

27 February, 2004

Renee Racette  
Woodward and Company

Re: Walker's Hook Professional Archaeological Opinion

Dear Ms. Racette

I would like to express my concern about two major archaeological issues regarding the Walker's Hook site and development. The first concerns the possible contamination of the midden by waste from the Sablefin Hatchery development.

I note that Sablefin claims that the water levels in the injection wells will remain below the depth at which cultural deposits were found and thus, there is no danger of contamination to the midden. Although I cannot speak to the possibility of effluent contamination at the surface of the midden from a cracked or faulty pipe fitting, or contamination at the bottom of the well-casings, I can address the potential for damage to the cultural deposits if such contamination should occur.

Bone is composed of organic and inorganic fractions. The organic component (collagen) decomposes as bones weather in aerobic conditions in which microorganisms flourish. The inorganic fraction of bone is primarily composed of hydroxyapatite,  $\text{Ca}_5(\text{PO}_4)_3(\text{OH})$ , and is more resistant to weathering. It tends to preserve well in shell middens due to the addition of calcium carbonate to the soil as a result of shells leaching calcium carbonate (calcium carbonate is the major constituent of shells). The normally rather acidic soils of the Pacific Northwest become more alkaline with the addition of calcium carbonate, thus improving conditions for bone preservation. When the hydroxyapatite component of bone is preserved in a midden it is in an equilibrium state with the calcium and phosphate ions in the soil. The ratio of calcium and phosphate ions in a soil affects the solubility of the hydroxyapatite. The addition of chemicals and or water into the midden can change that equilibrium and promote the decomposition of the bone.

As regards the "nature and extent" of the DfRu 2 site, I note this passage in a letter from I.R. Wilson, the archaeological consultants for Sablefin Hatchery, to Mr. Minkoff dated January 9, 2004:

DfRu 2 is a known archaeological site recorded in 1974 by Beth Hill. Knowing of the presence of the site within proposed development, Mr. Gidon Minkoff of Sablefin Hatcheries Ltd. contacted I.R. Wilson Consultants Ltd to discuss possible archaeological requirements. Mr. Ian Wilson met with Mr. Minkoff and after review of the area,

determined that because of the nature of the landform, there was no question, in Mr. Wilson's professional opinion, that the proposed development would impact the site. Therefore, it was determined that it would not be necessary to conduct an archaeological impact assessment (AIA) since the nature and extent of the site was relatively well-documented and also because the nature and extent of impact was also known.

While it is not disputed that an AIA is not necessary to determine that the development will (and has already) impacted the site, I disagree with the conclusion that because impact is definite an AIA is unnecessary. How do we know what is being impacted without an AIA? My understanding of I.R. Wilson's statement is that the conclusion that an AIA was not necessary is based on the site inventory form recorded in 1974 by Beth Hill. No other information is cited as a basis for this determination. Thus, a cultural resources management decision involving the destruction of a recorded archaeological site was based on the information presented on a site inventory form filled out in 1974.

My understanding of the purpose of an archaeological site form is to record the location of a site and generate baseline information. The British Columbia Archaeological Inventory Guidelines (2000:1), confirms this understanding and states that site inventories were conducted in various regions of the province in the early 1970's to gather baseline information on the location of archaeological sites.

The archaeological site location information gathered in the 1970s enabled archaeologists to determine where proposed developments might conflict with archaeological sites. However, by the mid-1990s accumulated changes in heritage legislation, types of industrial development and even newly recognized types of archaeological sites made it clear that there was a need for further archaeological inventory studies. Such studies would improve our understanding of the resource and aid in managing development related impacts to archaeological sites.

In my professional opinion, the nature and extent of the archaeological site (DfRu 2) cannot be determined from a site inventory form alone, was not determined by the information presented on Beth Hill's site form, and in fact, has not yet been determined. For example, the horizontal extent of the archaeological deposits cannot be determined simply by looking at the surface and estimating or measuring the extent of the shell, as one routinely does when filling out a site form. Shell-bearing deposits may in fact have a different subsurface distribution, if for example, the extent of the use of the area has changed over time. At a minimum, coring and systematic shovel testing must be employed to make the determination of the vertical and horizontal "extent" of the site. It is also the case that not all cultural deposits on the Northwest Coast are shell bearing and some non-shell bearing deposits contain organic remains such as basketry, cordage, and

wood. The effect of contamination on water logged deposits (Corfield 1998) would need to be addressed if such deposits were found at DfRu 2. Has the possibility of non-shell bearing cultural deposits been addressed? Such information certainly seems pertinent to our understanding of the “nature” of the site. In order to understand the nature of the site, and thus the nature of the impact of the development on this important cultural place and archaeological resource, an Archaeological Impact Assessment is required.

I would like to make one additional comment addressing the nature of archaeological sites. While we know something about the native land use of this area based on First Nations’ memory, historic records and early European observations, we know very little about how the patterns of use and social organization changed over the several thousand year period the area was occupied. One of the aspects of the archaeological record that makes it unique and worth preserving from both the perspective of the archaeological community and the First Nations community is that it is our only material record of change over time, our only means of understanding the past.

Because of the juxtaposition of three unusual ecosystems at Walker’s Hook, a salt marsh, a coastal bluff and sparsely vegetated wetland, this is truly an unusual area. The unique nature of the ecosystem virtually guarantees that the DfRu 2 site was exploited in a unique manner prehistorically and it is highly likely that this pattern of exploitation changed over time. I would argue based on my experience in this region that the scientific potential of this site Syuhe'mun, or DfRu-002, is great. The location alone indicates that this site has the potential to provide information that may add greatly to our knowledge of the prehistory of this region. Despite the number of sites recorded here in the Gulf Islands, we have a poorly developed understanding of the exact nature of prehistoric land use. The time-depth of the ethnographically-reported seasonal round, for example is not known; nor is the exact nature and range of specialized activities that were eventually incorporated into that way of life. A site such as the one at Walker’s Hook has the potential to provide unique information about prehistoric land use and the changing nature of resource exploitation and human adaptation in this region.

Thank you for your consideration of these matters,

Kimberly D. Kornbacher, M.A.

## References

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