



Forest License: A16830

CP082 blocks 043, 045

CP695 blocks 075, 077, 078, 079, 080

see R09511 & on-block Road Plan for CP082/010/695Access,

FSP approval date & version: 2017 FSP submission, approval date April 5, 2018

PRE-EXISTING SAFETY HAZARDS

Steep Slopes (>30%)	☐ No	☒ Yes: Slopes >30% are mapped in blk43 below SP2, W end of blk79, and upper blk77.
Block behind gate:	☒ No	☐ Yes: Post-planting access control is planned however
Steep road grades on block access roads:	☐ No	☒ Yes: Rd in blk79 has a favorable pitch of 12% for 30 m; 15% for 50m through blk40
High Percentage of Snags (>30%):	☒ No	☐ Yes: CP082 33% Dead Potential and CP695 31% DP
This permit is:	☒ Scale Based	☐ Cruise Based

Comments: Steep pitches will require steep slope SWPs. Access concerns into the area will require prompt road deactivation providing difficult access for silviculture; ensure no vehicle access as prescribed post-planting into much of this area.

OPERATIONAL COMMITMENTS, CONSIDERATIONS, and CRITICAL SITE FACTORS

Summary of unique site conditions or management strategies that will potentially affect the choice of logging equipment, logging contractor, or timing of operations such as:

- Road construction and deactivation/access control is directed by the R09511-CP082/010/695 Road Plan; refer to this document for these activities.
- Cross streams as per the Road Plan; minimize crossing of NCDs within blocks. Harvest across NCD MFZs but retain non-merch trees and brush along the drainages. Utilize non-skid zones to increase non-merch retention outside stream reserves to increase their wind firmness; note a 10m SMZ along blk75 stream S4-VI. Follow similar non-merch retention practices along block boundaries to reduce windthrow post-harvest.
- Note safety considerations around mapped steep slope sections; apply steep slope SWPs in blk43, blk77 and blk79.
- "10% allowable" blocks have summer access ground, but timing is limited by goat / grizzly habitat and landscape corridor restrictions along with access control for the wilderness lake and Park adjacency. Road construction and harvest is expected to occur this fall (2019) and into the winter as needed.
- Retain deciduous and Hw as operationally feasible for wildlife reasons; 50% of each is reserved within the cruise.
- Stub mapped bird nest trees as operationally feasible if within the harvest area; winter harvest in general is planned thus avoiding active nesting.
- Grass seed disturbed soils >0.1ha to minimize invasive weed encroachment; see the Road Plan for additional direction.

CP082

Blk43: NCD-IX has a 10m wide gully and is MFZ ribboned; there is no designated skid crossing; forward wood around the end of the drainage. Clay soils are isolated along the W boundary (toe-slope) and represent <5% of the total block; winter harvest this portion as necessary.

Blk45: NCD-II MFZ marks soft, wet ground; two skid crossings are flagged. SU2 along the SE boundary has pockets of organic over clay soils and in general this SU should target harvest under frozen conditions. Consider silviculture site preparation in SU2. Stub and retain the CMT at the end of SP2. Note that roads/block are within the 1km wilderness lake buffer and need to be temporary in nature and heavily deactivated post-planting.

CP695

Blk75: Like blk45 above, the S portion of blk75 has organic over clay soils; winter harvest where required.

Blk77: NCD-XII MFZ marks soft, wet ground; skid across when frozen if necessary and avoid decking in the MFZ. Lower slopes in SU2 have clay soils - winter harvest; cottonwood is common - retain as operationally feasible. Upper boundary slopes reach 45%.

Blk78: No specific concerns.

Blk79: The W boundary parallels an NCD draw at the toe of a sustained slope and has a high concentration of Clay; winter harvest. NCDs have MFZ ribbon; cross using designated skid crossings. Stub the triple red-ribboned bird nest tree as high as possible above the nest.

Blk80: A mapped wet clay area (10 site) exists in the middle portion of this block; cross when frozen. Stub the previously harvested adjacent boundary.

ECOLOGY: Block Standard Unit Summary

Standard Unit	043-SU2	045-SU1	045-SU2	075-SU2	077-SU2	078-SU1	079-SU2	080-SU1
Subzone/Variant	SBSmc2	SBSmc2	SBSmc2	SBSmc2	SBSmc2	SBSmc2	SBSmc2	SBSmc2
Assoc/Site Series	09s05s06z	05s06s09z	09s06z	09s05s06z	09s06z(10,05)	06s09z	09s06z	06s05s09z
Aspect	S-SW	SW	S	SW	S	S, SE	SW	S, SW
Elevation Range	970-1010	864-880m	860-895m	865-880	870-880m	960-975m	970-1010	940-960m
Slope Avg (Range)	15 (5-25)	5-25 (10)	5-20 (13)	8(5-20)	0-14 (4)	2-20 (12)	15 (5-35)	1-10 (4)
LFH - Type/depth	Mor/8	Mor/8	Mor/7	Mor/10	Mor/9	Mor/8	Mor/9	Mor/7
Slope Pos	Middle	Middle	Lower	Mid - Lower	Lower	Middle	Middle	Middle
Soil Texture	SL, L, SiL, SiCL, CL	SL, L, SiL	L, SL, SiL, CL, SiCL, SiC,	SL, SiL, CL	L, CL, SL, SiCL	SL, L/SiL	SL, L, SiL, SiCL, CL	SL, L, SiL
CF% (average)	20	15%	15%	15%	50	25	25	35
Depth to Water Restricting Layer	60+	60+	60+	30+	50+	50+	50+	50+
Compaction	H	M	VH	VH	VH	M	H	M
Displacement	L	L	L	M	L	L	M	L
Erosion	M	M	M	H	L	L	H	M
Max % NAR Soil Disturbance	10%	10%	5%	5%	5%	10%	5%	10%
FSP Stocking Standard	1055565	1055565	1055565	1055565	1055565	1055565	1055565	1055565
Silviculture System	CCR	CCR	CCR	CCR	CCR	CCR	CCR	CCR

Standard Unit Comments: Blk79 is transitional to ESSFwv but SBSmc2 conditions are reflected on-site.	
BLK43-SU2	<p>SU 2 is SBS mc2 dominated by the 09 site series, however the 06 site series is common. The overstorey is dominated by sub-alpine fir with a minor component of spruce. The understorey is comprised of scattered sub-alpine fir poles and saplings of moderate form (150sph) and patchy sub-alpine fir regen of poor form (70sph). The terrain is terraced with a plateau in the NE corner and a toe slope bench along the western boundary. Slope varies between 5% and 40% with an average slope of 15%, all sloping to the S and SW. Soils are deep morainal tills dominated by SL, and L textures. There is a band of SiCL, CL and SiL soils that parallels the western boundary associated with a toe slope site.</p> <p>Brush hazard is expected to be moderate. Expect post-harvest development of patchy Alder, False Azalea, Thimbleberry and Huckleberry. The currently dense sections of Devil's Club should diminish post-harvest.</p>
BLK45-SU1	<p>SU 1 is SBSmc2 dominated by the 05 site series however pockets of the 06 site series are also common. The overstorey is dominated by sub-alpine fir with a minor component of spruce, lodgepole pine, and cottonwood. The understorey is comprised of sub-alpine fir poles and saplings of poor to moderate form (250sph) and evenly distributed sub-alpine fir regen of moderate form (600sph). The terrain is evenly sloped with slopes ranging from 5-25% averaging 10% and predominantly south to southwesterly aspects. Soils are deep morainal tills dominated by SL textures.</p> <p>Brush hazard is low-moderate. Expect post-harvest development of patchy Alder, False Azalea, Thimbleberry, and Huckleberry.</p>
BLK45-SU2	<p>SU 2 is SBSmc2 dominated by the 09 site series with a minor amount of 06 site series. The overstorey is dominated by sub-alpine fir and spruce with a minor content of lodgepole pine. Cottonwood is a major species (20%+) in this SU in this block. The understorey is comprised of sub-alpine fir poles and saplings of poor to moderate form (250sph) and patchy sub-alpine fir and spruce regen of poor to moderate form (50sph). The terrain is uniformly sloped with grades of 5-20% averaging 13% all facing S to SW. Soils are morainal tills dominated by L soil texture with some accumulations of clay soils in the surface horizons. Soil textures range from L to CL with minor occurrences of SL and SiCL. Clay and organic soils occur in pockets over approximately 10% of the area of this SU.</p> <p>Brush hazard is moderate. Expect post-harvest development of patchy Alder, and Black Twinberry. The currently dense understorey of Devil's Club should diminish post-harvest.</p>
BLK75-SU2	<p>SU 2 is SBSmc2. The eco is dominated by the 09 site series there are also small pockets of both the 05 and 06 site series. The overstorey is dominated by sub-alpine fir with a minor component of spruce. The understorey is comprised of scattered sub-alpine fir poles and saplings of moderate form (500sph) and patchy sub-alpine fir regen of poor form (50sph). The terrain is terraced with a plateau in the NE corner and a toe slope bench along the western boundary. Slope varies between 5% and 20% with an average slope of 8%, all sloping to the S and SW. Soils are deep morainal tills dominated by SL, and SiL textures. There are pockets of Clay soils associated with a toe slope site along the southern boundary.</p> <p>Brush hazard is expected to be moderate. Expect post-harvest development of patchy Alder, False Azalea, Thimbleberry and Huckleberry. The currently dense sections of Devil's Club should diminish post-harvest.</p>
BLK77-SU2	<p>SU 2 is SBSmc2 dominated by the 09 site series with a minor amount of 06 site series. The 10 and 05 site exist in limited amounts. The overstorey is dominated by sub-alpine fir and spruce with a minor content of lodgepole pine. Cottonwood is a major species (20%+) in this SU in this block. The understorey is comprised of sub-alpine fir poles and saplings of poor to moderate form (450sph) and patchy sub-alpine fir and spruce regen of poor to moderate form (200sph). The terrain is gently sloped to nearly flat. Soils are morainal tills dominated by L soil texture with some accumulations of clay soils in the surface horizons. Soil textures range from L to CL with minor occurrences of SL and SiCL. Clay soils occur in pockets over approximately 15% of the area of this SU.</p> <p>Brush hazard is moderate. Expect post-harvest development of patchy Alder, and Black Twinberry. The currently dense understorey of Devil's Club should diminish post-harvest.</p>
BLK78-SU1	<p>SU 1 is SBSmc2 dominated by the 06 site series with patches of the 09 site series commonly distributed throughout. The overstorey is dominated by sub-alpine fir with a sub dominant component of spruce. The understorey is comprised of sub-alpine fir poles of poor form (50sph), sub-alpine fir saplings of poor to good form (200sph) and patchy sub-alpine fir regen of poor form (200sph). The terrain is gently rolling with S or SE aspects. Soils are deep morainal tills dominated by SL textures. L and SL textures are common (30% of the area). Clay soils are not present.</p> <p>Brush hazard is low-moderate. Expect post-harvest development of patchy False Azalea, and Huckleberry. The currently dense sections of Devil's Club will diminish post-harvest.</p>
BLK79-SU2	<p>SU 2 is transitional: it is classified as SBSmc2 but has an ESSFwv influence. The eco is dominated by the 09 site series, however the 06 site series is common. The overstorey is dominated by sub-alpine fir with a minor component of spruce. The understorey is comprised of scattered sub-alpine fir poles and saplings of moderate form (150sph) and patchy sub-alpine fir regen of poor form (70sph). The terrain is terraced with a plateau in the NE corner and a toe slope bench along the western boundary. Slope varies between 5% and 35% with an average slope of 15%, all sloping to the S and SW. Soils are deep morainal tills dominated by SL, and L textures. There is a band of SiCL, CL and SiL soils that parallels the western boundary associated with a toe slope site.</p> <p>Brush hazard is expected to be moderate. Expect post-harvest development of patchy Alder, False Azalea, Thimbleberry and Huckleberry. The currently dense sections of Devil's Club should diminish post-harvest.</p>
BLK80-SU1	<p>SU 1 is SBSmc2 dominated by the 06 site series with patches of the 05 and 09 site series distributed throughout; mapped wet area is a 10 site. The overstorey is dominated by sub-alpine fir with a sub dominant component of spruce and a minor component of lodgepole pine. The understorey is comprised of sub-alpine fir poles of poor form (100sph), sub-alpine fir saplings of poor to moderate form (700sph) and patchy sub-alpine fir regen of poor to moderate form (600sph). The terrain is uniform with gentle grades with S or SW aspects. Soils are deep morainal tills dominated by SL textures. L and SiL textures are common (20% of the area). Clay soils are present but occur on less than 5% of the area.</p> <p>Brush hazard is moderate. Expect post-harvest development of patchy Alder, False Azalea, Huckleberry, and Black Twinberry.</p>

BIODIVERSITY MANAGEMENT

☒ CWD Default: A minimum of 4 logs per hectare, each being a minimum of 2m in length and 7.5 cm in diameter at one end shall be left on site as per section 68(b) of the Forest Planning and Practices regulation.

☒ Alternative Strategy: Retention of species listed below for both wildlife concerns and future CWD or forest health reasons.

☒ Retain all deciduous species where operationally feasible.

☒ Retain all hemlock where operationally feasible.

☒ Stubbing is required in the following area (block boundaries, CMT's, dead standing, RMZ's)

☐ Retain all stem < xxx dbh where operationally feasible across the block or in a specified area such as RMZ's or MFZ's.

☐ Other:

Cruise is reduced by 50% for Hw and deciduous. Stub the blk45 CMT, and bird nest trees as mapped or located. Stub the blk80 boundary against the previously harvested CP695-081.

MIGRATORY BIRDS

Pre-harvest Risk Assessment	☐ Not completed. Must be completed prior to commencement of operations.	☒ Completed. Comments if applicable: blocks fall within moderately-high (4) to high (5) ranking. Consider best management practices outlined below.	
Recommended Harvest Period	☐ No restrictions; any time of year	☒ outside of peak nesting period (April 15-July 31)	☒ outside of peak nesting period and shoulder season (April 1-August 15)
Best Management Practices	<p>Blocks 43, 75, and 79 have rank 5 risk sections of finding bird nests; blocks 75 and 79 do have a single mapped nest each; harvest outside the peak nesting period and shoulder season and stub the mapped nests if operationally feasible (or avoid if rotten).</p> <p>Other blocks are rank 4 risk; no nests were located within them. As the plan is to winter harvest, these blocks will also be harvested outside the peak period at least. Apply SOP5 any time during harvest to protect nests and create a biodiversity anchor of retention around the nest if new or additional nests are located.</p>		

SOIL CONSERVATION:

see Section 5.9 Soils for soil stability concerns

Comments: Actual soil disturbance will be minimized by using appropriate harvesting machinery during suitable operating conditions. Winter harvest is planned in general. Steep slopes or wet ground in particular have been identified to be harvested under frozen conditions.

Maximum Percent of Total Opening Area Allowed for by Permanent Access Structures: 7 %

Total Percent of the Opening Area (49.15ha): 4.7 %

Disturbance Calculations (ha)	Length of roads within block	Width of roads within block	Total Area (ha.)
Existing Roads			
Road Permit Roads			
On block Roads	2+875m	8	2.3
Excavated or Bladed Skid Trails			
Other disturbance			
Total	2875m		2.3

Rationale for exceeding soil disturbance limits (FPPR s.35(4)):

Temporary Access Structures:

Rationale for Utilizing Temporary Access Structures:

Rehabilitation Measures and Timing related to Temporary Access Structures (FPPR s.35(6) & (7)):

Risk of Sediment Delivery from Rehabilitation of Temporary Access Structures (FPPR s.35(7)):

FIRE HAZARD AND ABATEMENT

Fire Hazard Zone Determined using the <u>B.C. Fuel Hazard Assessment and Abatement Fire Risk Map</u>	☒ Low ☐ Moderate ☐ High ☐ Severe		
On-site Fuel Hazard Assessment: Determined using the <u>A Guide to Fuel Hazard Assessment and Abatement in British Columbia</u> .	☐ is required in 3 month intervals during operations (S.11 Wildfire Act Reg.) ☒ is required in 6 month intervals during operations (S.11 Wildfire Act Reg.)		☐ is not required (exempted UNDER s.26/26 of the Wildfire Act Reg.)
Post Harvest Fuel Abatement Assessment (To be completed by harvesting supervisor following completion of harvesting activities.)	☒ Is required ☐ is not required		

RIPARIAN MANAGEMENT**Riparian Reserve Zone Strategies**

There are no timber harvesting activities proposed under this site plan within riparian reserve zones other than to build roads.

Retention in Riparian Management Zones (WFM-PIR, 2018 Bulkley TSA FSP S.5.3.1.3)

Table 4: Retention of trees within RMZ of Wetlands and Lakes and Features with a Riparian Reserve Zone and other associated requirements.

Riparian Class	Basal Area or un-Harvest Area to be retained within the Riparian Management Zone.	
S1A or S1B, S2, S3	≥20%	<p>The basal area or area % retained unharvest shall count both live and dead merchantable and non-merchantable trees and stubs. Retained green or dead trees can be stubbed for worker safety.</p> <p>Retain BA or area% in RMZ (live or dead merch/non-merch trees and stubs), and</p> <p>For L1-A and L3 also retain as practicable for 5m, brush species, non-merchantable conifers and non-commercial stems.</p>
W1 or W5	≥10%	
L1-B	≥10%	
L3	≥10%	
W3	25% ha or sph	Retain area or pre-harvest sph >15cm dbh as stubs or full stems, and as practicable for 5m, brush species, advanced regeneration, non-merchantable conifers and non-commercial stems.
S4, S5, S6s	>50%	Retain BA 10m either side (20m total), and as practicable for 10m both sides, brush species, non-merchantable conifers and non-commercial stems.
S6	>15%	Retain BA 10m either side (20m total), and as practicable for 5m both sides; brush species, non-merchantable conifers and non-commercial stems.
NCD	n/a	As the professional sees fit.

RIPARIAN/ LAKE I.D.	RIPARIAN/ LAKE CLASS	RMZ HARVEST (Y/N)	NO HARVEST AREA MINIMUM WIDTH	FSP RIPARIAN REQUIREMENTS MET WITH NO HARVEST AREA.	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).
Blk45-I	S2	Y	36+m	☒	The harvest boundary is 36+m away; average reserve 42m. No special management is required.
Blk45-II	NCD	N/A	0m	☐	NCD is a 10-15m wide, wet, alder draw. Use designated skid crossings in frozen conditions. Reach across the red/yellow MFZ lines to harvest, retaining non-merch trees and brush.
Blk45-III	S4	Y	20+m	☒	The harvest boundary is 20+m away due to winter layout as S3. No special management is required.
Blk45-IV	S3	Y	25+m	☒	The harvest boundary is 25+m away; average reserve is 28m. No special management is required. Cross as per the road plan.
Blk43-VIII	S3	Y	24+m	☒	The harvest boundary is 24+m away. Create a 5m non-skid zone by reaching toward the harvest boundary and lifting merchantable trees away; retain non-merch trees to increase wind firmness of the stream reserve. Cross as per the road plan.
Blk43-IX	NCD	N/A	0m	☐	This shallow gully/drainage is ribboned with a 1-5m MFZ. Minimize crossings; it's possible to not skid across at all by skidding around either end. Reach across the red/yellow MFZ lines to harvest; retain non-merch trees and brush.
Blk43-XI	S3	Y	25+m	☒	The harvest boundary is 25+m away. Create a 5m non-skid zone by reaching toward the harvest boundary and lifting merchantable trees away; retain non-merch trees to increase wind firmness of the stream reserve. Cross as per the road plan.
Blk75-IV	S3	Y	25+m	☒	
Blk75-VI	S4	Y	2+m	☒	S4-VI has numerous side channels; easternmost channel is 2+m away but is ribboned with 10m pink SMZ. Required retention is achieved on the W side with 100% retention throughout the RMZ. Due to fan activity (mild channel movement), create a 10m non-skid zone by reaching toward the harvest boundary and lifting merchantable trees away, retaining non-merch trees to increase wind firmness of the stream reserve.
Blk75-VII	NCD	N/A	6+m	☐	Watercourse is 6+m outside of harvest area; no special management is required. Cross as per the road plan.
Blk77-XII	NCD	N/A	0m	☐	Where outside the block, the harvest boundary is 5+m away. Inner block portions are ribboned with a 1-5m machine free zone. Reach across the red/yellow MFZ lines to harvest; retain non-merch trees and brush. Minimize crossings and avoid decking on the drainage. Cross as per the road plan.
Blk78-V	S3	Y	25+m	☒	The harvest boundary is 25+m away. Where the reserve narrows, create a 5m non-skid zone by reaching toward the harvest boundary and lifting merchantable trees away, retaining non-merch trees to increase wind firmness of the stream reserve. Cross as per the road plan.
Blk78-XX	NCD	N/A	0m	☐	The drainage is 15+m outside of harvest area; no special management is required. Cross as per the road plan.
Blk78 XVII – R1	S4	N	25+m	☒	The harvest boundary is 25+m away due to winter layout as an S3; no special management is required. Cross as per the road plan.

Blk78-XV	NCD	N/A	0m	☐	Drainage is 2+m outside of harvest area; no special management is required. Cross as per the road plan.
Blk79-XV	NCD	N/A	0m	☐	
Blk79-XVI	NCD	N/A	0m	☐	
Blk79 XVII-R2	NCD	N/A	0m	☐	The drainages are ribboned with 1-5m MFZ. Reach across the red/yellow MFZ lines to harvest; retain non-merch trees and brush. Skid across or below as mapped.
Blk79-XVIII	NCD	N/A	2+m	☐	The harvest boundary is 2+m away; no special management is required.
Blk80-XVII	S4	Y	25+m	☒	The harvest boundary is 25+m away due to winter layout as an S3; no special management is required. Cross as per the road plan.
Blk80-XIX	NCD	N/A	2+m	☐	The harvest boundary is 2+m away; no special management is required.
A RMZ Wind Firmness Assessment: ☐ has been completed ☒ is not required					
Comments: Cross streams as per the Road Plan; minimize crossing of NCDs within blocks. Harvest across NCD MFZs but retain non-merch trees and brush along the drainages. Utilize non-skid zones to increase non-merch retention outside reserves to increase their wind firmness; note a 10m SMZ along blk75 stream S4-VI.					

FOREST HEALTH

PEST	Pest Species Present & %:	CP082 Balsam bark beetle 48%, Spruce bark beetle 36%, Mountain pine beetle 29% (45% total) CP695 Balsam bark beetle 28%, Spruce bark beetle 30%, Mountain pine beetle 100% (29% total) CP082 budworm amounts to another 44% live damage.
	Actions Proposed:	Winter harvest beetle affected trees; attack is largely grey attack.
WINDTHROW	Blowdown%:	CP082 is 34% dead and 5% blown down. CP695 is 31% dead and 6% blown down.
	Actions Proposed:	Harvest dead and down trees along with the rest.
WINDFIRMNESS ASSESSMENT	☒ is not required	☐ has been completed, comments:

FOREST STEWARDSHIP PLAN OBJECTIVES AND MANAGEMENT

FSP Consistency – Section numbers refer to the objectives as listed under the *WFM-PIR, 2018 Bulkley TSA Forest Stewardship Plan*. Ensure objectives and results/strategies are reviewed as the following checklist is intended to be utilized as a summary of FSP content. Include information on the targets and the measure of present condition in comments section.

5.1 Biodiversity

5.1.1 Core Ecosystem

- ☐ Block is in a Core Ecosystem Rationale for permanent road:
- ☒ Block is not in a Core Ecosystem ☐ Harvesting follows decision Matrix for Harvest
- ☐ The level of infestation within and adjacent to Core warrants harvest

Comments: The associated Road Plan manages CORE adjacency concerns through minimal road construction, deactivation, and access control.

5.1.2 Landscape Corridors (LRC)

- ☒ Block is in a landscape corridor ☒ Mature forest associated with the block is **greater than 70% (3 for 10 rule is met)**.
- ☐ Block is not in a landscape corridor ☒ Leave area is located within the landscape corridor being harvested and is not previously designated as a leave area.
- ☐ Block is greater than 1 Ha in size – retention of a minimum 60 stems per hectare greater than 15cm DBH is **prescribed**.
- ☒ Block is less than 3 Ha in size – stand structure considered
- ☐ Block is forest health related and greater than 3 Ha in size, rational ensures a 100m wide functional old forest corridor is maintained within the LRC associated with the clear-cut opening.
- ☒ All roads located in LRC are temporary access structures. If not provide rationale.

Comments: Road through the Netalzul Creek Landscape Corridor was constructed under CP076/R09511 and was necessary to access this otherwise isolated timber; plans are in place for deactivation and access control post-planting. CP082 is outside the landscape corridor but CP695 extends back into the corridor by harvesting 0.5ha in two patches requiring 1.17ha of associated leave area to meet the 3 for 10 rule (*extra 'leave' was retained in previous harvest and the 0.4h removal from CP076-047 'leave' will not be accounted for here*). Landscape corridor retained area amounts to 1.21ha.

Netalzul Creek corridor: the Bulkley TSA HLPO Analysis Report dated March 30, 2017 identifies the NC corridor to have 145.7ha >80yrs available to harvest; CP076 harvested 37.63ha and CP080/695 57.7ha, leaving a buffer of 50.4ha. These numbers were ~confirmed with the PIR (Forsite's) Nov 2017 rerun of the analysis. CP695 harvest (0.5ha) still leaves a 40.9ha buffer of CFLB greater than 80 years of age.

5.1.3 Seral Stage	
☒	Old seral targets are met.
☐	Old seral target not met; no old stands, based on VRI, included in harvest area.
☒	Mature and Old seral targets are met.
☒	Young seral target is met.
Rationale if seral targets are not met (otherwise inaccessible timber / layout complete prior to Jan1,2018 = Appendix J):	
Comments CP 082/695 is within the within the SBSmc2 subzone and seral stage targets for the Harold Price LU are to retain: (i) 11% greater than 140 years old; the Bulkley TSA HLPO analysis current status is 62% (CP079 had reduced this to 59.8%, still a margin of 6383ha). (ii) 23% greater than 100 years old; the Bulkley TSA HLPO analysis current status is 70% (CP079 had reduced this to 69.9%, still a margin of 6130ha). (ii) maximum of 54% less than 40 years old; the Bulkley TSA HLPO analysis current status is 28% (CP079 increased this to 30%, still a margin of 3099ha). SBSmc2 seral stage targets are still met as CP080/695 did not significantly affect these percentages/margins; nor will CP082/010/695. CP 695 also extends into the ESSFwv zone (despite exhibiting SBSmc2 vegetative characteristics). ESSFwv targets are to retain: (i) 19% greater than 250 years old; The Bulkley TSA HLPO Analysis Report dated March 30, 2017 identifies this group to be at 20% (a margin of 41ha). (ii) 36% greater than 120 years old; The HLPO Analysis identifies this group to be at 98% (a margin of 3,852ha). (iii) less than 22% at <40 years old; The HLPO Analysis identifies this group to be at 0% (a margin of 1,351ha). ESSFwv harvest targets the 120-250yr age class thus sufficient buffer exists. All seral stage targets are met with this proposed harvest.	
5.1.4 Patch Size	
☒	Patch size by natural disturbance type and landscape unit is as specified in Table 1 in FSP (is patch size trending to targets)
Comments: CP010/082/695 combined with openings <100m away that are <20 years old, exceeds 500 ha (although a collection of small & medium openings) and represent a large patch for the NDT3 in the Harold Price LU. The patch size target for "large openings" (250-1000 ha in size) is 60-80%; the March 30, 2017 Bulkley TSA HLPO Analysis Report indicates a current level of 0 % but was approaching targets with a future value of 22%. The ESSFwv portion of blk79 represents a small patch in the NDT2 (<40ha); 30-40% is the small patch size target and currently measures 11%. Any harvest <80ha (large) is trending towards targets for the NDT2 in the HP LU.	
5.1.5 Tree Species Diversity	
☒	Result or strategy doesn't apply
☐	Deciduous is greater than 10% of the net merch volume
☒	Deciduous is prescribed to be retained
Comments: Where operationally feasible retain all deciduous species; 50% Ac/At/Hw is reduced from the cruise as 50% is approximated to be removed for road-side processing.	
5.1.6 Stand Structure	
☒	The prescribed amount of WTRA is allocated
☐	Rationale to vary WTRA requirements is supplied
Comments: WTRA's have been assigned as per direction of the HP LU; for the SBSmc2 – 7% is required and for the ESSFwv, 1% is required. WTR is assigned as described below; legislated stream reserves were allocated as WTR; much of the additional was flipped to leave areas (5.95ha) vs WTR (3.68ha). In the SBSmc2 portion of CP82/695 there is 43.8 ha proposed for harvest and 3.56 ha of WTR assigned or 8% of the area to be harvested. In the ESSFwv portion of CP 695 there is 5.4 ha proposed and 0.12 ha assigned (2.2%). The WTR areas include one or more of the following attributes:	
☐	Diversity of wildlife tree retention strategies (e.g., a range of patch sizes combined with dispersed trees);
☒	Diversity of habitat types;
☐	Internal decay (heart rot or natural/excavated cavities present);
☐	Crevices present (loose bark or cracks suitable for bats);
☐	Large brooms present;
☒	Active or recent wildlife use;
☐	Tree structure suitable for wildlife use (e.g., large nest, hunting perch, bear den);
☐	Large trees for the site (height and diameter) and veterans;
☒	Representative of the size, age and species of the pre-harvest stand.
5.2 Wildlife —PIR's FSP requires an amendment to incorporate UWH #6-007	
5.2.2 Goat	
☐	Block is in Mapped Goat Habitat
☒	Block is not in Mapped Goat Habitat
☒	Block <1km of Mapped Goat Habitat
☐	Portion of block in goat habitat is less than 5 ha or is non-clearcut
☐	Harvesting not planned for April 15 to July 15
☒	Deactivation or access control is planned for roads within 1 km of goat habitat
☐	Harvest timber within only one goat habitat polygon in a Landscape Unit in a given calendar year
☐	Harvesting maintains greater than 50% of the Crown Forested Land Base in a Mature seral stage in the affected goat habitat polygon
☐	Harvesting within the goat habitat polygon is limited to 10% of the area contained within the habitat polygon
Comments: Goat GAR order UWH #6-007 is now in-place over the previous Bulkley LRMP direction (Oct23, 2019 email from Kasia Kistowska BIT B.Sc. Ecosystem Section, Resource Management Division). The spur into blk79 extends into the 1km buffer associated with this current goat habitat area as does blk79 and blk43. Consider stopping road construction short of the mapped buffer only if deemed 'not required for harvest'. These activities must not: - result in material or adverse disturbance to goats. - occur between Nov1 and June 15 unless timber is considered winter ground only <u>and</u> the limit of harvest in a winter season is a maximum of 10% of the 1km buffer area. New roads will:	

- be constructed in a manner that will facilitate effective deactivation (access control is required if not effective)
- deactivated as soon as practical within 2 years following harvest completion including road construction.

Road permit layout and block harvest approval occurred prior to this order being invoked but blocks and roads will come close to meeting the requirements; as above, consider stopping road construction short of the buffer where deemed not required for harvest. SUs were not all designated winter only due to soil variations throughout the blocks; Blk079 soils are designated winter only and blk 043 soils do have winter only sections (i.e. 10 sites or clay soils) within the 1km buffer. Most sites are 09 sites which are typically winter harvested by PIR; i.e. adjacent winter harvest permits CP076/079/080/695.

5.2.2 Grizzly

☒ Block is in Mapped High Grizzly Habitat	☒ No permanent road proposed in High Value Habitat or rationale for road is supplied and access control proposed
☐ Block is in Mapped Mixed Grizzly Habitat	☒ Harvesting / Road construction planned in periods of non Grizzly use (October 31 to May 1)
☐ Block is in Mapped Moderate Grizzly Habitat	☒ Deactivation or access control is planned for all roads in grizzly habitat or grizzly SMZ to ensure open road density is less than 0.6km/km ² within 2 years of harvest completion.
☐ Block is in Mapped Boucher SMZ	☐ Block is adjacent to main haul road – visual buffer is prescribed
☐ Block is in Mapped North Nichyeskwa SMZ	☐ Block is adjacent to classified wetlands – visual buffer is prescribed
☐ Block is in Mapped South Nichyeskwa SMZ	☐ Areas of high grizzly bear use are excluded from harvest.
☐ Block is not in Mapped Grizzly Habitat	☒ No permanent road proposed in High Value Habitat or rationale for road is supplied and access control proposed

Comments: PIR's Dec6, 2017 update of the Bulkley TSA HLPO Analysis Report indicates the Harold Price #1 grizzly bear habitat polygon to have a current road density of 0 km/km² with a future value of 0.955km/km²; CP076 roads were deactivated post-planting. In order to ensure road density is minimized, all roads are to be permanently deactivated within 2 years of harvest completion which equates to post-planting. Access control is at least required at the Netalzul Creek bridge if not sooner along the 350rd.

5.2.2 Moose

☐ Block is in Mapped Moose Habitat	☐ Block has greater than 5% deciduous net merch – deciduous retention is prescribed
☒ Block is not in Mapped Moose Habitat	☐ Block is adjacent to main haul road – visual buffer is prescribed
	☐ Deactivation is planned for all roads not required in the future
	☐ Pesticides are not prescribed to treat brush

Comments: Two moose wallows are protected by Leave areas in the adjacent CP010-042.

5.2.2 Deer

☐ Block is in Mapped Deer Habitat	☐ Block has greater than 5% deciduous net merch – deciduous retention is prescribed
☒ Block is not in Mapped Deer Habitat	☐ Block is adjacent to main haul road – visual buffer is prescribed
	☐ Deactivation is planned for all roads not required in the future
	☐ Pesticides are not prescribed to treat brush

Comments: na

5.2.2 Caribou

☒ Block is not in Telkwa Caribou Recovery Area	
☐ Block is in Telkwa Landscape Unit portion of Telkwa Caribou Recovery Area	☐ Mature seral targets are met.
	☐ Young seral target is met.
☐ Block is in Valley Landscape Unit portion of Telkwa Caribou Recovery Area	☐ Mature seral target is met.
	☐ Young seral target is met.
☐ Deactivation is planned for all roads not required in the future.	
☐ All permanent roads not to be deactivated have an access control point to be established within 5 years following harvesting.	
☐ Block is adjacent to main haul road – visual buffer is prescribed.	
☐ Block is adjacent to classified wetlands – visual buffer is prescribed.	
☐ WTR's are focused on retaining key caribou habitat features.	

Comments: na

5.3 Fish Habitat and Water Quality

5.3.1 Riparian Values

- ☒ Drainage structures are adequately sized

Comments: Road construction is managed under the R09511-CP082/010/695 access Road Plan. Note in-block streams have red/yellow MFZ ribbon applied to protect the drainages and promote retention of non-merchantable trees and brush.

5.3.2 Fisheries Sensitive Watersheds

☐ Block / Road is in an FSW	☐ Fisheries Sensitive Watershed Targets not exceeded
☒ Block / Road is not in an FSW	☐ If targets not specified – watershed assessment carried out
☐ Are watershed assessment targets met for watersheds not identified as FSWs (review PIR layer for areas with watershed assessments completed)	

Comments: This area is not within an identified watershed.

5.3.3 Community Watersheds

☐ Block is in the Canyon Creek CW	☐ Practices will avoid the deposition of deleterious substances in watercourses
☒ Block is not in the Canyon Creek CW	☐ Timber harvest or road development is within 100 m of a water intake
	☐ Water licensee has been contacted re: operations
	☐ No excavated or bladed skid trails are planned

Comments: na

5.3.4 Fish Habitat	
☒ Road is within 1 km of a Wilderness Lake	☒ Measures are proposed to prevent motorized access
☐ Road is not within 1 km of a Wilderness Lake	
<p>Comments: CP082 is within the 1km measure; the 350rd extension and 045-SP2 come within 1km (725m) of the proposed Netalzul Meadows Lake as described below.</p> <p>The current listing of proposed wilderness lakes in PIR's proposed FDU, based on the draft wilderness lakes proposal dated July 2002, is as follows: Touhy Lake, Mooseskin Johnny Lake, <u>Netalzul Meadows Lake</u>. Until there is an official designation of wilderness lakes in the Bulkley TSA, PIR will follow the strategies listed under subparagraph 5.3.4.2 when operations occur in the area of the lakes listed above.</p> <p>The Road Plan provides for deactivation and access control to this regard.</p>	
5.4 Enhanced Timber Dev. Areas	
☐ Block is in ETDA	☐ Block is in Mature or Over Mature Stands
☒ Block is not in ETDA	☐ Rationale is provided why block is not in mature or over mature stands
Comments: na	
5.5 Outdoor Recreation	
5.5.1 Recreation Opportunities	
☐ Result or strategy doesn't apply	☒ Block or road is in or near a Recreation Site; see park adjacency comments below.
	☐ If the block is proximal to a trail – measures are prescribed to remove debris and re-establish the trail head
5.5.2 Recreation Access	
☐ Result or strategy doesn't apply	☒ Road accesses a recreation site or trail
	☐ The DM has been approached to assume road responsibility prior to deactivation
<p>Comments: The Netalzul Meadow Provincial Park Management Direction Statement (Sept-2000) suggests the park role is one of conservation and increased access for recreation is not desired. Minimizing access will encourage only the avid enthusiasts seeking nature appreciation and ecological research opportunities. Discussions with L. Vanderstar (FLNRO's Skeena Region Ecosystem Biologist) and D. Fillier (BC Parks Northern Region Conservation Biologist) has occurred for CP076 blocks closer to the park and an access management plan was agreed to-see CP076 Road Plan document for details.</p> <p>Deactivation and access control prescriptions for goat, grizzly, and wilderness lake management above will meet Park adjacency concerns.</p>	
5.6 Visual Quality	
☐ Road or block is in a scenic area	☐ Activity is consistent with Category of Modification
☒ Road or block is not in a scenic area	☐ A visual impact assessment has been completed
	☐ Rationale as to why an exception is required is supplied
Comments: na	
5.7 Ag/Wild Zone	
☐ Road or Block is in an Ag/Wild zone	☐ The appropriate wildlife species result or strategy has been applied
☒ Road or Block is not in an Ag/Wild zone	
Comments: na	
5.8 Cultural Heritage Resources	
☒ Reasonable efforts have been made to communicate with first nations	
☐ A Cultural Heritage Resource Evaluation was completed	☐ No CHR Features Found
	☒ CHR Features Found
☒ Where CHR features were found copies of CHR evaluations provided to affected First Nations	
☒ District CHARI and CMT policies followed	
<p>Comments: CP082/010/695/R09511 was information shared with the Office of the Wet'suwet'en, Moricetown Band Office, and Lake Babine Nation on March 8, 2019. FSP Information sharing was deemed adequate by FLNRO for non-Wet'suwet'en FN groups as per correspondence received on Aug7,2019 by William Elliot, Advisor, First Nations Relations. Due to 2019 OW comments ("Conservancy Area - No Harvesting (Sec.35 Rights) access roads/logging threaten wildlife, wetlands, medicinal plants, etc."), authorizations staff may require CP-level consultation with the Wet'suwet'en groups to advise their statement on 'info-share deemed adequate'.. Additional rationale was provided to the DDM and OW as to PIR's continued harvest in this location regarding pest incidence and dead / dying timber; permits were approved. Since then (Nov20,2019) the OW were addressed by FLNRO indicating PIR's information sharing was deemed adequate.</p> <p>- The Road Plan prescribes management of a single post-1846 CMT in CP082. Information of this CMT was sent to the Office of the Wet'suwet'en and LBN September 3, 2019. Stub this CMT to retain it over time (provided it isn't so fragile it breaks during the attempt).</p>	
5.9 Soils	
☐ The block is located on mapped class IV /V terrain	☐ A terrain stability field assessment has been carried out
☐ The block is on erodible soils	☒ No soil related concerns
☐ The block is located on a fan	
Comments: na	
5.10 Resource Management Zones	
☐ Block is in Babine RMZ	☐ Access control or deactivation is prescribed for roads
☒ Block is not in Babine RMZ	☐ No road is prescribed within 300 m of the Park
	☐ Block is less than 15 ha or rationale is provided
☐ Block is in the Reiserter RMZ	☐ A 20m reserve and a 20m RMZ is applied to all 1:20 mapped S4, S5 and S6 streams
☒ Block is not in the Reiserter RMZ	☐ Access restrictions have been considered
☐ Block is in Jack Mould RMZ	☐ Permanent road is not proposed within 1 km of Jack Mould Lake
☒ Block is not in Jack Mould RMZ	

☐ Block is in Mooseskin Johnny RMZ	
☒ Block is not in Mooseskin Johnny RMZ	
Comments:	
6.1 Invasive Plants	☒ An annual review of invasive plant locations has occurred
☐ Result or strategy doesn't apply	☒ Seeding has been prescribed for all areas with greater than 0.1 ha mineral soil exposure.
Comments: The Invasive Alien Plant Program-Map Display at https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/invasive-species/iapp?keyword=IAPP was reviewed October 24, 2019; oxeye daisy, Canada thistle, and yellow hawkweed are present intermittently along the 3000rd. Grass seed new road construction and disturbed soils greater than 0.1ha to avoid the spread of invasive plants into the block.	
6.2 Natural Range Barriers	☐ Range Tenure Holder has been contacted/referred
☒ Result or strategy doesn't apply	☐ Range Tenure infrastructure mapping layer has been reviewed.
	☐ Mitigation measures have been prescribed to accommodate barrier removals
Comments:	

SIGNATURES		
Field Assessment Completed By:	Luke Weyman RPF, Tyhee Forestry Consultants	Date: May 30, 2019
Form Completed By:	Paul Schwarz RPF, PIR	Date: December 2, 2019
	Licensee Acknowledgement of Commitment  Date Signed (Y/M/D)	Licensee RPF's Signature  Date Signed (Y/M/D)

Attachments:	☒ 1:5,000 SP Map ☐ Rationales	
Assessments:		Completed By:
☐ Terrain Stability Field Analysis		
☐ Visual Impact Assessment		
☐ Cultural Heritage		
☐ Windthrow		
☒ Riparian (Biologist)		Triton Env. Consultants Ltd. 1998
☐ Wildlife (Biologist)		
☐ Watershed Analysis		
☒ Migratory Bird		Tyhee Forestry summer/fall 2018 and Aug 3, 2019
☒ Higher Level Plan Order Analysis Report Review		Forsite Consulting Ltd. Dec 6, 2017 HP update to June 3, 2017 analysis

CONSTRUCTION CONFORMANCE STATEMENT (AS-BUILT SIGNOFF SHEET)*to be completed by person constructing the road and filed with the road permit*

I am the person responsible for construction of the road and I confirm that the following statements are correct:

Print Name

Signature

Date

Tick the appropriate ☐ to validate each statement covered by the signature above:

1. Stumps, roots and embedded logs are to be left or placed in the road prism on the outside of the road subgrade width on the downhill side, and I have reasonable grounds to believe that doing so will not significantly increase the risk of a failure of the road subgrade
☐ applicable ☐ not applicable
2. Stumps, roots and embedded logs are to be left in the road prism within the road subgrade width, and I have reasonable grounds to believe that doing so will not significantly increase the risk of a failure of the road subgrade
☐ applicable ☐ not applicable
3. Inverted stumps and corduroy or puncheon are used to support the fill material and the required vehicle loads, and I have reasonable grounds to believe that doing so will not significantly increase the risk of a failure of the road subgrade
☐ applicable ☐ not applicable
4. Roads have been constructed to the standards and specifications detailed by this document, if any changes have been made, these changes have been documented and mapped as necessary
☐ applicable ☐ not applicable