

# SITE PLAN CP 405 BLOCK 1 COOPER CREEK CEDAR LTD.

## A. TENURE IDENTIFICATION

LICENCE NO.: <b>FL A30171</b>	CP: <b>405</b>	BLOCK: <b>1</b>	TIMBER MARK: <b>FE5405</b>	UTM: <b>506980 E, 5552280 N</b>	LICENSEE NAME: <b>Cooper Creek Cedar Ltd.</b>
AREA UNDER TENURE (ha): <b>16.2</b>	MAPSHEET/OPENING #: <b>082K016</b>	ELEVATION: <b>710-910m</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	RESERVE	TOTAL NPR AREA
0.9	-	-	-	-	-	3.1	-	-	4.0
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><u>ICH dw1 104<sup>9</sup> 103<sup>1</sup></u></b></p> <p>Aspect is mainly west facing, slopes range from 20 to 75% with an average of 48%. Surface and subsoil texture is Sandy-Loam (SL). Soils are well drained. Coarse fragment content is Moderate (40-50%). Moisture regime is submesic and nutrient regime is poor to medium. Humus form is a thin mor (4.0cm thickness) and rooting depth is 37cm. Soils are <b>non-sensitive</b>.</p> <p>Average stand density (all species) is 388 stems/ha. Most stems fall within the 25-60cm DBH classes, with &lt;5% of stems in the 65-75cm DBH classes. Approximate species composition by density is Fd 89%, Ac 4%, Ep 3%, Cw 2%, and Lw 2%. Stand age ranges from 84-135 with an average of 110 years old. The understory contains low densities of Fdi, Ep (Cw) regen, saplings and poles that are mainly in poor (suppressed) to condition but growing.</p> <p>TU 1 (10.9 ha)</p> <ul style="list-style-type: none"> <li>• <b>Conventional Ground Based</b> Harvesting Methods.</li> <li>• <b>Retention:</b> Target <b>19-21-m<sup>2</sup>/ha</b> Basal Area retention; Target Fd (Py, Lw) ≥30 cm DBH class. Stems will be retained in a combination of single tree and small groups. The objective of the retention strategy is to achieve fire mitigation, wildlife and biodiversity objectives.</li> </ul> <p>TU 2 (1.3 ha)</p> <ul style="list-style-type: none"> <li>• <b>Cable</b> Harvesting Method.</li> <li>• <b>Retention:</b> Target <b>19-21-m<sup>2</sup>/ha</b> Basal Area retention; Target Fd (Py, Lw) ≥30 cm DBH class. Stems will be retained in a combination of single tree and small groups. The objective of the retention strategy is to achieve fire mitigation, wildlife and biodiversity objectives.</li> </ul>								12.2
TOTAL NET AREA TO BE REFORESTED:									12.2
TOTAL AREA UNDER THE PLAN:									16.2

## 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	10.0	5.0	25%	5.6

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.</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

<b>Biodiversity Objectives</b>	
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)	'KBHLP Objective 2 – Old & Mature Forests' There are no Mature + Old forest requirements in this landscape unit, the Old forest target is met with OGMA area. <b>Landscape Unit K16</b> (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.)
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)	'KBHLP Objective 4 – Green-up'. The proposed cutblock complies with Sections 64 and 65 of the FPPR. Adjacent existing cutblocks are consistent with FPPR Section 65.
<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 1.
<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)	Bulmer Creek is located $\geq 150\text{m}$ from block 1. Management of streams in block 1 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> does not contain sensitive soils and soil disturbance will not exceed <b>10%</b>. 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 does not exceed the recommended limit of <b>7.0%</b> and is estimated at <b>5.6%</b>.</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-Salisbury</b> 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 large reserve areas serve to improve visual quality from viewpoints. Retention of $19\text{-}21\text{-m}^2/\text{ha}$ of mature stems even distributed throughout Block 1 will enhance visual quality. 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:	NO
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	'KBHLP Objective 6' – Block 1 is neither located within a domestic watershed nor community watershed.

<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. There were no Wildlife Habitat Features (WHFs) identified within the proposed harvest area of CP 405.
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>3.1 ha</b> . Overall wildlife tree retention percentage for block 1 is approximately <b>19.1%</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).  An “ <b>Assessment of Habitat and Risks for Mountain Caribou and Other Wildlife</b> ” was completed by Brenda Herbison, MSc. R.P. Risks, associated with this block, to Mule deer and Great Blue Heron were mitigated by boundary changes earlier in development and retaining adequate cover in strategic locations in the form of mature retention. (See report).
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.

## ADDITIONAL COMMENTS

<b>Consistency Statement</b>
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 1</b> , in accordance with FRPA Section 10(1), (2) & (3).
<b>Community Watersheds</b>
FSP Section <b>3.4.3</b> Not applicable - The proposed block is not located within a Community Watershed.
<b>Enhanced Resource Development Zones</b>
FSP Section <b>3.2.1</b> 'KBHLP Objective 7 – Enhanced Resource Development Zones – Timber' <b>Block 1</b> is not within an Enhanced Resource Development Zone.
<b>Fire Maintained Ecosystems</b>
FSP Section <b>3.5.3</b> '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.
<b>Fisheries Sensitive Watersheds</b>
FSP Section <b>3.4.2</b> 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.
<b>Invasive Plants</b>
FSP Section <b>4.1 – Invasive Plants</b> 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.  Measures to prevent the introduction or spread of invasive plants noted in the FSP include: <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>
<b>Natural Range Barriers</b>
FSP Section – <b>4.2</b> Not applicable. There are no range tenures located in the FDUs covered by this FSP.
<b>Timber</b>
FSP Section <b>3.2 - Timber</b> As per Sec 12(8) of the FPPR, results or strategies are not required for an objective set by government for timber.

<p><b>Wildlife - Caribou</b></p> <p>FSP Section – 3.3 and 3.5.3</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 3.3 and 3.5.3</p> <p>'KBHLP Objective 5 – Grizzly Bear Habitat &amp; Connectivity Corridors'. Not applicable to the FDU which includes this block.</p> <p><b>Block 1</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	12.2	1062309	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 1</b> include meeting visual quality objectives, 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 (Lw Cw Ac Ep)</b> for sawlogs, chips and value-added products and manage for a healthy, free growing stand of planted and natural <b>CwFdLwPyPw(BgPIHw)</b> for similar end products.</li> <li><b>Wildlife Tree Retention Area (WTRA):</b> Two reserve areas are planned for retention, totalling <b>3.1 ha</b> in size (19.1% 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>
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<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 1 is within Migratory Bird Risk Rating 4 polygon Fd&gt;75%. Age Class 6 (7), height class 4. (Age and Height classes from VRI) . The management matrix therefore requires:</p> <p>1) The entire Site must be scheduled for harvest outside Restricted Period 2 (May 15 – July 20) , OR</p> <p>2) One or more Best Management Practice with DoP rank 2 (moderate) must be selected from the list of BMPs and applied to the Site.</p> <p>BMP's PL2 and PL1 have 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. PL1 refers to the high retention silviculture system prescribed to the site.</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 low to moderate in the block, with short steeper slopes in the eastern parts. Mid-elevation ICH dw1 site conditions. Aspect is mainly west facing, with short continuous slopes. Lower slope location. Vegetation cover is 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 <b>density</b> is: <math>Fdi^{89}Ac^4Ep^3Cw^2Lw^2</math>.</p> <p>SU A Stand type by <b>volume</b> is: <math>Fdi^{85}Lw^2Cw^2Ep^1</math>.</p> <p>Forest cover adjacent to the block includes similar mature stands outside of north, west and east boundaries, and previous harvesting to the south.</p> <p><b>Actions prescribed:</b></p> <p>Total Area specified for the retention of wildlife trees <b>3.1 ha</b> (19.1% of gross area)</p> <p><b>Wildlife Tree Retention Patch (WTRA):</b></p> <p><b>WTRA (3.1 ha) Fd (Ep Lw Pli) – 100 years – 32.0m – 45% cc:</b> Moderate to steep terrain. Extensive ungulate tracks, trails, scat and browse noted. Areas of many snags with sloughing bark (Pli and Fdi), and areas of similar stand structure to the adjacent harvest area. Perching and nesting opportunities.</p> <p>The wildlife tree retention area has 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>
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<b>C.2c FISHERIES</b>
There are no fish streams within or directly adjacent to the block. See Section E.1 for Riparian Management Strategies. Drainage from the majority of the cutblock area flows downslope to the West towards Kootenay Lake, and to the north towards Bulmer Creek.
<b>C.2d WATERSHEDS</b>
See RESULTS and STRATEGIES Section 3.4.4 - <b>Consumptive Use Streams</b>
<b>C.2e RECREATION</b>
Not applicable. The proposed cutblock is not located within a designated Recreational Area or Trail with legal objectives.
<b>C.2f BIOLOGICAL DIVERSITY</b>
<b>Landscape Unit - K16 (Hamil):</b> Low BEO Assignment.
<b>C.2g VISUAL RESOURCE MANAGEMENT</b>
See RESULTS and STRATEGIES Section 3.6 Visual Quality
<b>C.2h CULTURAL HERITAGE</b>
See RESULTS and STRATEGIES Section 3.7 - Objectives set by Government for Cultural Heritage Resources
<b>C.2i RANGE</b>
Not applicable. There are no range tenures located in the FDUs covered by this FSP.
<b>C.2j OTHER RESOURCES</b>
<b>Trapping / Guiding:</b> Trappers or guiding license holders in the area will be identified and notified through the Forest Stewardship Planning process.
<b>Windthrow:</b> Windthrow hazard is <b>Low</b> for adjacent immature stands that were harvested in the past (3 – 10m tall). Windthrow hazard is <b>Moderate</b> for adjacent mature stands. Some of these stands have already been partially exposed to winds from past harvesting. The block contains dispersed internal retention 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/or bark beetles. Soils are coarse and well drained with 37 cm rooting depth.
<b>CONDITIONS NOT APPLICABLE TO THIS SITE PLAN</b>
THE FOLLOWING CONDITIONS WERE CONSIDERED, AND FOUND NOT TO BE APPLICABLE TO THIS SITE PLAN: None identified.

## D. ECOLOGICAL INFORMATION AND SITE CHARACTERISTICS

D.1 STANDARDS UNITS AND CRITICAL SITE CONDITIONS						
SU	TREATMENT UNIT	ZONE	BIOGEOCLIMATIC			SITE TYPE
			SUBZONE	VARIANT & PHASE	SITE SERIES	
A	1	ICH	dw	1	104 <sub>9</sub> 103 <sub>1</sub>	-

## E. MANAGEMENT STRATEGIES

E.1 RIPARIAN MANAGEMENT STRATEGIES				
RIPARIAN RESERVE ZONE (RRZ)				
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	-	-	-	-
RIPARIAN MANAGEMENT ZONE (RMZ)				
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 OR DENSITY FOR RMZ (S) AND LMZ (S).	
N/A	-	-	-	
NON-CLASSIFIED (NC) RIPARIAN AREAS				
RIPARIAN/LAKE ID	SU XREF	MANAGEMENT STRATEGIES		
N/A	-	-		

## 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 6 0 18	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> </ul>
			32	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	IBM	1	Live PI is absent or forms a very small component of the stand. Small patches of beetle killed PI blowdown are isolated in parts of the block.	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
A	DML	5	Lw forms a very small component of the stand (2% of volume and density).	Low

### Expected future risks and actions

Forest health information was collected during SP field data collection in **October 2019**.

Stand health risks in the future include a warm aspect and possible moisture deficits during the growing season.

**SU A:** Timber type of the pre-harvest stand volume is:  $Fdi^{95}Cw^2Lw^2Ep^1$

## E.3 VEGETATION MANAGEMENT STRATEGIES

LIVESTOCK TO BE USED FOR VEGETATION MANAGEMENT: YES:  NO:

See Section **H5 – Brushing / Stand Tending** for vegetation management strategies.

#### E.4 COARSE WOODY DEBRIS (CWD) MANAGEMENT STRATEGIES

Existing coarse woody debris levels are low to moderate (8-10%) (15-40cm diameter) in most areas with small patches of higher blowdown cover in forest health affected centres. CWD is Fdi, Lw, Ep, Pli and Douglas maple in various stages of decay.

Manage for **minimum** CWD levels post-harvest in accordance with wildfire mitigation strategies. Post-harvest CWD will consist of non-merchantable existing levels and snags, along with residue and breakage. A reduction of CWD levels is anticipated through fire mitigation.

(FPPR Section 68): **Manage for the minimum of 4 logs per hectare**, each being at least **2 metres** in length and at least **7.5cm** in diameter at one end.

See the SITE PREP section (K.1) for additional CWD management strategies.

#### E.5 ARCHAEOLOGICAL IMPACT ASSESSMENT

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).

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 **Low**. 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.

**Block 1** does not overlap a polygon with archaeological potential.

### 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	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): **5.6%**

**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.

**Block 1:** It was found that timber harvesting as prescribed will **not significantly increase the low likelihood of landslide initiation.**

General Timber Harvesting Recommendations are included in the TSA report.

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	<b>10%</b>	<b>5%</b>

**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 in parts of SU A and are noted on the **Harvest Plan Map**. In TU 1 ground based harvest methods will be utilized. In TU 2 cable harvest methods will be used.

#### 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):

4 landings @ 0.2 ha = **0.8 ha**

**Proposed Trails:** (temporary):

Backspar trail: 380m x 4m = 0.2 ha

Forwarding trail: 142m x 4m = 0.1 ha

Skid trail: 550m x 4m = 0.2 ha

- **TU 1: Roadside harvest with landings. Favorable and adverse skidding.**
- **TU 2: Downhill cable yarding.**
- **See Section E.1 for stream management strategies.**

**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	Retention silviculture system.
SU	STAND STRUCTURE AND SITE CONDITION - COMMENTS
A	<p>Post-harvest stand structure will be even-aged with one age class. Natural regeneration will include <b>Fd Lw (Pl Cw Py Bg Pw Hw Ac At Ep)</b>.</p> <p><b>2 Wildlife Tree Retention Areas (WTRA):</b> totalling 3.1 ha</p> <p><b>Leave Trees</b></p> <p>SU A: Retain a target of <b>19-21-m<sup>2</sup>/ha BA of Fd, Lw, and Py</b> in the ≥30cm DBH class <i>evenly distributed throughout the block in a combination of single tree and small groups to reduce the potential spread of a wildfire and to provide stand structure, biodiversity, visual and wildlife values.</i> Give preference to larger diameter, wind-firm dominants and/or vets.</p> <p>Py, Fd, and Lw are fire-adapted species that are predicted to survive a fire. Thinning the stand from above while retaining fire resilient stems and minimizing the surface fuels to meet the minimum CWD requirements is a recognized fire mitigation management plan. The objective is to retain larger, healthy stems with live crowns while maintaining a 3-5-m spacing between the crowns. The larger leave trees have higher crowns, which means a longer distance between surface fuels and tree crowns; reducing the effective ladder fuels, and reducing the likelihood of the fire moving into the canopy. Regularly spaced leave trees will shade the understory, which will help reduce ground temperatures and prevent brush species from becoming established, further reducing the ladder fuels. Leave tree distribution is expected to be regular where large stems exist and is operationally feasible to do so. Adequate inter-crown spacing prevents the spread of a potential wildfire between leave trees, while still providing ground shading. Post harvest the stand will be easier to protect should a fire occur – fire will move more slowly through the stand due to less ground fuel, an open stand with clean ground &amp; a more open canopy that will let more water and fire retardant through to the ground from air drops than a full canopy stand. The roads and trails constructed to access the block will provide better access for the fire fighters.</p> <p><b>Snags</b></p> <p>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

LICENCE #	CP	BLOCK	OPENING NUMBER	LOCATION
A30171	405	1	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	12.2	ICH	dw	1	104 <sub>9</sub> 101 <sub>1</sub>	710	910	810	Lower	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)					
1062309		N/A									
H2 STOCKING REQUIREMENTS FOR SILVICULTURAL SYSTEMS OTHER THAN SINGLE TREE SELECTION											
SU	<b>Fire Management Partial Cut (Shaded Fuel Break) Stocking Standard (As per Fire management/Wildland Urban Interface (WUI) stocking standards for Selkirk Resource District South Columbia November 20, 2018)</b>										
A	The resulting stand may be considered sufficiently stocked in the overstorey, and regeneration obligations will not be incurred if a minimum <b>12m<sup>2</sup>/ha</b> basal area of preferred and acceptable leave trees is retained <b>1-3 years post harvest</b> . .										
Standards ID	Acceptable leave trees must be dominant or co-dominant layer trees >17.5 cm dbh, and:										
1062309	<ul style="list-style-type: none"> <li>&gt; 25% live crown with no indicators of decline;</li> <li>Free of gouges and wounds &gt; 1/3 of stem circumference; and</li> <li>Free of wounds on a supporting root within 1 m of the stem.</li> </ul>										
	<b>Min. Basal Area / ha:</b>		12m <sup>2</sup>			<b>Assessment Period:</b>			1-3 years post harvest		
	<b>Preferred Species:</b>		Fd Lw Py Pw			<b>Acceptable Species:</b>			Bg Pl Ac At Ep Cw Hw		

H3 SITE PREPARATION	
TECHNIQUE (S) / LIMITING FACTORS	
Options for SU A include:	
<ul style="list-style-type: none"> <li>Mechanical bunching (pile and burn) where feasible 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 Harvesting to create a shaded fuel break and reducing the forest floor fuels removes most of the aboveground biomass and 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>	

**I. ADMINISTRATION**

**RPF SIGNATURE AND SEAL:**

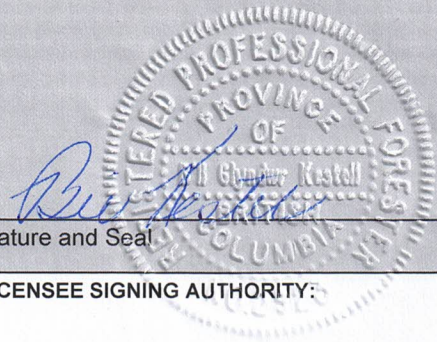
Bill Kestell

RPF Name (Printed)

*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.*

Date:      December 15, 2021      RPF #: 2923

RPF Signature and Seal



**SITE PLAN PREPARED BY:**

Tom Haukaas, RFT

**MAJOR LICENSEE SIGNING AUTHORITY:**

\_\_\_\_\_  
Licence Holder Signing Authority Signature

\_\_\_\_\_  
Licence Holder Signing Authority Name (Printed)

Date: \_\_\_\_\_

	Standards Units					TOTAL HA	%
	A						
<b>HAZARD RATINGS:</b>						16.2	
Compaction	Moderate						
Soil Displacement	High (20)						
Surface Erosion	High (26)						
Forest Floor Displacement	High (24)						
Mass Wasting	Moderate (27)						
Harvest System	Ground Based/ Cable						
<b>TOTAL AREA</b>	16.2					16.2	
<b>Wildlife Tree Patches / NP Nat</b>							% WTP/IMM
WTRA	3.1					1.1	6.8
Other Reserve	-					2.0	12.3
<b>Permanent Access Structures</b>							% Disturbance
Proposed roads	0.3					0.3	1.9
Existing roads	0.6					0.6	3.7
Landings	-					-	-
<b>Total disturbance permanent access structures</b>	<b>0.9</b>					<b>0.9</b>	<b>5.6</b>
<b>NET AREA TO BE REFORESTED</b>	<b>12.2</b>					<b>12.2</b>	
Sensitive Soils (Y/N)	No						
<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.	10%						
<b>Comments: Landings within the NAR are temporary and will be fully rehabilitated.</b>							
<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.							
<b>Proposed Roads</b> (permanent):							
SU A: Spur 1-3 = 135m x 20m = <b>0.3 ha</b>							
<b>Existing Roads</b> (permanent):							
SU A: Salisbury Mainline = 430m x 15m (Average width) = <b>0.6 ha</b>							
<b>Total PAS = 0.9 ha</b>							
<b>Temp Road:</b> N/A							
<b>Temp Landings:</b> 3 landings x 0.2 ha each = 0.6 ha.							
See <b>Section F.4</b> for discussion of rehabilitation of excavated/bladed trails.							