest cover map of the cruise and surrounding area provided?			
20.	Minimum of 2 plots per type?			
21.	Sufficient number of plots per type or 1.0 plots per hectare and SE waived?			
22.	Consistent plot and/or strip spacing within each type? (Maximum grid - 200m if cruise < 250 ha or 250m if cruise ≥ 250 ha)			
23.	Plots well distributed within each type?			
24.	Prism and/or fixed area plot size consistent in each type?			
25.	Cut block boundaries and forest types clearly delineated on map?			
26.	Baseline established and tied to a well defined geographical feature or a legal survey mark if possible.			
27.	P.O.C. established?			
28.	Strips tied to cutblock boundaries?			
29.	Plots and strips clearly marked?			

Note: There may be some exceptions to the above criteria. If in doubt check Chapters 2 and 3 of the *Cruising Manual*, or contact the Regional Cruising Coordinator.

Remarks: _____

Accepted:	**Rejected:**	**Date:**
Action:		
Signature:		
Approval/rejection letter sent by:		**Date:**

FS 694 HVA 2006/06 *Please be advised that this information may be released under the Freedom of Information and Protection of Privacy Act*

LICENSEE CRUISING PERFORMANCE

	Rating
0 Rejections in last 12 mnths.	1
1 Conditional Pass	3
1 Rejection in last 12 mnths	5
2+ Rejections in last 12 mnths	50

RISK CATEGORY

RISK POINTS

CHECK CRUISE SCHEDULED (Y/N)

VALUES CRITERIA

Quality of Timber	Rating
Decadent (140+ years old)	1
Immature (< 120 years old)	2
Mature (121–140 years old)	3

Timber Volume m3	
Less than 5,000	1
5,000 to 20,000	2
20,000 plus	3

Tenure Type	
L/C, Road Permit	1
Majors	3
Woodlots	5
BCTS	9

Leading Species	
Pw / Hw / Ba	1
Other	2
Cw	5

CONTRIBUTING STAND FACTOR CRITERIA

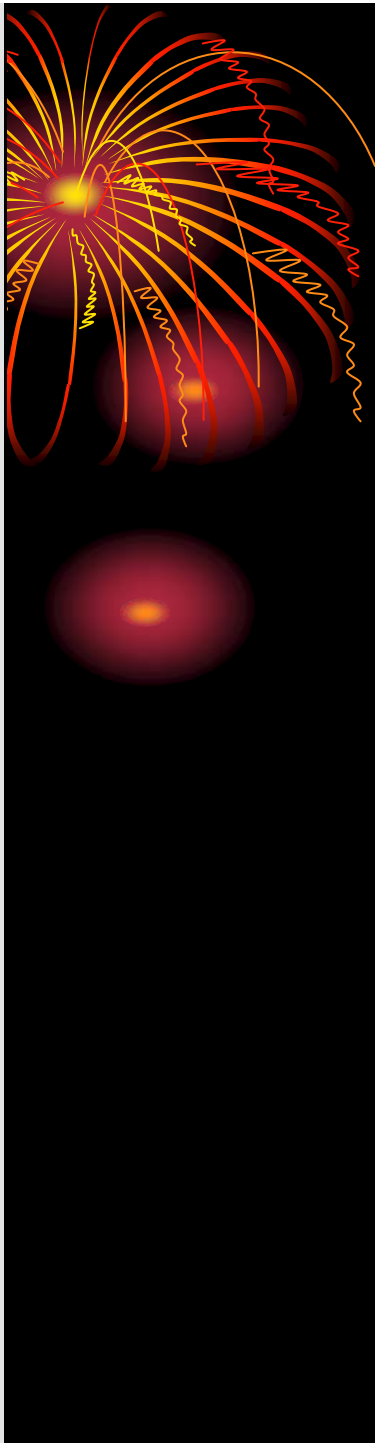
Timber Type	Rating
Uniform	1
Average	2
Patchy	3

Access	
4 x 4	1
Quad/Walking	3
Boat/Helicopter	6

Time to Access	
Less 1 hour	1
1 to 2 hours	3
Greater than 2 hours	6

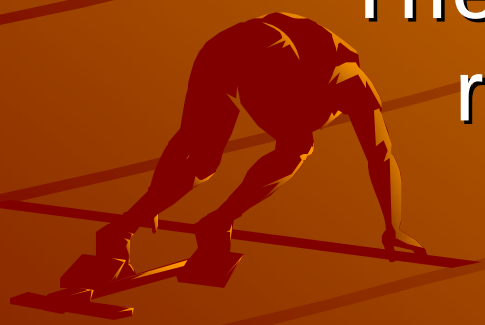
Stand Damage	
Endemic	1
Fire or Beetle (Catastrophic)	3
Blowdown (Catastrophic)	5

Comments:



Common ECAS issues:

The following list of issues result in delays to CP processing.



Issue	Comment
Contract dates	Make the effective date at least 10 working days following the date of submission to district. (as this is our process target).
Dat files	The cruise Dat file is a mandatory for every ECAS submission (Sect 4.6.1 PCM). Should we have to request this information it further delays processing.
Cruise cards	Signed original or copies of the cruise cards are mandatory (Sect. 3.1.1 PCM).

Issue	Comment
Cycle time – Common Jct Point	Complete a work sheet demonstrating cycle time calculations. Errors are found in speed/distance/and prorating. **Use negotiated speeds.**
Cad map	Side slopes by section for tabular roads is a district requirement. Failure to submit will cause processing delays.
Transposition error	Volume to the nearest meter-Region will not accept decimals. Volumes must agree exactly throughout submission.
Species transition	Whitebark pine to be compiled as Lodgepole pine and Grand fir to be compiled as Hemlock (see Sharepoint Web).

Issue	Comment
Road costing Engineered EST	Submission must include: • Machine costs in hours showing amount of material to be moved or hauled (recon and upgrade). • District averages are to be used in all cases unless otherwise approved in conjunction with the road permit. • Works on an FSR in an appraisal should be for NEW works only and approved by the ministry. Maintenance would be under road management. • ECE's are to be resolved at the road permit application stage!
Schedule B	For all submissions ensure a spread sheet (schedule B) is attached to allow for comparison of the faller reduction report with the net cruise comp, cutting specifications and the hectares to be compiled. Leave Tree Report from the Cruise Compilation is mandatory (4.6.1 PCM).

Common Field Work Errors

The following cruise parameters have been the basis for field work rejection

	Comments	References
Ages must be correct	Caution not all PL stands are even aged. Drill enough trees to confirm ages. Drill all species. Use a hand lens and sharpen your bores. Dead potential trees can be substantially younger than live trees.	Metric DWB Tables 1976 All FIZ
Path calls	•Scars are the biggest issue. •Must be sure there is callus tissue or exposed weathered wood; (5 yrs). •Watch for healed over scars – when in doubt take digital photo and send to Pete (note on cruise card). •Very beneficial to put notes in comments column regarding any tough decisions. •Dead potential, down trees - be sure to do the axe test for soundness in all 3 thirds of the tree (suggest side of bole as being better than high side or low side for X section). •Blind conk – Must chop to verify (appendix A-24 PCM).	All on A-30 Canker FIG 3.8 Tops
Walk thru plots	Make sure the tree radius is checked to see if tree counts once or twice (in exterior portion of plot). Use only when up against areas excluded from NAR.	3.4.2

	Comments	References
Plot center	•Make sure that the plot can be re-established for a check cruise or audit. •Include all pertinent info on the cruise card, plot centre and reference tree. •Blaze/paint reference tree where practical, metal tag to indicate bearing and slope distance to plot centre (ground). •Plot center pin or stake should be at sufficient height as to be easily recognized during a check. •If a plot center is revisited, the cruiser MUST resign the tag as well as the cruise card.	
POC	Good traverse notes from POC to block boundary along with metal tags and ribbon indicating the intersection with the boundary must be evident (GPS point at intersection is recommended).	Fig 3.1a,b Fig 3.2
Tie points – strips and boundaries	Tie points can be blk corner, road, creek jct, GPS point. If GPS points are used, strips must also be tied to each other. Each blk should have a POC and one boundary tie minimum. Cruise map and traverse notes must agree!	3.1.2

	Comments	References
Cruise maps/design	Cruise design and cruise maps must be complete with contents 3.1.7.2. Any changes to the cruise design must be communicated to the district through a rationalized amendment prior to the work being conducted.	FS 694 Sec 2.1.2, 2.2.2.2 Sec 3.1.7.2
Cruise cards	Cruise cards must be signed an dated! Full signatures and legible printed names must appear on each card. If a plot is revisited a new date and signature is mandatory	3.1.1
Heights	Watch in the trench, leaning trees require A+B=C squared approach. Project tree heights of broken top trees, use adjacent same species, same diameter as guide if possible.	3.5.3, 3.5.3.1
Diameter	Correct POG/High side on buttress roots.	3.5.4.2

PROVINCIAL CRUISE PLAN

TENURE:	FL	CRUISE BASE OR SCALE BASE
C.P.:	A79793	CRUISE
Base Map # 99X328 / 99X327		

A. ATTENTION:

District Manager: Rocky Mountain Forest District **Cruise Area (ha):** 200

Licensee: Mountain Goat Timber **Contact:** Miguel Sanchez

Geographic Location: Miskwasini Peak

TSA:	Cranbrook	PSYU:	Fernie	FIZ:	F	Inv. Reg. No:	20	Comp't. No:	1
Coast:	no	Immature:		Mature:		Both:	yes		

B. CRUISING AGENCY:

Agency Name:	West Coast Cruising	Name:	Timber Data Geeks
Cruiser Names (if known):	Fernando Rodriguez, Anita Gonzalez	Address:	789 Calgary Trail Calgary AB I9O 3T5
Address:	456 W Pender Vancouver BC F9Y 2R5		

C. TENTATIVE CRUISE DATES:

From:	Nov 13th 2006	To:	Dec 15th 2006
Proposed Years of Logging:	July 2007	Access:	Kishinena FSR

D. HARVESTING SYSTEM:

Harvesting System:	Helicopter
Systematic Grid:	Variable Retention Clearcut

1. Segregate silv. System (patch clearcut, seed tree, note avg. opening size)

E. PLOT NO:

Measure Plots:	200	Count Plots:	n/a	Estimated C.V.:	50	S.E. Waived (Y/N):	N
Grid Spacing (in m)	100	by	100	200 x 200 m if cruise < 250 ha 250 x 250 m if cruise ≥ 250 ha			
PLOT TYPE:	Prism/Relascope:	BAF 4-7	Fixed Area:	n/a	Plot Size (ha):	n/a	

F. MINIMUM DIAMETER LIMITS:

	COAST		INTERIOR	
	Mature	Immature	Species (cm to)	Exemption (cm)
Field Tally			17.5 DBH	PI 12.5 DBH
Compilation - Appraisal (cm)			17.5 DBH	PI 12.5 DBH
Compilation - Cutting Permit (cm)			17.5 DBH	PI 12.5 DBH

G. MARKING

	Ribbon Colour	Paint Colour	Axe Blaze	Other (tags)
Boundaries	Pink	Pink	yes	no
Baseline	Blue	-	-	-
Strips	Blue	-	-	-
Plot Centre	Blue/Yellow	Orange	yes	Metal tag
Tie Points	Blue/Yellow	-	-	-
Non Forest Types	Boundary-Pink	--	--	-
Riparian Areas	Boundary-Pink	-	-	-
Wildlife Tree Patches	Boundary-Pink	-	-	-
Other	-	-	-	-

H. TREE HEIGHTS: (TOTAL HEIGHT METHOD IS MANDATORY)

Height Estimation Method (ocular, vertex, etc.)	Measure/ Pythagoras	Height Measuring Instrument (clino, hypsometer, etc.)	Clino/tight chain

I. OTHER:

Comments: Very sensitive site, slope stability issues, harvest design/layout/method approved by MOF/MOE

Note The original traverse notes must be provided to Forest Service staff upon request.:

Signed:	Miguel Sanchez	RPF 68I9034	Oct 11th 2006
	Authorized Licensee Representative	RPF/RFT/ATC or ATE Number	Date:

Are block(s) in an approved Forest Stewardship or Forest Development Plan? Yes

FS 693 HVA 2006/06

Please be advised that this information may be released under the Freedom of Information and Protection of Privacy Act

SECTIONS J, K, L (TO BE FILLED OUT WHEN REQUIRED)

J. STRATIFIED SYSTEMATIC SAMPLING: (Calculate sampling requirements for each timber type)

				A	B	C	D	E	F	G	H
Type No.	Type Description	BEC Subzone /Variant	Plot/Prism size	Type Area (ha)	Average m^3/ha	Estimated Vol/Type m^3	Type Vol. % of Total Vol.	Estimated Type CV	Weighted Type CV	Total Plots/CF	Grid Spacing
1	Pl10	MSdk	4-7	22ha	150	3300	7.6%	35	-	22	100x 100
2	Pl8Lw2	MSdk	4-7	100ha	200	20000	45.6%	50	-	100	100x 100
3	Lw7Pl3	MSdk	4-7	36ha	170	6120	14.0%	75	-	36	100x 100
4	Cy9Fd1	MSdk	4-7	28ha	400	11200	25.5%	60	-	30	100x 100
5	Pl5Lw5	MSdk	4-7	14ha	230	3220	7.3%	65	-	15	100x 100
6											
7											
			Tot. Ha's	200	Tot. Vol.	43840	Tot. Weighted CV			203	

EXPLANATION OF FORMULA

$C = A \times B$

$D = \frac{C}{\text{Sum } C1...7} \times 100$

E = cruising manual, section 2.62

Variable Plot: $F = D \times E$

Fixed Plot: $F = A \times E$

G = cruising manual section 2.4, 2.5

$H = \sqrt{\frac{\text{Total hectares} \times 10{,}000}{\text{G (number of plots)}}}$

K. SOURCE OF CV ESTIMATES

Type 1: Based on adjacent cruise data

Type 2: Based on adjacent cruise data

Type 3: Based on pre-layout silvicultural plot data

Type 4: Based on pre-layout silvicultural plot data

Type 5: Based on pre-layout silvicultural plot data

Type 6:

Type 7:

L. INSTRUCTIONS FOR SECTIONS

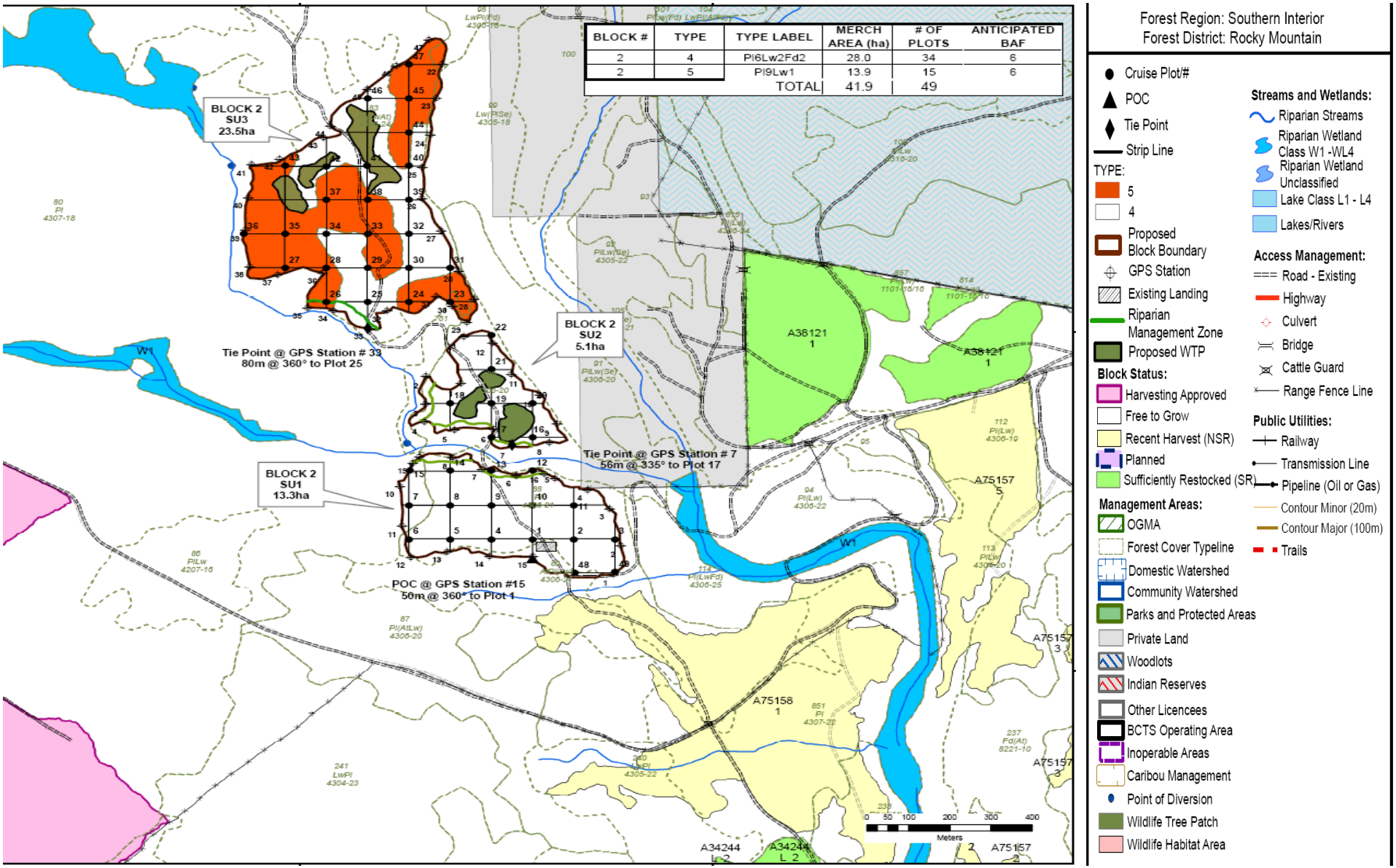
A Enter district and tenure information.
B Enter the name and address of the cruising and compiling agencies.
C Enter the tentative start and completion dates of the field work.
D Enter yes beside applicable headings.
E Enter the number of plots and the grid spacing.
F Enter the diameter limits measured and compiled to, and prism BAF.
G Enter the colour(s) of paint and flagging used, and the type of blazing and plot tags.
H Enter the appropriate height estimation method, and height measuring instrument used.
I Enter remarks if required. Signature and date are mandatory.
J OPTIONAL. Enter data ONLY if stratified systematic sampling is used. Type description – include: species/ age class/ height class/ site quality.
K OPTIONAL. Enter source of CV estimates.

ATTACH: CRUISE PLAN MAP. Drawn to 1:5,000 or 1:10,000 scale, topography, (streams and roads), air photo numbers, strips and baselines, plot locations, boundaries, area in the merch and total by cut block, label the cut block (mature or immature). MUST BE SUBMITTED WITH THIS FORM.

AERIAL PHOTOGRAPH: Submit a copy with timber typing.

Please be advised that this information may be released under the Freedom of Information and Protection of Privacy Act

DISTRICT TO FORWARD COPY TO REGION



BLOCK #	TYPE	TYPE LABEL	MERCH AREA (ha)	# OF PLOTS	ANTICIPATED BAF
2	4	Pl6Lw2Fd2	28.0	34	6
2	5	Pl9Lw1	13.9	15	6
		TOTAL	41.9	49	

Forest Region: Southern Interior
Forest District: Rocky Mountain

- Cruise Plot/#
- POC
- Tie Point
- Strip Line

TYPE:
- 5
- 4

- Proposed Block Boundary
- GPS Station
- Existing Landing
- Riparian Management Zone
- Proposed WTP

Block Status:
- Harvesting Approved
- Free to Grow
- Recent Harvest (NSR)
- Planned
- Sufficiently Restocked (SR)

Management Areas:
- OGMA
- Forest Cover Typeline
- Domestic Watershed
- Community Watershed
- Parks and Protected Areas
- Private Land
- Woodlots
- Indian Reserves
- Other Licencees
- BCTS Operating Area
- Inoperable Areas
- Caribou Management
- Point of Diversion
- Wildlife Tree Patch
- Wildlife Habitat Area

Streams and Wetlands:
- Riparian Streams
- Riparian Wetland Class W1 -WL4
- Riparian Wetland Unclassified
- Lake Class L1 - L4
- Lakes/Rivers

Access Management:
- Road - Existing
- Highway
- Culvert
- Bridge
- Cattle Guard
- Range Fence Line

Public Utilities:
- Railway
- Transmission Line
- Pipeline (Oil or Gas)
- Contour Minor (20m)
- Contour Major (100m)
- Trails

That's all folks……

- Now it is time for you to clear up any questions you may have regarding the RMFD cruising business processes, the expectation letter, submission requirements, ECAS issues or PCM interpretations.
- **SITCA seminar May 16 & 17 - Kelowna**
- Thanks for your attention!