Dated: July 1, 2014

Hans Penner/Ross Muirhead
Elphinstone Logging Focus (ELF)
PO Box 85
Roberts Creek, BC, V0N-2W0

Dear Hans and Ross,

Re: Preliminary Field Reconnaissance of proposed BCTS cutblock (DK44, TSL A79517)

This letter provides the results of a Preliminary Field Reconnaissance (PFR) that took place June 17, 2014 by the author (Jim Stafford), archaeologist John Maxwell and yourselves, Hans Penner and Ross Muirhead of Elphinstone Logging Focus (ELF). The PFR was undertaken by request of ELF to identify the potential for archaeological resources to be impacted by forest harvesting developments (i.e. cutblocks) proposed by BC Timber Sales on lower Howe Sound, near the Strait of Georgia. Maps are attached which show the study area, survey coverage and identified archaeological features.

Background and Proposed Development
The proposed development is a series of forestry cutblocks referred to here as DK-42, 43, 44 and 44b as part of former TSL A79517¹ (see attached cutblock maps). These cutblocks make up the general 'study area' (although survey focused on DK44) and are located near the headwaters of Dakota Creek, which flows into Howe Sound near Port Mellon (see attached overview map). The study area is associated with a northwest facing ridge at the height of land between Howe Sound and the Strait of Georgia, between about 800 to 1000 m above sea level (asl) and 2.5 to 4.5 km from Howe Sound.

Proposed cutblock DK44 is about 40 hectares in size covering an area approximately 1200 m by 500 m. A significant bench feature and three small lakes are associated with DK44 at about 900 m asl. The DK44 surveyed area was remarkably open and accessible and, when present, the understory comprised mainly of dense blueberry. Relatively few fallen trees were observed. Two significant creek gullies (headwaters of Dakota Creek) bisect the northern portion of DK 44 and a larger tributary of Dakota creek is located at the southwestern boundary of DK44 and eastern boundary of DK42. Forest cover includes stands of old growth mountain hemlock and balsam, stands of old growth yellow cedar and mixed stands containing yellow cedar.

The project is within the traditional territory of the Squamish Nation. A cursory review of the ethnographic literature indicates the Squamish occupied the lower Howe Sound area and villages at nearby Port Mellon and Gibsons.

¹ These cutblocks were previously to be sold as TSL A79517 but after receiving no bids have since been combined with another cutblock to become TSL A87126. The former designation will be used in this report to describe the areas surveyed.
According to the BC Archaeology Branch (Vashti Thiesson pers comm. 2013), the blocks were the subject of a “cursory field inspection” by a qualified archaeologist and the results were “negative”. At that time, no report had been produced. A recent check of the online BC Archaeological database (RAAD) indicates no archaeological sites have been registered within or very near the study area. The closest archaeological sites were recorded by the author in 2012, grouped as DiRv-9 to 15 and located about 2-3 km west of the current study area, representing many bark harvested yellow cedar CMTs in association with the sub-alpine headwaters of Roberts Creek.

Methods
Survey and inspection of the study area took place June 17, 2014. An existing trail provided quick access to DK44 from the existing decommissioned logging road, through block DK42. At the time of survey, the proposed cutblocks had been engineered. Due to time considerations, the survey focused primarily on areas within Block DK44 that had been identified by ELF as having potential for Culturally Modified Trees (CMTs). Survey of DK44 proceeded in a counterclockwise fashion from Falling Corner (FC)60.

1:5000 scale maps and handheld GPS units were used to navigate and map any identified features. Notes and photos were taken regarding in field potential, forest type, tree stem condition (e.g. presence of scarring and health of tree) and the presence of cultural and natural attributes on potential bark harvest scars.

The following criteria were relied upon to identify CMT features:

- Presence of long tapering scars with regular lobe development;
- Presence of multiple long tapering scars on one tree;
- Clustering of tree stems with long tapering scars;
- Presence of scar crust;
- Presence or indication of a ‘base’ where tree was cut for bark removal, and;
- Presence of multiple termination points at top of visible scar (i.e. where two or more adjacent strips had been removed from one side of the tree, but where the tops had diverged slightly, leaving a “V” of remnant bark).

GPS tracks and waypoints were transferred to GIS and overlaid on TRIM base map images acquired through IMAP BC as well as the block DK44 map. Survey was aided by good weather and good visibility but hampered by our inability to remove rotted sections of trees in order to find scar crust (a strong cultural indicator)².

Results
The foot survey and inspection of scarred trees of DK44 resulted in the identification of more than 33 apparent bark harvest scars (i.e. CMTs) on yellow cedar trees. Our traverses and distribution of noted CMTs is shown on the attached map, as well as several numbered areas referred to below in this summary (circled in red on attached map). The level of confidence for assigning a cultural origin for the scars varied but we are confident that CMTs do exist in DK44 and there is high potential for further CMTs to exist in the general study area, which includes DK42, 43 and 44b. There is also some unknown potential for other site types, such as rockshelters, caches, lookouts, bear hunting/kill sites (traps, bears dens).

² Alterations to archaeological features, which may include the removal of rotted core sections of a CMT to locate scar crust, can only take place under a Heritage Conservation Act permit. Invasive techniques were therefore kept to a minimum.
Survey proceeded in a counterclockwise fashion from Falling Corner (FC)60, heading south through a stand of hemlock towards an area identified by ELF as having cedar CMTs. Several good examples of CMTs were recorded in Area 1 and 2, found clustered on a south facing ridge with abundant blue berry (Photo 1 to 5), with scar crust being observed within a multiple scarred, old dead yellow cedar in Area 2 (Photo 5). A flat and open bench north of Area 1 was noted to contain potential for subsurface deposits associated with short-term camps. An effort was then made to traverse the remaining portion of DK44 with two independent traverse crews, making notes of cedar trees considered to be naturally and culturally scarred. Of note, both crews independently identified cultural scars in the same areas, raising the confidence in the results and corroborating known patterns of cultural use. This includes apparent clusters (Areas 3 and 4) near stream 3. A number of probable CMTs were quickly noted in the northern portion of DK44, along the eastern boundary, near a small lake and in close proximity to the road leading to proposed block DK44b. A cluster of CMTs (Area 5) was also noted near the trail between DK44 and DK42, with two cedar exhibiting four scars and one with three scars.

While there are many scarred cedar trees in DK044 which appear to be natural, assumed to result in part from bear use, many of the trees exhibit long tapering scars with straight healing lobes on stems suitable for stripping by humans (i.e. 20-60 cm dbh). Cedar trees with several multiple long tapering scars were also noted including instances with two or more trees in close proximity to one another exhibiting long tapering scars somewhat evenly spaced around the stem of the tree. This includes several CMTs with four scars extending 7 to 10 m up one stem. Many trees showed evidence of strips being removed from opposite sides of the tree, a common bark harvesting occurrence. As well, a few examples were noted where the tips of divergent taper strips could be discerned at the top of the scar (Photo 6), another strong indicator of systematic bark removal by humans.

‘Scar crust’ (which develops like a hard smooth scab when the bark is mechanically removed from the tree) was difficult to locate, as very few rotted trees (standing dead or on the ground) were identified and thus non-invasive access into the interior of the trees not possible. Scar crust was observed however in a few instances and in associated with tapering scars and in areas with several multiply scarred/stripped trees. Note that scar crust is more difficult to find on yellow cedar as opposed to red cedar, due to the relative inability of yellow cedar to heal (as compared to red cedar) after being stripped or damaged. Also note that scar crust can result from any mechanical bark removal on a healthy cedar tree and thus bark removed by bears and tree fall may result in scar crust. However, such damage is distinct, leaving single irregular and relatively short scars, often with apparent wood damage from impact (in the case of tree fall) or teeth/claw marks (in the case of bear damage); the scar crust is also irregular and often isolated on limited sections of the healed scar. A more comprehensive and invasive inspection of the scarred trees under a Heritage Conservation Act permit would result in the identification of better examples of both natural and cultural scarring.

We also identified other patterns on the landscape which raise our confidence in identifying the scarred trees as being CMTs. This includes the apparent distribution through time and space of the trees we were confident were cultural. Although probable CMTs were identified throughout the block, we found many probable CMTs clustered near creek margins and on a ridge. This fits well with my understanding of use of the landscape, with creeks and ridges being used as travel routes and trees near the creeks and ridges being harvested first and thus these areas being more heavily used. It was also apparent that healthy living cedar trees smaller than about 60 cm

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3 However, instances of bears removing tapering sections of bark up to 5 m in length have been noted by the author in the past.
exhibited no cultural scarring, with the exception of a few cedar trees we identified as most likely being modified by bears. The lobe thicknesses and tree size indicates the bark harvest scars are at least a few hundred years old. The sudden decline of local Indigenous peoples populations during the 1800's would explain the lack of more recent cultural scars.

The limited distribution of yellow cedar on the northwest coast is also an indicator that CMTs should occur in this area. Yellow cedar only grows at elevations above 600 m in this area of the BC coast and that it was highly prized (more so than red cedar) and sought out by Indigenous peoples for specific uses (see Stewart 1984). As indicated in the Plants of BC Handbook (Pojar and McKinnon 1994: 41):

> The prepared bark [of the yellow cedar] was used especially for weaving and blankets throughout the coastal region, where it was preferred to red cedar bark because of its softness. Often it was interwoven with duck down or mountain-goat wool, or it was trimmed with these materials. Woven robes, hats and capes made from the fine soft yellow-cedar bark repelled water and protected people from the rain. They used shredded bark as bandages, washcloths and towels.

Yellow cedar wood was also a valuable commodity, suggesting potential for aboriginally logged features to exist.

The density of oval leaf or mountain blue berry (a highly prized Indigenous food) throughout the block, is also remarkable. My experience is that bark harvesting is often associated with berry picking areas and while these activities may occur at differing times of the year on this part of the coast (yellow cedar bark stripping in late spring and blue berry picking in fall), well established travel routes would have allowed repeated access to these hilltops by both women and men at different times of the year. The occurrence of unique high elevation wetlands and small lakes also raises questions about other resources, plant and/or animal, that may have attracted people in the past. Of note, Howe Sound was visible from many areas of DK44 and the topography suggests it may be easily accessible via a ridge that extends eastwards from the block.

Many apparently naturally scarred cedar were observed and noted. This includes many trees, which have short wide tapering scars and other which reach to the crown of a damaged tree; small scars isolated on the mid and upper stem; or short wide scars near the base. No evidence of fire scarring was noted. As indicated, it did appear that many of the cedar trees had been damaged by bears, who will peel the bark and eat the inner cambium. The co occurrence of bear and human scarring is not surprising but does lead to questions about bear and human interactions in prehistory⁴. There is also potential that some of the scars that are not long and tapering, are in fact cultural scars, associated with other types of bark harvesting such as rectangular removals for berry baskets or roofing, or short strips for utilitarian uses such as tump lines for carrying bark bundles down the mountain.

As the survey focused on scarred cedar trees, there was less focus on searching exposures and rock faces, pools, etc. for other signs of cultural use and archaeological features or deposits – thus the potential is somewhat unknown. However, a flat bench just north of Area 1 was noted to have potential for short-term camps as was an area near the northern-most small lake adjacent to DK44.

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⁴ Humans will commonly hunt bears in their dens.
Summary and Recommendations
In sum, our brief survey of DK44 indicates that yellow cedar bark harvest features that pre-date 1846 (and thus are protected under the Heritage Conservation Act) do exist in DK44 and there is high potential for further undiscovered CMT features to exist in the general area. There is also some unknown potential for other site types, such as rockshelters, caches, lookouts, bear hunting/kill sites (traps, bears dens).

The results of this limited and brief survey are preliminary. Further survey and research is required to adequately inspect and assess these developments as all the patterns of past human use are not easily discernable in a one day outing. While it is possible that some of the scarred trees identified as CMTs are natural, it is more likely that we are underestimating the use of this area and that a comprehensive assessment will continue to bring to light many more features and differing use areas/archaeological site types.

It is clear that, although ethnographically documented, the occurrence of yellow cedar CMTs near the coastal mountain-tops has been under reported by archaeologists (see Stafford & Maxwell 2006). The online archaeological database (RAAD) of the nearby Howe Sound area indicates only one site has been recorded on the hillsides away from the ocean, this being a single aboriginal stump above Port Mellon5. The author has found that historically CMTs have generally been overlooked, although aboriginally logged features and rectangular scars have been commonly recorded in some areas of the coast (Stafford & Maxwell 2006). These relatively obvious CMT features are generally attributed to activities undertaken by men, creating a gender bias in the archaeological record. As the higher elevation forests are now being infringed upon more frequently, due to the historic harvest of the low and mid elevation forests, it is important to now acknowledge the Indigenous use of these high elevation areas and potential for a variety of archaeological sites to exist – including yellow cedar CMTs. Currently, these high elevation yellow cedar bark harvest sites have been recorded on the BC coast in only a few areas (Stafford & Christensen 2003, Stafford & Maxwell 2008, Stafford et al 2003, Mclaren et al 2004), thus making these sites unusually significant. It is therefore recommended that, in order to properly inventory and provide management for the proposed development, an Archaeological Impact Assessment (AIA) be undertaken in proposed forestry cutblocks DK42 to 44b under the terms and conditions of a Heritage Conservation Act permit.

Please contact me if you require any further information.

Thank you,

Jim Stafford
Principle Archaeologist, Coast Interior Archaeology

cc. Doug Glaum, BC Archaeology Branch; Lisa Wilcox, Squamish Nation

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5 This is remarkable as isolated bark harvest CMTs are commonly found in second growth forests as dead standing stems or fallen stems in other coastal areas (e.g. TFL 37, Nimpkish Valley, Stafford et al. 2010).
References Cited

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2004 *Archaeological Inventory of Ka:'yu:k't'h/Che:k'tles7et'h' Territory, Phase II: Report for qa'opinacath hahoothlee, Kauwinch Drainage.* Report prepared for the Ka:'yu:k't'h/Che:k'tles7et'h' First Nation, International Forest Products and the Ministry of Forests, Campbell River District. On file at the BC Archaeology Branch, Victoria, BC.

Stafford, J. and T. Christensen
2003 *Northern Moresby Island, Skidegate Channel & Inlet, Haida Gwaii.* AIA, including Blocks Long 36, Chan 02, Copp 27, 28, 34 & 37, Gray 26 & 28, Shel 01, 03. Prepared for & Distributed to: The CHN, Teal-Jones Timber Ltd. & The Archaeology Branch of BC under Conditions of HCA Inspection Permit: 2002-009.

Stafford, J. and J. Maxwell

2008 *Loss Creek, Jordan River, Vancouver Island, Archaeological Impact Assessment of WFP Block 570.* 2006-434 Final Permit Report prepared for WFP, Jordan River. On file with the BC Archaeology Branch, Victoria BC.

Stafford, J., J. Maxwell, T. Christensen

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2010 *Nimpkish TFL 37, Archaeological Overview Assessment: Year 1 preliminary Report.* On file with the Archaeology Branch of BC.
Photo 1. Area 1 panorama showing dense blue berry and yellow cedar. Hans Penner at center beside double scarred yellow cedar uncertain CMT. J Stafford, June 17, 2014.

Photo 2. One of two scars on uncertain CMT (same as pictured in photo 1) noted in Area 1. J. Stafford, June 17, 2014 (JSWP119). Note enormous lobe growth.
Photo 3. Area 2 CMT with scars on opposite side of tree, found in cluster. JSWP123. Scar 1 at left and 2 at right. J Stafford, June 17, 2014.
Photo 5. Area 2, dead standing CMT with three scars shown at left (JMWP746); scar crust visible in rotted core (photo at right). J. Maxwell, June 17, 2014.
Photo 6. Area 3 CMTs. At left, multiple scarred yellow cedar in cluster; scar crust located (JMWP748); At right CMT with divergent tapering tops (JMWP747) – damage on lobe from tree fall.
Approximate Area of archaeological sites DiRv-9 to 15

Approximate Study Area, DK42-44b.