

# SITE PLAN CP 405 BLOCK 5 COOPER CREEK CEDAR LTD.

## A. TENURE IDENTIFICATION

LICENCE NO.: <b>FL A30171</b>	CP: <b>405</b>	BLOCK: <b>5</b>	TIMBER MARK: <b>FE5405</b>	UTM: <b>508291 E, 5551047 N</b>	LICENSEE NAME: <b>Cooper Creek Cedar Ltd.</b>
AREA UNDER TENURE (ha): <b>11.4</b>	MAPSHEET/OPENING #: <b>082K016</b>	ELEVATION: <b>1010-1215m</b>	LOCATION: <b>Salisbury Creek</b>		

## B. AREA SUMMARY

AREA OF NO PLANNED REFORESTATION (ha) (NPR)									
PERMANENT ACCESS	ROCK	WATER	SWAMP	OTHER NP	NC>4ha	WILDLIFE TREE RETENTION AREA (HA):	IMMATURE	VISUAL RESERVE	TOTAL NPR AREA
1.3	-	-	-	-	-	1.4	-	3.8	6.5
NET AREA TO BE REFORESTED (ha)									
SU	SU AREA DESCRIPTION								NET AREA TO BE REFORESTED:
	The block is located on Salisbury Face.								
A	<p><b>ICH dw1 103' 104<sup>s</sup></b></p> <p>Aspect is mainly southwest facing, slopes range from 20 to 80% with an average of 50%. Surface and subsoil texture is Sandy-Loam (SL). Soils are well drained. Coarse fragment content is Moderate (55-65%). Moisture regime is suberic and nutrient regime is medium. Humus form is a thin mor (4.0cm thickness) and rooting depth is 33cm. Soils are <b>sensitive</b>.</p> <p>Average stand density (all species) is 340 stems/ha. Most stems fall within the 25-75cm DBH classes. Approximate species composition by density is Fdi 89% and Ep 11%. Stand age ranges from 89-138 with an average of 114 years old. The understory contains low densities of Fdi and Ep regen, saplings and poles that are mainly in poor (suppressed) to moderate condition but growing well in openings.</p> <p>TU 1 (2.7 ha)</p> <ul style="list-style-type: none"> <li>• <b>Conventional Ground Based Harvesting</b> Methods and a Clearcut silviculture system with reserves.</li> <li>• <b>Retain 15-20 stems per hectare</b> in single tree distribution or clumps.</li> </ul> <p>TU 2 (2.2 ha) <b>Cable Harvesting Methods</b> with a Clearcut silviculture system with reserves.</p> <p>See Section G – Silviculture Systems for leave tree information.</p>								4.9
TOTAL NET AREA TO BE REFORESTED:									4.9
TOTAL AREA UNDER THE PLAN:									11.4

## SOIL DISTURBANCE

SU	Max. Allowable Soil Disturbance (%)	Max. Amount TAS May Exceed MASD Prior to Rehab (%)	Max. Allowable Soil Disturbance For Roadside Work Areas (%)	Maximum Permanent Access Structures (%)
A	5.0	5.0	25%	11.4

SU	CRITICAL SITE CONDITIONS THAT AFFECT THE TIMING OF OPERATIONS AND HOW THEY AFFECT THEM
A	<ul style="list-style-type: none"> <li>• Avoid machine travel during periods of soil saturation to reduce risk of soil compaction. Utilize designated harvesting trails, or a supporting snow pack in the winter.</li> <li>• Spot piling along roadsides, landings and within the NAR may be necessary to remedy high levels of coarse woody debris.</li> </ul>

## RESULTS AND STRATEGIES

Biodiversity Objectives	
Result or Strategy Description	<b>3.5.3 - Old and Mature Forest</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>'KBHLP Objective 2 – Old &amp; Mature Forests'</p> <p>There are no Mature + Old forest requirements in this landscape unit, the Old forest target is met with OGMA area.</p> <p><b>Landscape Unit K16</b></p> <p>There is planned harvest of Age Class 8 in the ICHmw2 therefore an analysis of Old was completed as per direction from the District Manager. Post CP 405 harvest there is a surplus of Old in the ICHmw2 K16.</p>
Result or Strategy Description	<b>3.5.3 - Green-up</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	'KBHLP Objective 4 – Green-up' – The proposed cutblock is consistent with FPPR Section 65(2).
Result or Strategy Description	<b>3.5.1 - Objectives set by Government for Wildlife and Biodiversity – Landscape Level</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>'KBHLP Objective 4 – Green-up'.</p> <p>The proposed cutblock complies with Sections 64 and 65 of the FPPR. Adjacent existing cutblocks are consistent with FPPR Section 65.</p>

<b>Cultural Heritage Resources</b>	
Result or Strategy Description	<b>3.7 - Objectives set by Government for Cultural Heritage Resources</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	A First Nations (FN) referral letter was sent to the FN Bands identified as having Area of Responsibility on January 9, 2020. CCC has completed the FN Referral/Engagement process. No changes were required in Block 5.
<b>Recreation Resources</b>	
Result or Strategy Description	<b>4.3 - Recreation Sites</b>
Applies:	NO
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	The proposed cutblock is not located within a designated Recreational Area or Trail with legal objectives; therefore, managing for Recreation Resources is not applicable.
<b>Riparian Management</b>	
Result or Strategy Description	<b>3.4.1 Objectives set by Government for Fish, Water, Wildlife &amp; Biodiversity in Riparian Areas</b>
Applies:	NO
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	Salisbury Creek is located $\geq 300\text{m}$ from block 5. Management of streams in block 5 meets the requirements set out in section 3.4.1 of the FSP.
<b>Soil Objectives</b>	
Result or Strategy Description	<b>3.1 - Objectives set by Government for Soils [FPPR Section 5 and 12.1(1)]</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<ol style="list-style-type: none"> <li>1) <b>SU A</b> contains sensitive soils and soil disturbance will not exceed 5%. Specific measures for mitigating soil disturbance levels are addressed in Section F of this Site Plan.</li> <li>2) Areas of the block where temporary access structures are required will be rehabilitated. Specific rehabilitation measures are addressed under Section F of this Site Plan.</li> <li>3) PAS will exceed the recommended limit of <b>7.0%</b> and is estimated at <b>11.4%</b>. The 7% allowable disturbance for PAS is exceeded in this block due to its small size and the existing road, including three switchback's, within the block boundaries.</li> <li>4) Areas within the block assigned to roadside work areas will not exceed <b>25%</b>.</li> </ol>
<b>Visual Objectives</b>	
Result or Strategy Description	<b>3.6 – Visual Quality</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<b>CP 405</b> -Salisbury is in a Partial Retention (PR) visual landscape unit. A Visual Impact Assessment was completed by Timberland Consultants June 3, 2020 and the proposed blocks meet the definition and requirements of PR. Irregular shaped boundaries that follow natural terrain features, and a large reserve area serve to improve visual quality from viewpoints. The proposed development of <b>CP405-Salisbury Face</b> meets the established VQO of PR from the selected viewpoints.
<b>Water Management Objectives</b>	
Result or Strategy Description	<b>3.4.4 - Consumptive Use Streams</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	'KBHLP Objective 6' – Block 5 is located within Salisbury Creek domestic watershed. There is one POD for domestic use (PD23279). A referral letter was sent out April 16, 2020. CCC has completed the referral process with the licence holder.  The block is located $\geq 300\text{m}$ from Salisbury Creek.
<b>Wildlife Objectives</b>	
Result or Strategy Description	<b>3.3.1 - Objectives set by Government for Wildlife - Species at Risk – Section 7 of the FPPR</b>
Applies:	NO
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	The block is not within a Wildlife Habitat Area. There were no sightings of Species at Risk during field development of this cutblock.
Result or Strategy Description	<b>3.5.2 - Objectives set by Government for Wildlife and Biodiversity – Stand Level</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	Two internal Wildlife Tree Retention Areas are planned for this block, totalling <b>1.4 ha</b> . Overall wildlife tree retention percentage for block 5 is approximately <b>12.3%</b> . Total WTRA for CP405 is 13.2 ha which constitutes approximately 6.9% of the gross area of the permit. The WTRA area meets the minimum percent requirements stated in the FPPR for each block (3.5%). The total WTRA percentage for areas harvested by CCC after one year beginning April 1 will be consistent with FPPR Section 66(1).  Risks to Mule deer were mitigated by boundary changes earlier development as per recommendations by Brenda Herbison MSc. R.P. Bio (see report: "Proposed Cutting Permit 405 on the Salisbury Face, east side of Kootenay Lake: Assessment of habitat and risks for mountain caribou and other wildlife").
Result or Strategy Description	<b>3.3.2 - Ungulates</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	This block is located within an Ungulate Winter Range Management Unit, 99-MD-127, with specific requirements in the ICH dw. Analysis completed by Timberland shows post-harvest, Ungulate Winter Range Management Unit 99 meets the minimum retention and maximum disturbance levels for snow interception and forage areas. See RESULTS and STRATEGIES section 3.5.2 - Objectives set by Government for Wildlife and Biodiversity – Stand Level.

## ADDITIONAL COMMENTS

<p><b>Consistency Statement</b></p> <p>This block is consistent with the approved <b>2018 to 2023 Forest Stewardship Plan for Cooper Creek Cedar Ltd – Forest Licence A30171</b>. This Site Plan is prepared for <b>FL A30171 CP 405 Block 5</b>, in accordance with FRPA Section 10(1), (2) &amp; (3).</p>
<p><b>Community Watersheds</b></p> <p>FSP Section <b>3.4.3</b></p> <p>Not applicable - The proposed block is not located within a Community Watershed.</p>
<p><b>Enhanced Resource Development Zones</b></p> <p>FSP Section <b>3.2.1</b></p> <p>'KBHLP Objective 7 – Enhanced Resource Development Zones – Timber'</p> <p><b>Block 5</b> is not within an Enhanced Resource Development Zone.</p>
<p><b>Fire Maintained Ecosystems</b></p> <p>FSP Section <b>3.5.3</b></p> <p>'KBHLP Objective 8 – Fire maintained Ecosystems'. There are no NDT 4 ecosystems in the FDUs under this FSP, therefore the requirement to create a Result/Strategy for this objective does not apply.</p>
<p><b>Fisheries Sensitive Watersheds</b></p> <p>FSP Section <b>3.4.2</b></p> <p>At the time the FSP was developed there were no designated "Fisheries Sensitive Watersheds" in FDUs under this FSP, therefore the requirement to create a Result/Strategy for this objective does not apply.</p>
<p><b>Invasive Plants</b></p> <p>FSP Section <b>4.1 – Invasive Plants</b></p> <p>The IAPP website was checked on December 31, 2019. The following invasive species were reported in nearby areas to <b>CP 405 (Salisbury Face)</b>: Bull thistle, Burdock species, Canada thistle, Chicory, Common tansy, Diffuse knapweed, Orange hawkweed, Oxeye daisy, Spotted knapweed, St. John's wort and Yellow Hawkweed.</p> <p>Measures to prevent the introduction or spread of invasive plants noted in the FSP include:</p> <ul style="list-style-type: none"> <li>• Cleaning equipment before moving from a worksite with existing infestations to a new work site.</li> <li>• Minimizing soil disturbance during primary forest activities (PFA).</li> <li>• Reseed exposed mineral soil, resulting from a PFA in the first available fall or spring within 12 months following the soil disturbance. Plan planting of cutblocks as soon after harvesting as possible.</li> <li>• During PFAs minimize soil disturbance by: <ul style="list-style-type: none"> <li>• Harvest on a snowpack, when feasible</li> <li>• Random skid to designated skid trails to minimize skidder traffic on the ground</li> <li>• Utilize benches for skid trails to minimize side cuts</li> <li>• Utilize brush to construct skid trails to reduce contact with the ground</li> <li>• Use overhead cable harvesting systems on steep ground</li> </ul> </li> <li>• Where grass seeding is undertaken, CCC will use certified grass seed (Canada common #1 or better grade) from reputable suppliers to ensure premium quality free of invasive plant seed, or a seed mix recommended by a MFLNRO range specialist.</li> <li>• See FSP for additional strategies and practices regarding invasive plants.</li> </ul>
<p><b>Natural Range Barriers</b></p> <p>FSP Section – <b>4.2</b></p> <p>Not applicable. There are no range tenures located in the FDUs covered by this FSP.</p>
<p><b>Timber</b></p> <p>FSP Section <b>3.2 - Timber</b></p> <p>As per Sec 12(8) of the FPPR, results or strategies are not required for an objective set by government for timber.</p>
<p><b>Wildlife - Caribou</b></p> <p>FSP Section – <b>3.3 and 3.5.3</b></p> <p>'KBHLP Objective 3 – Caribou' was cancelled and replaced by <i>GAR Order #U-14-012 – Mountain Caribou – Southwest Kootenay Planning Unit</i>. This block does not fall within a Caribou Management Zone.</p>
<p><b>Wildlife – Grizzly Bear Habitat - Connectivity</b></p> <p>FSP Section <b>3.3 and 3.5.3</b></p> <p>'KBHLP Objective 5 – Grizzly Bear Habitat &amp; Connectivity Corridors'. Not applicable to the FDU which includes this block.</p> <p><b>Block 5</b> falls within Connectivity Corridor area but there is no mature target for this Landscape Unit and therefore no requirement to consider connectivity.</p>

## STOCKING REQUIREMENTS

SU	NAR (ha)	Standards ID #	Other Performance Standards
A	4.9	1062312	See Section H - Stocking Requirements

## C. MANAGEMENT OBJECTIVES & STRATEGIES

<p><b>C.1 MANAGEMENT OBJECTIVES</b></p> <ul style="list-style-type: none"> <li>Objectives for <b>CP 405 Block 5</b> include meeting visual quality objectives, protecting nearby streams, maintaining water quality, managing for fire mitigation and a changing climate, and maintaining rich biodiversity and wildlife values: All of these objectives are carefully considered, and a balance between all management objectives is the goal.</li> <li>Harvest this mature stand of <b>Fd Ep</b> for sawlogs, chips and value-added products and manage for a healthy, free growing stand of planted and natural <b>Fd Lw Py (PI Pw)</b> for similar end products.</li> <li><b>Wildlife Tree Retention Area (WTRA):</b> Three reserves are planned for retention, totalling <b>1.4 ha</b> in size (12.3% of the block). The reserves shelter mature stand values, wildlife values and portions of stand structure that are similar to the harvest area.</li> <li><b>Kootenay Boundary Land Use Plan – Implementation Strategy (June 1997):</b> This block is located within the designated <b>Landscape Unit K16</b> (Hamill Creek) – Low BEO Assignment.</li> </ul>
<p><b>C.2 CONDITIONS THAT MUST EXIST AFTER HARVEST OR TREATMENT TO ACCOMMODATE KNOWN FOREST RESOURCES</b></p>
<p><b>C.2a WILDLIFE</b></p>
<p><b>Stand Level attributes/ concerns identified:</b></p>
<p><b>Ungulate Winter Range:</b> See RESULTS AND STRATEGIES Section 3.3.2 Ungulates</p>
<p><b>Migratory Bird Habitat Assessment:</b> Block 5 is within Migratory Bird Risk Rating 4 polygon (Age and Height Classes derived from VRI, ICH Fd &gt;75%) The management matrix therefore requires:</p> <ol style="list-style-type: none"> <li>The entire site be scheduled for harvest outside the Restricted period 2 (R2: May 15 – July 20) <b>OR</b></li> <li>The implementation of one or more Best Management Practice (BMP) with a Degree of Protection rank of at least 2 (moderate).</li> </ol> <p>BMP PL2 has been implemented on site to reduce the likelihood of incidental take and to conform to CCC's adopted management strategy. PL2 refers to the implementation of a patch/edge retention system around biodiversity anchors encompassed in the WTRAs and Visual reserve.</p> <p>BMP PL3 and SO4 have been implemented as well. PL3 refers to the appropriate training of forest planners, layout personnel, and forest workers. SO4 refers to operation specific recommended practices when chance encounters of active nests occur.</p>
<p><b>Site / Stand Attributes</b></p> <p>Slope values are moderate to steep in the block, with small benches in the southern / lower parts. Upper-elevation ICH dw1 site conditions. Aspect is mainly southwest facing, with long continuous slopes. Mid slope location. Vegetation cover is low-moderate over most of the unit. Existing coarse woody debris levels are low (15-30cm diameter) in most areas with small patches of high blowdown Pli and/or Fdi.</p> <p>SU A Stand type by density is: Fdi<sup>89</sup>Ep<sup>11</sup>. Some Fd, Lw and Ep snags with loose bark are scattered throughout the stand.</p> <p>Average stand density (all species) is 340 stems/ha. Most stems fall within the 25-75cm DBH classes. Approximate species densities are, Fd 302 stems/ha and Ep 37 stems/ha. Stand age ranges from 89-138 with an average of 114 years old. The understory contains low densities of Fdi and Ep regen, saplings and poles that are mainly in poor (suppressed) to moderate condition but growing well in openings.</p> <p>Forest cover adjacent to the block includes similar mature stands.</p>
<p><b>Actions prescribed:</b></p>
<p>Total Area specified for the retention of wildlife trees <b>1.4 ha</b> (12.3% of gross area)</p>
<p><b>Wildlife Tree Retention Patch (WTRA):</b></p> <p><b>WTRA-5 (1.2 ha) Fdi 7 At 3 (Ep Lw) – 90 years – 32.0m – 20%cc:</b> This WTRA encompasses a decadent centre of down and standing, IBD and DRA killed Fd. The canopy opening has allowed for mature deciduous establishment creating browsing, perching, nesting and cover values. The large diameter dead Fd add wildlife values as well. Ungulate scat, browse and trails noted.</p> <p><b>WTRA-4 (0.2 ha) Lw 9 Fd 1 (Ep PI) – 110 years – 28.0m – 15%cc:</b> An area of limited overstorey and moderate coniferous and deciduous understorey. Several DML infected Lw. Good forage and cover values; good nesting and perching opportunities.</p> <p>The WTRAs have been established in part, as a best management practice for the reduction of migratory bird incidental take and to ensure compliance with Visual Quality Objectives.</p>
<p><b>C.2c FISHERIES</b></p>
<p>There are no fish streams within or directly adjacent to the block.</p> <p>See Section E.1 for Riparian Management Strategies.</p> <p>Drainage from the majority of the cutblock area flows downslope to the West towards Kootenay Lake, and to the north towards Bulmer Creek.</p>
<p><b>C.2d WATERSHEDS</b></p>
<p>See RESULTS and STRATEGIES Section 3.4.4 - Consumptive Use Streams</p>
<p><b>C.2e RECREATION</b></p>
<p>Not applicable. The proposed cutblock is not located within a designated Recreational Area or Trail with legal objectives.</p>
<p><b>C.2f BIOLOGICAL DIVERSITY</b></p>
<p><b>Landscape Unit - K16 (Hamill):</b> Low BEO Assignment.</p>
<p><b>C.2g VISUAL RESOURCE MANAGEMENT</b></p>
<p>See RESULTS AND STRATEGIES Section 3.6 Visual Quality</p>
<p><b>C.2h CULTURAL HERITAGE</b></p>
<p>See RESULTS AND STRATEGIES Section 3.7 - Objectives set by Government for Cultural Heritage Resources</p>
<p><b>C.2i RANGE</b></p>
<p>Not applicable. There are no range tenures located in the FDU's covered by this FSP.</p>

<b>C.2j OTHER RESOURCES</b>
<p><b>Trapping / Guiding:</b> Trappers or guiding license holders in the area will be identified and notified through the Forest Stewardship Planning process.</p> <p><b>Windthrow:</b> Windthrow hazard is <b>Moderate</b> for adjacent mature stands. Some of these stands have already been partially exposed to winds from past harvesting and right-of-way harvesting. TU1 contains dispersed internal retention and the block is relatively small in size and has irregular boundaries. Mature stands surrounding the harvest area have a component of windthrow resistant species and are similar to the block with moderately well to well drained soils. Current windthrow within the stand is largely restricted to mortality centres caused by Armillaria and bark beetles. Soils are coarse and well drained with 33 cm rooting depth.</p>
<b>CONDITIONS NOT APPLICABLE TO THIS SITE PLAN</b>
The following conditions were considered and found to be not applicable to this site plan: None identified.

**D. ECOLOGICAL INFORMATION AND SITE CHARACTERISTICS**

<b>D.1 STANDARDS UNITS AND CRITICAL SITE CONDITIONS</b>						
	<b>BIOGEOCLIMATIC</b>					
<b>SU</b>	<b>TREATMENT UNIT</b>	<b>ZONE</b>	<b>SUBZONE</b>	<b>VARIANT &amp; PHASE</b>	<b>SITE SERIES</b>	<b>SITE TYPE</b>
A	1	ICH	dw	1	103 <sub>7</sub> 104 <sub>3</sub>	-

**E. MANAGEMENT STRATEGIES**

<b>E.1 RIPARIAN MANAGEMENT STRATEGIES</b>				
<b>RIPARIAN RESERVE ZONE (RRZ)</b>				
RIPARIAN/LAKE ID	RIPARIAN/LAKE CLASS	HARVESTING Y/N	SU XREF	DESCRIPTION OF THE PURPOSE AND EXTENT OF REMOVAL OR MODIFICATION OF TREES AND ANY RELATED FOREST PRACTICES IN RIPARIAN RESERVE ZONE(S)
N/A	-	-	-	-
<b>RIPARIAN MANAGEMENT ZONE (RMZ)</b>				
RIPARIAN/LAKE ID	HARVESTING Y/N	SU XREF	MANAGEMENT STRATEGIES FOR RIPARIAN OR LAKESHORE MANAGEMENT AREAS INCLUDING PROTECTING STREAM BANKS (if there is no RRZ), MAINTAINING SHADE, AND DEBRIS MANAGEMENT. IF FELLING AND/OR YARDING ACROSS STREAMS. INCLUDE EITHER THE RESIDUAL BASAL AREA <u>OR</u> DENSITY FOR RMZ (S) AND LMZ (S).	
N/A	-	-	-	
<b>NON-CLASSIFIED (NC) RIPARIAN AREAS</b>				
RIPARIAN/LAKE ID	SU XREF	MANAGEMENT STRATEGIES		
N/A	-	-		
Salisbury Creek is located >300m from the block boundary. The harvest boundary was placed back from the slope break into Salisbury creek.				

E.2 FOREST HEALTH MANAGEMENT STRATEGIES					
SU	Code	Nelson Region DRA Risk Factors	Points	Relative Risk	Comments
A	DRA	Site factors Host factors Inoculum potential Disease factors	8 5 0 17	H M L M	<ul style="list-style-type: none"> <li>• Armillaria is present at moderate levels within the stand.</li> <li>• The Nomographic Zones in Section 3.0 of the "<a href="#">Armillaria Root Disease Management Guidelines for the Nelson Forest Region</a>" (June 1998) indicate that Alternative or Intensive deferred treatments for root disease management are appropriate for this site, should Armillaria become a problem.</li> <li>• Alternative treatments will include planting a species mixture that includes species tolerant and /or moderately susceptible to Armillaria (e.g.: Lw, Py, Pw). Fd (highly susceptible) may be included but should be limited to a maximum of 50% of the mix. Microsite selection should reflect buffer zones around infected stumps, if they can be identified.</li> <li>• Hand-pulling (preferred) or pop-up spacing (alternative) should be considered in the future should Armillaria become a limiting factor in meeting regeneration or free growing requirements (see section H).</li> <li>• Stumping or pushover harvesting treatments are not suitable due to moderate and steep slopes and sensitive soils.</li> </ul>
			30	M	
Other Forest Health Factors					
SU	Code	%	Comments		Current risk to inventory
A	IBD	1	<p>A walkthrough grid survey was completed by Nazca Consulting Ltd. of CP 405 Salisbury on September 6, 7, 10, 11, 17 and 18 2019. Only endemic levels of Fir beetle was found with little to no active population. Due to the high risk rating of the stand and the high consequence should an epidemic occur a treatment plan has been designed to manage the infestation. Funnel traps and subsequent trap trees in the area may be utilized if required based on the results of post-harvest spillover probes conducted by a Qualified Professional.</p> <p>Leave tree prescriptions require Douglas Fir that exhibits signs of stress, scarring, decay or general poor health are not to be selected for retention. Depending upon the severity of the infestation post-harvest, MCH packets may be applied to dispersed retention in areas of high IBD presence determined by the assessment of a Qualified Professional.</p> <p>Trap trees may be considered for beetle management if timing of road building and block harvesting permits. This is to be determined by a qualified professional.</p>		High
A	DML	1	Lw forms a very small component of the stand. DML infected stems were noted outside harvest boundaries. Lw should not be planted within 10m of a mature suspected mistletoe infected tree.		nil
A	DSB	0	Pw is absent or present in minor amounts in the current stand. A small amount of Pw may be planted in SU A. Plant only rust resistant stock. Expect high incidence of white pine blister rust on any naturally regenerated Pw.		nil
Expected future risks and actions					
<p>Forest health information was collected during SP field data collection in <b>October 2019</b>.</p> <p>Stand health risks in the future include a warm aspect and possible moisture deficits during the growing season.</p> <p><b>SU A:</b> Timber type of the pre-harvest stand volume is: Fdi<sup>98</sup>Ep<sup>2</sup></p>					

E.3 VEGETATION MANAGEMENT STRATEGIES	
LIVESTOCK TO BE USED FOR VEGETATION MANAGEMENT: YES: <input type="checkbox"/> NO: <input checked="" type="checkbox"/>	
See Section <b>H5 – Brushing / Stand Tending</b> for vegetation management strategies.	
E.4 COARSE WOODY DEBRIS (CWD) MANAGEMENT STRATEGIES	
<p>Existing coarse woody debris levels are low (5%) (15-30cm diameter) in most areas with small patches of higher blowdown cover in forest health affected centres. Most CWD is moderately well decayed Fdi and Ep.</p> <p>(FPPR Section 68): <b>Manage for the minimum of 4 logs per hectare</b>, each being at least <b>2 metres</b> in length and at least <b>7.5cm</b> in diameter at one end.</p> <p>See the SITE PREP section (K.1) for additional CWD management strategies.</p>	
E.5 ARCHAEOLOGICAL IMPACT ASSESSMENT	
<p>A Preliminary Field Reconnaissance (PFR) of CP 405 was conducted by Ursus Heritage Consulting Ltd. in October 2019 that centered on archaeological potential polygons identified in a 2007 desk-top AOA conducted by Choquette (2007).</p> <p><b>Conclusions:</b></p> <p><b>Block 5</b> overlaps a polygon with archaeological potential. No archaeological sites were identified during the PFR and the refined in-field assessment of the potential for archaeological sites within CP 405 is assessed as <b>Low</b>.</p> <p><i>This low archaeological potential assessment is based on the presence of steeply sloping and undulating terrain and an absence of archaeologically significant landforms, such as level benches and/or promontories.</i></p>	

## F. SOIL CONSERVATION

### F.1 SITE DISTURBANCE

SU	HAZARD RATINGS			SOIL CHARACTERISTICS		TYPE OF UNFAVOURABLE SUBSOIL
	SOIL COMPACTION	SOIL DISPLACEMENT	SURFACE SOIL EROSION	DEPTH TO UNFAVOURABLE SUBSOIL (cm)		
				MIN(cm)	MAX(cm)	
A	High	Very High	High	60	60	No restricting layer to 60cm

### F.2 SOIL DISTURBANCE LIMITS

**SU A:** ARE THERE SENSITIVE SOILS?  YES  NO

MAX. PROPORTION OF TOTAL AREA UNDER THE PRESCRIPTION ALLOWED FOR PERMANENT ACCESS STRUCTURES (PAS): 11.4%

**Roadside harvesting or temporary landings will be used.**

**Deactivation of Permanent Access Structures:** Any landings will be deactivated – debris will be piled & burned, water control will be installed around all landings.

#### Detailed Terrain Stability Field Review (Report dated February 13, 2020)

W. Halleran P. Geo, L. Eng. Of Apex Geoscience Consultants Ltd. completed a detailed terrain stability review during the 2019 field season. The following were assessed.

- A terrain stability site review of potential harvesting and road construction on Salisbury Face.
- A review of drainage control on the existing road network.
- An assessment of stability of the existing roads on sections where possible fillslope failures could progress to debris slides.
- Assess the sensitivity to increased or altered slope drainage on downslope areas.
- A Terrain Stability Field Review of the lower blocks (where they impinge on Terrain Stability Mapped polygons of IV and V)
- A Partial Risk Assessment for the lower blocks for water quality/intake and private property.

#### **Conclusions:**

Harvesting **Block 5** as prescribed, utilizing the existing FSR for setup and processing, will **not significantly increase the low likelihood of landslide initiation.**

See TSFA report for drainage control measures and other information.

General Timber Harvesting Recommendations are included in the TSA report and are noted on the Harvest Plan map.

SU	MAXIMUM ALLOWABLE SOIL DISTURBANCE WITHIN THE NET AREA TO REFOREST (%)	MAXIMUM EXTENT SOIL DISTURBANCE LIMITS MAY BE TEMPORARILY EXCEEDED TO CONSTRUCT TEMPORARY ACCESS STRUCTURES OR EXCAVATED OR BLADED TRAILS (%)
A	5%	5%

#### **MASD for Roadside Work Areas: 25%**

Maximum soil disturbance limits may be exceeded for short periods of time; however any temporary access structures or excavated or bladed trails will be rehabilitated to the extent necessary to bring the SU net area back into compliance with the specified soil disturbance limits.

- See **Section F.4** below for description of temporary access structures or excavated or bladed trails, if any.
- Avoid harvesting during spring freshet/breakup conditions when soils are moist to reduce soil displacement and compaction.
- Steep slopes >35% are present and are noted on the **Harvest Plan Map.**
- TU 1: Ground based harvest methods.
- TU 2: Cable harvest methods.

### F.3 REHABILITATION TIME FOR TEMPORARY ACCESS STRUCTURES

MAXIMUM ALLOWABLE TIME TO COMPLETE REHAB (MEASURED FROM COMPLETION OF HARVEST): **1 YEAR**

#### F.4 MANAGEMENT STRATEGIES FOR TEMPORARY ACCESS STRUCTURES

SU	GENERAL LOCATION:	MAX ALLOWABLE HEIGHT OF CUTBANKS (m)	AVERAGE HEIGHT OF CUTBANKS (m)	EQUIPMENT TO BE USED (IF OTHER THAN EXCAVATOR)
A	Blading or excavating is expected to occur in parts of the unit with moderate to steep slopes.	0.8	0.3	Skidder, cat.

**Proposed Landings** (temporary):  
 SU A: 1 landing @ 0.2 ha = **0.2 ha**  
 1 designated skid trail = 92m x 4m = **0.04ha**

- **TU 1:** Roadside harvest with landings. Favorable and adverse skidding.
- **TU 2:** Downhill cable yarding.

**The following will apply for any excavated/bladed trails that are required:**

- Maximum trail width is 4m.
- Actual dimensions of bladed trails may vary depending on topography.
- The amount of bladed trail constructed will be kept to a minimum.

Short sections that become bladed trails where a non-bladed trail crosses a hump or ridge will be exempt from rehabilitation requirements provided that the soil disturbance limits in this SP are not exceeded.

**Rehabilitation for bladed or excavated trails:**  
 Any bladed or excavated trails will be rehabilitated as follows:

- De-compact the trail, including removing woody debris that is conducting subsurface moisture
- Place fill material that was sidecast on the excavated portion of the trail
- Re-contour the slope
- Re-establish natural surface drainage
- Place some woody debris over exposed mineral soil

#### G. SILVICULTURAL SYSTEMS

SILVICULTURAL SYSTEMS	
SU	SYSTEM / VARIANT / PHASE
A	Clearcut silviculture system with reserves.
SU	STAND STRUCTURE AND SITE CONDITION - COMMENTS
A	<p>Post-harvest stand structure will be even-aged with one age class.            Planted trees and natural regeneration will include <b><u>Fd Lw Py Pw (PI)</u></b>.</p> <p><b>Reserved from Harvest</b></p> <ul style="list-style-type: none"> <li>• Two Wildlife Tree Retention Areas (WTRA): totalling 1.4 ha</li> <li>• One Visual Reserve Areas: 3.8 ha.</li> </ul> <p><b>Dispersed Retention Strategy</b></p> <ul style="list-style-type: none"> <li>• TU 1: Retain 15-20 stems per hectare in single tree distribution or clumps. Give preference to larger diameter, wind-firm dominants and/or vets.</li> <li>• TU 2: No mature leave trees are prescribed due to safety concerns associated with downhill cable yarding.</li> </ul> <p><b>Even-Aged Fire Management Stocking Standards</b></p> <ul style="list-style-type: none"> <li>• To address fire management objectives these even-aged stocking standards promote lower conifer stocking, include deciduous species, indicate a preference for fire resistant species and consider climate change.</li> </ul> <p><b>Snags</b>            No snags or stubbed trees are prescribed to be left behind in the block, as they are a hazard from a fire management perspective. Live vets and larger stems selected as leave trees will provide wildlife values post-harvest.</p>



**H. STOCKING REQUIREMENTS (As per Fire management/Wildland Urban Interface (WUI) stocking standards for Selkirk Resource District South Columbia November 20, 2018)**


LICENCE #	CP	BLOCK	OPENING NUMBER	LOCATION						
A30171	405	5	82K016-	Salisbury Face						
H1 ECOLOGICAL INFORMATION										
SU	Net Area (ha)	Zone	Subzone	Variant/Phase	Site Series (complex - %)	Elevation			Slope position	Soil Texture (0-30cm)
						Min	Max	Avg		
A	4.9	ICH	dw	1	103;104 <sub>3</sub>	1010	1160	1085	Mid	SL
RATIONALE FOR STOCKING STANDARD FSP ID SELECTION										
STANDARDS UNIT FSP ID #	CHANGE FROM STANDARD PRACTICE				COMMENT: (For example: Forest health (DRA) or Rocky site)					
1062312	N/A				103 leading - site series complex					

H2 STOCKING REQUIREMENTS FOR SILVICULTURAL SYSTEMS OTHER THAN SINGLE TREE SELECTION								
Standard unit	Standards ID	Regen Delay (yrs)		Free Growing Early (yrs)			Free Growing Late (yrs)	
A	1062312	7		12**			20	
Preferred Species		Acceptable Species		Post Spacing Density (sph)				Max Coniferous (sph)
Species	Min FG ht (m)	Species	Min FG ht (m)	Min	250	Max	600	800*
Fd <sup>58</sup> Lw Py	Fd-1.0, Lw-1.4, Py-0.8	PI Pw <sup>31</sup>	PI – 1.4 Pw-1.4	Well Spaced Trees (sph)				
				Target	Minimum pref&acc	Minimum preferred	Min Horizontal Inter-tree distance (m)	
				400	250	200	2.0	
				'M' Value			Height Relative to Competition (%)	
4			150					
<p>* All conifers &gt;50cm are countable for the purpose of assessment of maximum conifer stocking.</p> <p>** Early Free Growing has been left in for information purposes only. In RESULTS it is in the comments section only and does not preclude making FG declarations early.</p> <p><b>Other Required Stocking Information/Footnotes :</b></p> <p>31 - must use of blister rust resistant stock. See BC Journal of Ecosystems and Management 10(1): 97-100 for supplementary information.</p> <p>58 – South Area – Fd limited to a max 50% of preferred and acceptable well-spaced stems in the IDf<sub>mw</sub> and all subzones of the ICH due to root rot. See Root Rot Handbook (2017, in press).</p>								

H3 SITE PREPARATION
TECHNIQUE (S) / LIMITING FACTORS
<p>Options for SU A include:</p> <ul style="list-style-type: none"> <li>Mechanical bunching (pile and burn) where feasible (TU1) to minimize CWD as a method of wildfire mitigation.</li> <li>Piles may be left unburned to contribute to wildlife habitat and coarse woody debris values; however all roadside and landing piles should be burned to abate wildfire risk.</li> <li>Manage CWD and slash with a goal of future wildfire mitigation; minimize surface fuels post-harvest. Clearcutting and site prep that removes almost all of the aboveground biomass creates a good firebreak given the limited fuel remaining. This will reduce the intensity of a potential fire, and make it easier for firefighters to suppress. This does not mean removing all organic material down to mineral soil; just to reduce significant accumulations of surface fuel.</li> <li>Care should be taken while working around leave trees to avoid damage to the stems.</li> </ul>

H4 PLANTING								
SU	Area (ha)	Regen. Method	Species	Age	Stock Type	Season	Stems/Ha	Total Stems
A	4.9	Plant	Lw, Fdi, Py (Pl, Pw)	1+0	PSB 412A	Spring	400-600	1,960-2,940
<p>LIMITING FACTORS / COMMENTS:</p> <ul style="list-style-type: none"> <li>• Manage for a high diversity of planted trees as a climate change adaptation strategy. Increasing species diversity may help buffer the negative impacts of climate change, and make forests more resilient when faced with extreme weather events. This strategy is meant to reduce the forest health risks to future timber supply by providing a diversity of species should one or more become susceptible to pests or other damaging agents.</li> <li>• Microsite selection for Lw, Pl, and Py should be concentrated to dry sites.</li> <li>• Limiting factors include a warm aspect and shallow soils. Moisture deficits are expected to persist through the summer.</li> <li>• Plant as soon as possible following harvesting or site prep operations. <b>Note:</b> a post-harvest assessment should be completed to assess the necessity of site preparation prior to planting. If site prep is needed, the person completing the assessment will generate a prescription surrounding the areas that are required and the methods to be employed.</li> <li>• Anticipated Timing/Constraints: Treatment needs will be assessed through periodic walkthroughs and silviculture surveys.</li> <li>• Monitor for signs of ungulate browse during silviculture surveys.</li> </ul>								
H5 BRUSHING / STAND TENDING								
TECHNIQUE (S) / LIMITING FACTORS								
<p><b>Brushing:</b></p> <p><i>Broadleaf species are considered beneficial from a fire mitigation perspective as they are generally less flammable than other coniferous species and as a result may reduce fire behavior; however, adequate free growing density of preferred and acceptable crop trees, free from deleterious competition, must be established.</i></p> <ul style="list-style-type: none"> <li>○ <b>Current Brush Hazard:</b> Moderate levels of brush inside most of the block with patches of high levels of brush in openings.</li> <li>○ <b>Future Brush Hazard:</b> Moderate. Subseric moisture regime, west aspect and established brush in canopy openings. Existing and potential competitor species include birch, maple, ocean spray, snowberry, hazelnut, thimbleberry and bracken fern. Deciduous seeding and vegetative reproduction is likely within block boundaries.</li> <li>○ <b>Brushing Methods:</b> Should brushing become necessary, manual treatments are the preferred methods.</li> <li>○ <b>Risks and Considerations:</b> Woody brushing or stand tending treatments must be carefully assessed due to pathogen ability to colonize wounds on stocked trees that may be damaged by brushing treatments.</li> <li>○ <b>Anticipated Timing:</b> Treatment needs will be assessed through periodic walkthroughs and silviculture surveys. Treatment timing will be prescribed at the time of brush assessment.</li> </ul>								
<p><b>Juvenile Spacing:</b></p> <ul style="list-style-type: none"> <li>○ Maximum <i>conifer</i> density is 800 stems / ha.</li> <li>○ An assessment should be completed at, or prior to, early free growing to determine if a juvenile spacing treatment is necessary.</li> <li>○ Countable height is <b>50cm</b> for all conifers.</li> </ul> <p>See <i>Fire management/Wildland Urban Interface (WUI) stocking standards for Selkirk Resource District South Columbia November 20, 2018</i></p>								

**I. ADMINISTRATION**

<b>RPF SIGNATURE AND SEAL:</b>	
<p><u>Bill Kestell, RPF</u></p> <p>RPF Name (Printed)  <i>I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals.</i></p> <p>Date: <u>December 15, 2021</u> RPF #: <u>2923</u></p>	 <p>RPF Signature and Seal</p>
<p><b>SITE PLAN PREPARED BY:</b> Tom Haukaas, RFT</p>	<p><b>MAJOR LICENSEE SIGNING AUTHORITY:</b></p>
<p><b>SITE PLAN ATTACHMENTS:</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> SP MAP(S)</li> <li><input type="checkbox"/> ARCHAEOLOGICAL IMPACT ASSESSMENT</li> <li><input type="checkbox"/> TERRAIN STABILITY FIELD ASSESSMENT</li> <li><input checked="" type="checkbox"/> VISUAL IMPACT ASSESSMENT</li> <li><input type="checkbox"/> RIPARIAN ASSESSMENT</li> <li><input type="checkbox"/> FOREST HEALTH / PEST INCIDENCE ASSESSMENT</li> <li><input type="checkbox"/> SOIL CONSERVATION TABLE</li> <li><input checked="" type="checkbox"/> OTHER: <u>REFORESTATION PRESCRIPTION</u></li> <li><input checked="" type="checkbox"/> OTHER: <u>ARMILLARIA RISK ASSESSMENT MATRIX</u></li> </ul>	<p>_____ Licence Holder Signing Authority Signature</p> <p>_____ Licence Holder Signing Authority Name (Printed)</p> <p>Date: _____</p>

	Standards Units					TOTAL HA	%
	A						
<b>HAZARD RATINGS:</b>							
Compaction	Moderate						
Soil Displacement	Very High (36)						
Surface Erosion	High (26)						
Forest Floor Displacement	Very High (26)						
Mass Wasting	High (51)						
Harvest System	Cable						
<b>TOTAL AREA</b>	11.4					11.4	
<b>Wildlife Tree Patches / NP Nat</b>							% WTP/IMM
WTRA	1.4					1.4	12.3
Visual Reserve	3.8					3.8	33.3
<b>Permanent Access Structures</b>							% Disturbance
Proposed roads	-					-	-
Existing roads	1.3					1.3	11.4
Landings	-					-	-
<b>Total disturbance permanent access structures</b>	<b>1.3</b>					<b>1.3</b>	<b>11.4</b>
<b>NET AREA TO BE REFORESTED</b>	<b>4.9</b>					<b>4.9</b>	
Sensitive Soils (Y/N)	Yes						
<b>Temporary Access Structures:</b> Road, landing, excavated or bladed trails that will be rehabilitated (% of NAR).	5% (excavated/bladed trails)						
<b>Max. Allowable dispersed Soil Disturbance</b> (% of NAR by Standards Unit) as a result of harvesting, mechanical site preparation, or hazard abatement activities.	5%						
<p>Comments: Landings within the NAR are temporary and will be fully rehabilitated.</p> <p><b>Rehabilitation/Deactivation measures:</b>  All landings and trails within the NAR are temporary and will be rehabilitated by decompacting, re-contouring, surface restoration, followed by planting.  Landings will be deactivated as per the following: Minimize runoff flowing onto the landing and minimize erosion of the landing fill material by incorporating appropriate drainage systems. If required, carry out measures to ensure that the landing is stable, such as decompaction, re-contouring, and grass seeding.</p> <p><b>Permanent Road (existing):</b> 768m x 20m = 1.3 ha</p> <p><b>Temporary Landings:</b> 1 landing = 0.2 ha.</p> <p>See <b>Section F.4</b> for discussion of rehabilitation of excavated/bladed trails.</p>							