

Report For
The Archaeological Impact Assessment of Lot 1,
District Lot 208, Sayward District, Plan VIP 86955,
Gowlland Harbour, Quadra Island, BC

In Partial Fulfillment of Heritage Inspection Permit 2012-0328

Prepared For:

Rick Schellinck, Property Owner

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Klahoose First Nation
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BC Archaeology Branch
(Ministry of Lands, Forest and
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Management Summary

This report summarizes the results of the archaeological impact assessment (AIA) conducted by Baseline Archaeological Services Ltd. (Baseline) on October 18, 19, November 7 and December 13, 2012 under Heritage Inspection Permit 2012-0328. This permit, pursuant to Section 14 of the *Heritage Conservation Act (HCA)*, was issued to Aaron Bible on July 30th, 2012 to conduct an AIA at Gowlland Harbour, Quadra Island, BC (Lot 1, District Lot 208, Sayward District, Plan VIP 86955, PID 009-660-771). The assessment was requested due to the proposed rezoning, subdivision and development of the lot including the construction of multiple homes and the installation of related infrastructure (roads, services, trails, etc.). The subject property is located within the consultative boundaries of the K'ómoks, Klahoose, Xwemalhkwu as well as Wei Wai Kai and Wei Wai Kum First Nations who are members of the Laich-Kwil-Tach Treaty Society.

As per the *Archaeological Impact Assessment Guidelines* (Apland and Kenny 1998:10), the objectives of the AIA were to: (1) identify and evaluate archaeological resources located within the project area; (2) identify and evaluate all impacts by any proposed developments on identified archaeological resources; and (3) recommend viable management measures for managing potential adverse impacts to archaeological sites by proposed developments.

Prior to the AIA, a search of the Remote Access to Archaeological Data website indicated that previously recorded archaeological sites EaSh-13 (shell midden), EaSh-41 (shell midden) and EaSh-43 (shell midden and human burials) are recorded on the subject property.

The developer has placed sites EaSh-13, EaSh-41, and EaSh-43 within protected covenants. During the course of this study, the three previously recorded sites were revisited. In addition, three previously unrecorded archaeological sites (shell midden) were identified on the subject property and recorded as archaeological sites EaSh-71, EaSh-72, and EaSh-73.

Previously recorded sites EaSh-13, EaSh-41, EaSh-43, and newly recorded sites EaSh-71, EaSh-72 and EaSh-73 are located primarily along the outer boundary of the property. EaSh-41, EaSh-43, EaSh-73 and the majority of EaSh-72 are restricted to the shoreline. The majority of the sites are located outside of the development area that is situated on the higher elevations of the property, separated by an abrupt slope break from shoreline areas. EaSh-71 and EaSh-72 are partially located within the development area situated on the east and west sides of the point at Gowlland Harbour. Current development plans will impact portions of the sites including some intact deposits within EaSh-71 and EaSh-72. The sites are protected under the authority of the *Heritage Conservation Act (HCA)* and neither may be altered, damaged, moved, excavated in, or desecrated in any way without a permit issued under Section 12 or 14 of the *Heritage Conservation Act*. The developer will need to apply for and receive a Section 12, Site Alteration Permit, which will include in its conditions monitoring by a qualified archaeologist for any surface or subsurface work to take place within the boundaries of the sites.



Photo 1: Looking West over Unkak Cove.

Table of Contents

Credits.....	2
Acknowledgements.....	3
Management Summary	4
Introduction.....	7
Project Area	9
Ethnographic Background of the Study Area	11
Archaeological Background of the Study Area	12
Expected Site Types	13
Methodology	15
Results.....	22
Archaeological Site Significance.....	27
EaSh-13, EaSh-41, EaSh-43, EaSh-71, EaSh-72, EaSh-73 Significance	29
Impact Assessment	30
Recommendations.....	31
References.....	33

LIST OF FIGURES

Figure 1. Location of Study Area	8
Figure 2. Development Plan Map: Lot 1, District Lot 208, Gowlland Harbour	10
Figure 3. EaSh-13 Subsurface Test Location and Site Map	16
Figure 4. EaSh-71 Subsurface Test Location and Site Map	17
Figure 5. EaSh-72 Subsurface Test Location and Site Map	18
Figure 6. EaSh-73 Site Map.....	19
Figure 7. EaSh-43 Site Map.....	20
Figure 8. EaSh-41 Site Map.....	21

LIST OF TABLES

Table 1. Subsurface Test Log	34
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Introduction

Rick Schellinck, property owner, contacted Baseline and requested an AIA at Lot 1, District Lot 208, Gowlland Harbour, Quadra Island, BC, PID 009-660-771 (Figure 1). The AIA was requested in response to plans for rezoning, subdividing and the construction of multiple homes and the installation of related infrastructure (roads, services, trails, etc.) and potential further land altering activities. Currently the subject property includes a gravel driveway, deactivated roads, machine trails, a rock quarry, wells, and areas of blown down timber and regeneration from previously harvested cutblocks.

It is anticipated that the subject property will be subdivided into multiple residential lots in phases, incorporating designated greenspace areas throughout the property that consist of parks, covenant areas and common areas. Prior to the AIA, the developer placed previously recorded sites EaSh-13, EaSh-41 and EaSh-43 within protected greenspace designations to prevent future impacts to the sites from development.

The subject property is located within the consultative boundaries of the K'ómoks, Klahoose, Xwemalkwu as well as Wei Wai Kai and Wei Wai Kum First Nations who are members of the Laich-Kwil-Tach Treaty Society.

Archaeological sites are defined as locations which contain physical evidence of past human activity such as artifacts or features. A list of expected site types that would likely be identified on the subject property is presented in the following section. Archaeological remains which predate, or are likely to predate, 1846 are automatically protected from any form of alteration, excavation, damage or desecration in British Columbia under the *Heritage Conservation Act (HCA)*. Other sites protected under the *HCA* include aboriginal rock art sites with historical or archaeological value, burial places and heritage wrecks.

In accordance with the *AIA Guidelines* (Apland and Kenny 1998) the primary purpose of the archaeological assessment was to: (1) identify and evaluate any archaeological resources located within the project area; (2) identify and evaluate all impacts by any proposed developments on identified archaeological resources; and (3) recommend viable management measures for managing potential adverse impacts to archaeological sites by any proposed development.

Fieldwork was conducted under Heritage Inspection Permit 2012-0328 on October 18 and 19, November 7, and December 13, 2012 and was undertaken by Stephanie Allester and Chelsea Gogal (Baseline) with assistance from Louis Wilson (Wei Wai Kai First Nation). The study identified the extent of archaeological resources present within the subject property and assessed the possible impacts to the archaeological deposits from future development.

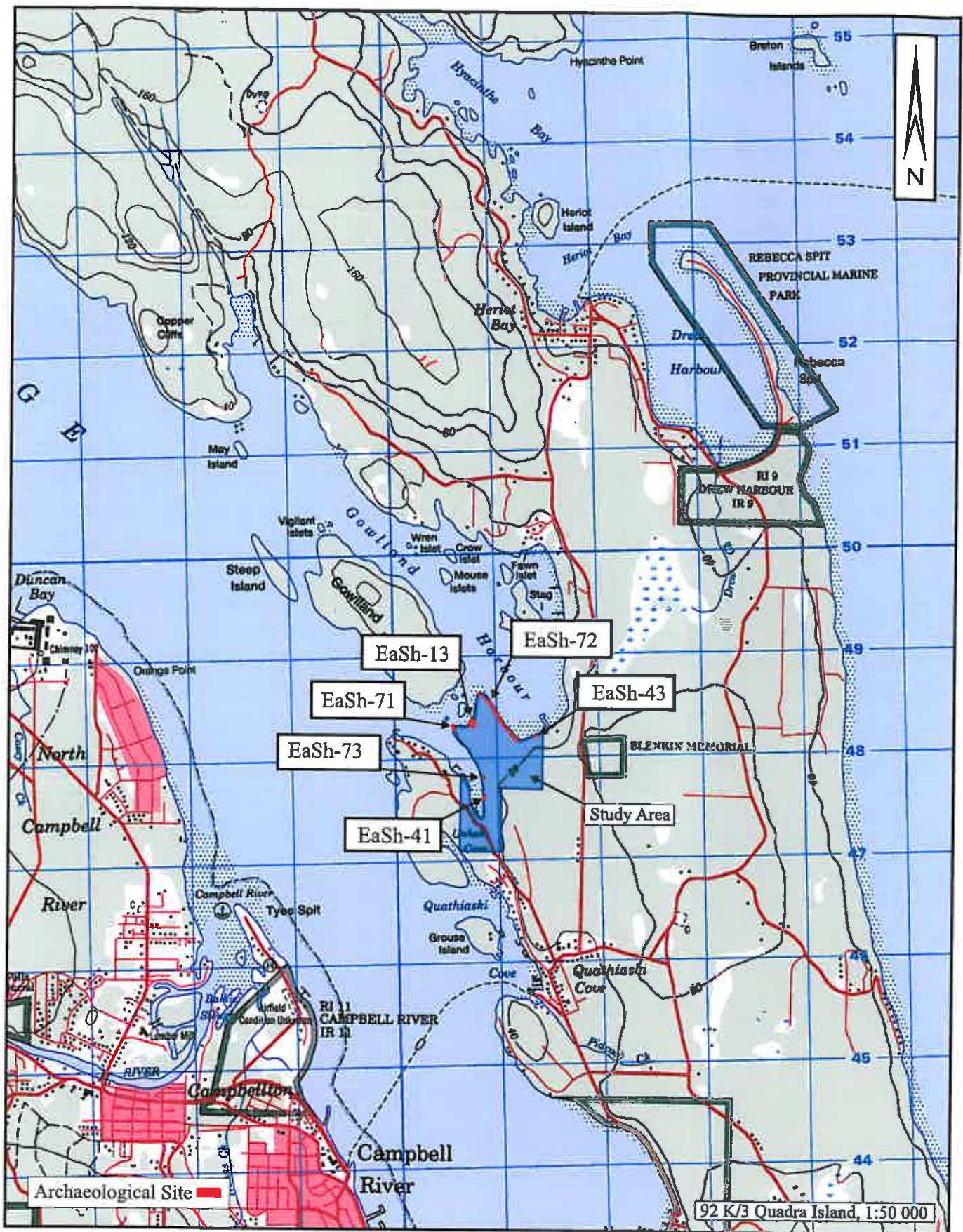


Figure 1. Study Area

Project Area

The subject property (64 ha), Lot 1, District Lot 208, Gowlland Harbour, Quadra Island, BC, (PID 009-660-771), is located on the west side of the south end of Quadra Island, along the shore of Gowlland Harbour (Figure 1). The study area is bounded to the east, south and west by private lots and Gowlland Harbour to the north. The majority of the property is located on a wide peninsula with Discovery Passage to the southwest and Gowlland Harbour to the northeast. The tip of the southwest corner of the property stretches to reach Unkak Cove. The property's elevation ranges from approximately 0m to 45m above sea level. The property is gradually sloping to either side of the peninsula before dropping several or more meters to the beach below. Rock outcroppings and sheer rock bluffs are intermittent along the shoreline. Most of the property is situated on flatter areas of grass and forests offset from the water. Much of this area has been cleared and landscaped. Large sections of the central portion of the property have been subject to timber harvesting activities. Subsequently, adjacent areas became wind thrown and were later cleared.

The subject property is situated within the Moist Maritime Subzone of the Coastal Douglas-Fir Zone (CDFmm) as defined by the Ministry of Forests Research Branch.



Photo 2: Previously harvested area in central portion of property.

Ethnographic Background of the Study Area

Prior to contact with Europeans, the Quadra Island locality was occupied by people of the K'ómoks, Klahoose, Xwemalhkwa as well as Wei Wai Kai and Wei Wai Kum First Nations. The Xwemalhkwa, Klahoose and K'ómoks people speak the Island and Mainland Comox languages that are part of the Northern Coast Salish linguistic family and culture. The Wei Wai Kai and Wei Wai Kum speak a language that is the southernmost member of the northern branch of the Wakashan linguistic family and Kwakwaka'wakw (previously known as Kwakiutl) culture. The following is a synopsis of Northern Coast Salish and Kwakwaka'wakw culture as discussed by Codere (1990) and Suttles (1990) who both provide further references.

People within the Northwest Coast cultural area practiced a semi-sedentary hunting-gathering-fishing economy incorporating specific logistical forays by task groups ranging over wide territorial areas in order to acquire specific resources. Subsistence was based on the hunting of terrestrial mammals, the gathering of various floral resources (e.g., berries, roots, and shoots), and most importantly, fishing (most importantly, salmon) according to a complex annual cycle. Winter villages consisted of semi-permanent and permanent structures constructed from large western redcedar logs and planks.

Like most coastal groups, material culture at the time of contact was dominated by the use of products derived from western red and yellow cedar including: canoes, rectangular plank houses, totem poles, ceremonial masks, complex latticework fish weirs and fish traps, mats, and clothing. The Northern Coast Salish and Kwakwaka'wakw cultures practiced a sophisticated woodworking and bark processing technology. Stone mauls, antler chisels, and ground stone adzes represented the traditional woodworking tool kit. Cedar bark was harvested by pulling long narrow strips of outer bark near the tree base, with the inner bark extracted from the outer bark for transportation back to the village. In addition to the concentration on material culture derived from western red and yellow cedar, a number of implements were fashioned from stone and bone. At the time of contact, polished and ground, bone, antler, and stone implements played a dominant role in material culture.

Similar to other Northwest Coast people, the Northern Coast Salish and Kwakwaka'wakw emphasized prestige and rank, participated in secret societies, and performed a variant of the potlatch. Exactly how far back into prehistory the ethnographic pattern described above extends is unclear. Fuller accounts of Northern Coast Salish and Kwakwaka'wakw cultural practices, ethnography, language, material culture, mythology, and subsistence practices can be found in a great number of primary and secondary resources, including but not limited to: Barnett (1938, 1939, 1955), Curtis (1915), as well as Kennedy and Bouchard (1990).

Archaeological Background of the Study Area

Prior to the AIA, a search of the Remote Access to Archaeological Data website indicated that previously recorded archaeological sites EaSh-13 (shell midden), EaSh-41 (shell midden) and EaSh-43 (shell midden and human burials) are recorded on the subject property. A site specific AOA of the subject property, by Baseline, in April 2009 confirmed the presence of the previously recorded midden sites. The AOA revealed the sites were subject to cursory recordings in the 1960s and 1970s. At the time of recording, the exact dimensions of EaSh-43 and the site conditions of all three sites were unknown. Until the current AIA, no further archaeological work has been conducted on the subject property.



Photo 3: Old road at northern tip of property near EaSh-72.

Expected Site Types

An archaeological site is a location that contains physical evidence of past human activity. In British Columbia, archaeological sites are attributable to pre-Contact settlement and land use by First Nations people. Locations with evidence of Euro-Canadian or Asian-Canadian land use pre-dating 1940 are considered to be historic archaeological sites. Archaeological sites in British Columbia are registered with the Archaeology Branch, the provincial authority responsible for their management in accordance with the *Heritage Conservation Act*.

The most typical sites along the shoreline of Vancouver Island is middens, rock art sites, canoe runs, fish traps, fish weirs, wetsites, and clam gardens.

- **Middens** usually represent the physical remnants of ancient villages or seasonal camps. In coastal environments middens consist primarily of shellfish remains, black anthropogenic soils, fire-altered rocks, ash and charcoal, faunal remains (fish, bird, and mammal bones), artifacts, and cultural (that is, archaeological) features such as hearths, storage pits, and post-moulds.
- **Rock Art Sites** are locations of non-portable Aboriginal art; either painted (pictographs) or pecked into stone (petroglyphs). Rock art sites are typically found on bedrock outcrops or large boulders, usually along steep shorelines or at locations of strong spiritual significance to First Nations people, as well as important boundary markers.
- **Canoe Runs** are features constructed for beaching canoes on rocky shores, and they typically appear as elongated sections of foreshore from which large cobbles and boulders have been removed – often stacked in low walls to each side.
- **Fish Traps** are low, walled enclosures built of dry-laid boulders and cobbles in foreshore environments; they function on their own by trapping inshore-foraging fish on an outgoing tide, or in combination with fish weirs.
- **Fish Weirs** are wooden structures built to capture fish in foreshore environments. They may have been used in combination with stone fish traps, or on their own, particularly in deeper water.
- **Wetsites** represent a rare combination of environmental factors that produce a special type of waterlogged archaeological deposit. These sites only occur in permanently-saturated, anaerobic settings.
- **Clam Gardens** are rock structures present on beaches usually seen on the lowest tides. These structures helped to significantly increase the density of clam production. Usually situated on beaches with low wave and tidal action.

Archaeological sites are the result of certain discrete human activities occurring at a specific location on the physical landscape. Evidence for more than one type of cultural activity can take place at a single location. In mapping and recording archaeological sites, archaeologists use site boundaries to indicate the known extent of physical remains at a particular location. These boundaries are necessary to delineate the physical remains of archaeological sites to ensure their protection from proposed development activities. While boundaries are placed around archaeological sites for management purposes, it should be recognized that traditional Aboriginal use of the landscape associated with these sites may extend beyond archaeological site boundaries. Traditional use activities that leave no physical archaeological evidence, such as berry gathering, medicinal plant collecting, and spiritual practices, are more appropriately addressed through a Traditional Use Study and are not considered in this report.



Photo 4: EaSh-43 Shell midden along beach within Park designation.



Photo 5: Machine trail through EaSh-41 within Park designation.

Methodology

The primary focus of the AIA involved determining the presence or absence of archaeological material on the subject property as well as identifying and recording this material where present. Additionally, in the areas where archaeological material was identified, the condition of the site and condition of the material (i.e. whether deposits were intact or disturbed) was also determined in areas of potential overlap with the proposed development. Impacts to sites such as subsurface testing were limited or avoided at sites located well within greenspace designations, which will not be impacted by the proposed development. No evaluative units were conducted due to the developer's intentions to avoid impacting archaeological sites.

The survey included extensive pedestrian traverses of the subject property during which time the ground was visually inspected for cultural objects and features, such as, but not limited to: artifacts, features, shellfish remains, butchered animal bones, charcoal, fire cracked rock, and other indications of past evidence of human activity. Other areas searched for included those which had potential to contain subsurface cultural materials, such as well drained micro-topographical land forms. When appropriate micro-topographical features were observed, subsurface tests were conducted systematically on the observed landforms. Surface as well as natural (such as root wads of windfallen trees) and man-made (such as trails and the cut banks of built roads) subsurface exposures were examined for archaeological potential and resources. Suitable trees were examined for cultural modifications.

Shovel and auger tests were employed during the subsurface testing (Figures 3, 4 and 5) to sterile levels whenever possible and attempted to assess the condition of the shell midden deposits. The shovel tests measured 30cm X 30cm. Back-dirt from subsurface tests was screened through 6mm steel mesh. Subsurface tests were sequentially numbered and mapped (Figure 3, 4 and 5) with subsurface matrices recorded in field notes and appended to this report (Table 1). Shovel tests were back-filled.



Photo 6: Auger testing at EaSh-71.

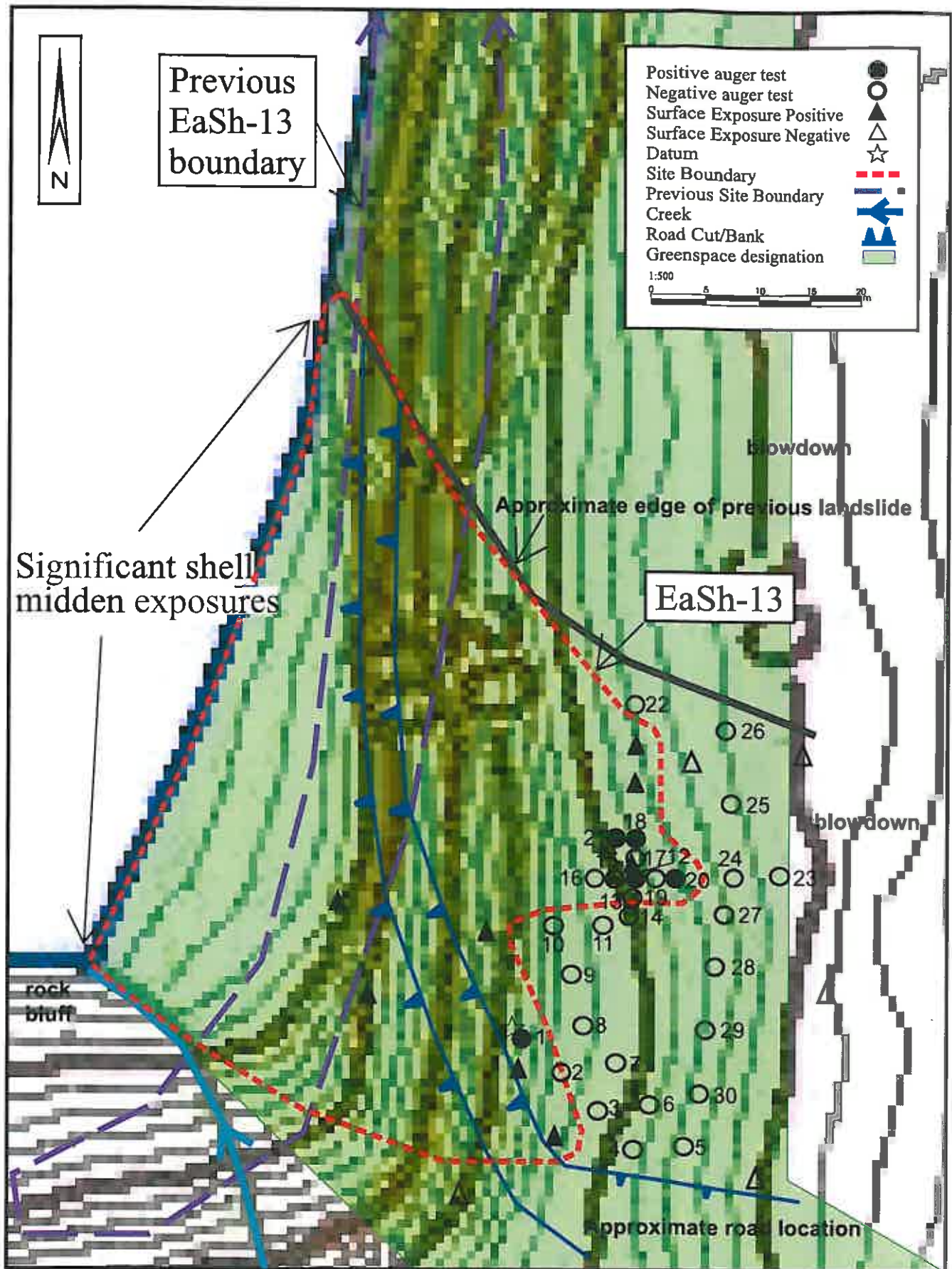


Figure 3. EaSh-13 Subsurface Testing and Site Map

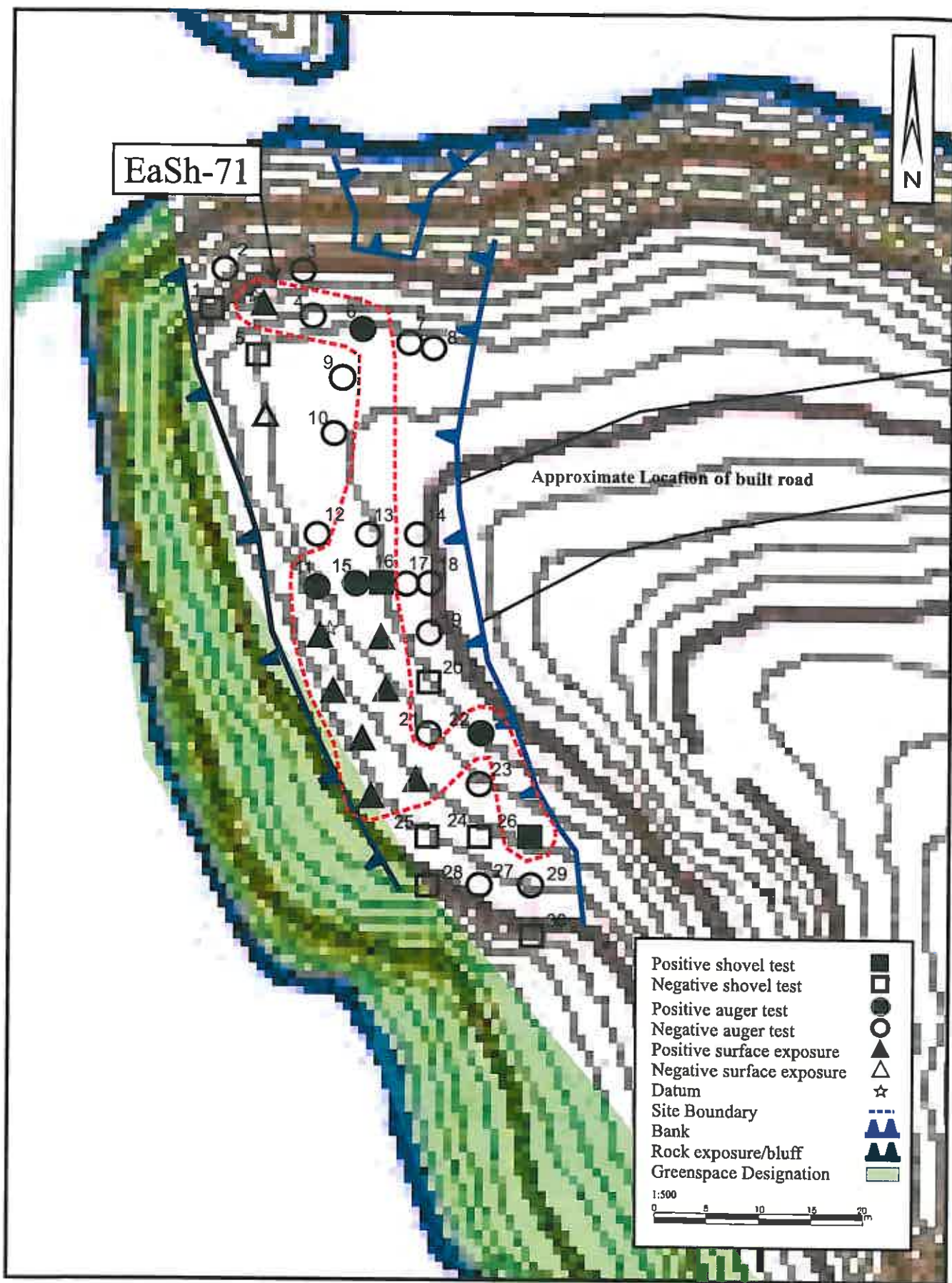


Figure 4. EaSh-71 Subsurface Testing and Site Map

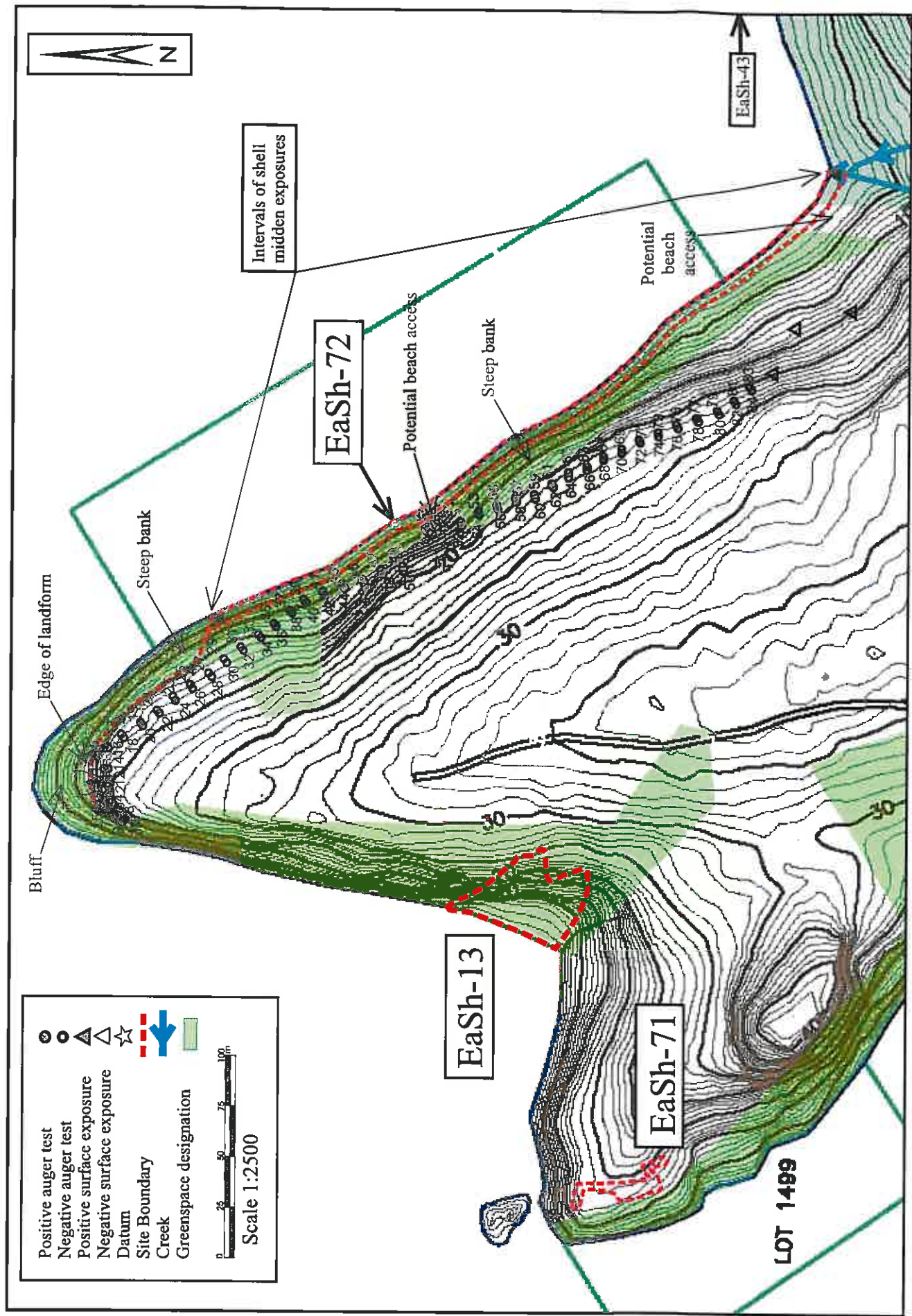


Figure 5. EaSh-72 Subsurface testing and Site Map

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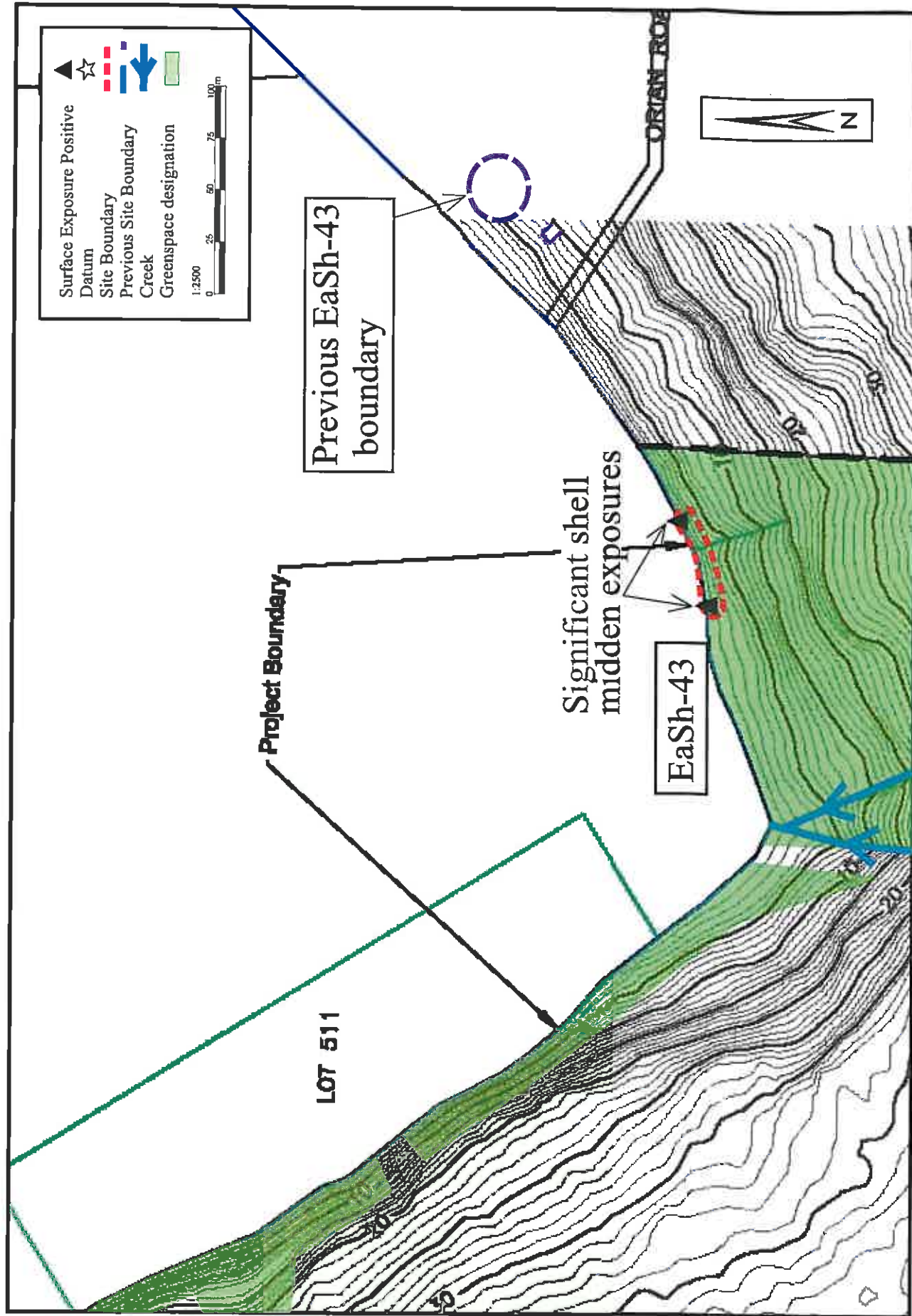


Figure 6. EaSh-43 Site Map
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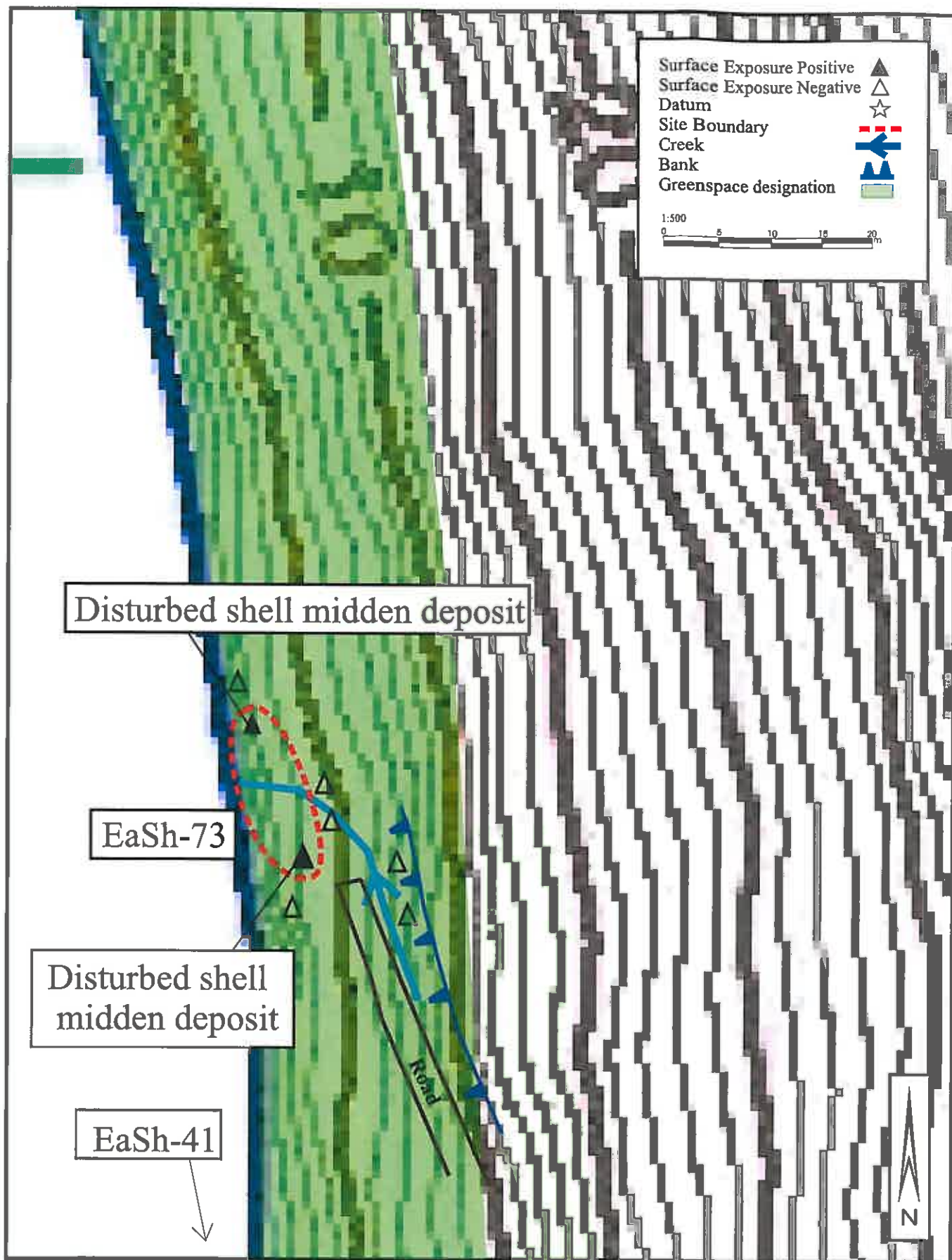


Figure 7. EaSh-73 Site Map

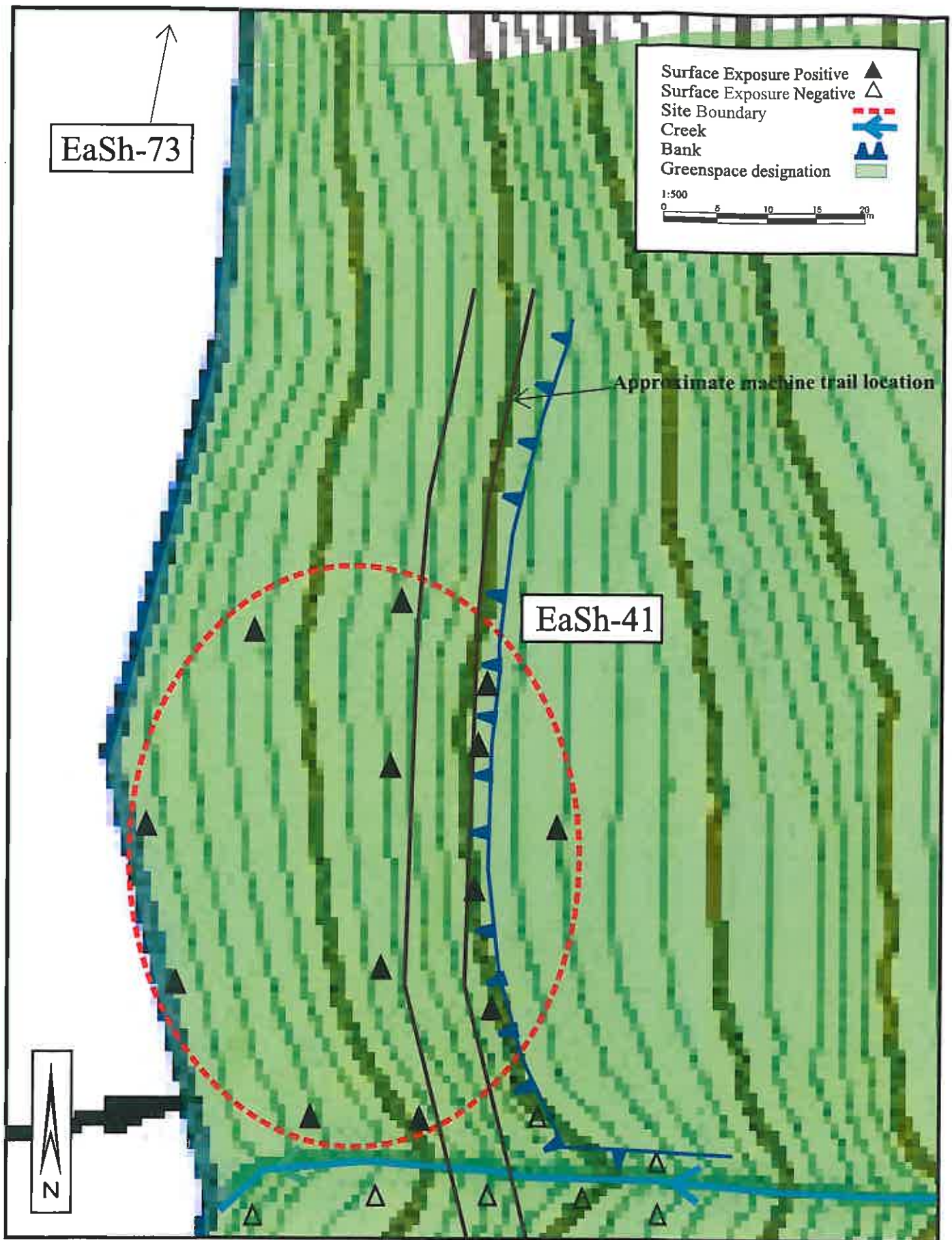


Figure 8. EaSh-41 Site Map

Results

Within the boundaries of the subject property one hundred and forty-four subsurface tests were conducted. These consisted of nine shovel tests (ST) and one hundred and thirty-five auger tests (AT). While the majority of tests proved negative for cultural material, disturbed archaeological deposits were encountered in ATs 1, 12, 18, 20, 21 (EaSh-13) and ranged from 0cm to 25cm in depth below surface (DBS). Intact deposits were encountered in STs 16, 26 and AT 6, 11, 15, 22 (EaSh-71) and ranged from 0cm to 51cm DBS (Table 1). The auger and shovel tests (measuring 30cm X 30cm) were conducted to sterile deposits. These tests attempted to determine the vertical and horizontal extent of deposits as well as site condition.

EaSh-13:

Site EaSh-13 was revisited and thirty subsurface tests were conducted. Testing resulted in seven positive and twenty-three negative ATs. ATs 1, 12, 18, 20, 21 illustrated disturbed archaeological deposits with a maximum lens of 12cm of light concentrations of cultural material. The deposits consisted of dark brown sandy soil with clamshell fragments. No FCR, faunal, artifacts, features, or stratigraphy was present in the tests. The disturbance was likely a result of prior development of the adjacent roadway, as well as clean up of the area subsequent to a windstorm leaving abundant blow down. Multiple positive exposures, which appeared intact, were located in cut banks immediately above and below (east and west, respectively) the built road which bisects the site north to south. Extensive intact shell midden deposits consisting of dark brown and black soil with clamshell concentrations and fire-cracked rock (FCR) could be seen along the shoreline at the sites recorded location. The northern extent of the site has appeared to have been swept away during a landslide. The site's revised dimensions are 85m by 60m (Figure 3).

EaSh-71:

Within the vicinity of site EaSh-71, thirty subsurface tests were conducted. Intact midden material was identified in six of the subsurface tests and in numerous exposures. Intact deposits were present in ATs 6, 11, 15, 22 and STs 16 and 26 and ranged from 10cm (AT 6) to 35 cm (ST 16) and 51 cm (ST 26) DBS. The intact deposits consisted of dark black and brown soil with light to dense concentrations of clamshell fragments, FCR, charcoal, and stratigraphy. As a result of the testing, it was determined that the site was confined to a flat bench-like outcrop of land situated beneath the end of a built road overlooking a rocky outcropping that plunges into Discovery Passage below. The site measures 62.5m by 17.5m (Figure 4).

EaSh-72:

Immediately south of site EaSh-72, eighty-four ATs were conducted. All eighty-four subsurface tests were negative for archaeological material. Multiple negative exposures were also observed. Generally, the tests yielded medium orangey-brown sandy soil with roots and pebbles underlain by grey clay and/or bedrock. The testing was conducted on

top of the embankment adjacent to identified shell midden exposures which followed a long stretch of shoreline. Seemingly intact shell midden exposures were noted consistently at short but varying intervals along the beach (390m long x 10m wide), from the small unnamed creek outflow that drains into Gowlland Harbour to the west side of the point at Gowlland Harbour. The exposures consisted of dark brown and black soil with moderate to dense concentrations of clamshell and FCR. The site is restricted predominantly to the beach with the exception of the extremely marginal deposits situated at the most northern tip of the point approximately 20m above sea level. Here, the deposits were identified immediately below the surface within the steep bank and consisted of a thin lens. The deposits were observed in exposures intermittently in the bank for approximately 88m, ranging from 2 to 4cm thick, and less than 20cm wide. Subsurface tests were placed along the edge of the bank. As a result of this AIA, site EaSh-72 is determined to be restricted to two well defined areas. These areas include the relatively thin landform that follows the beach (500m by 10m) and the very northern extent of the tip of the point. The site's marginal existence around the perimeter of the point is likely the result of shoreline erosion or may be partially a result of previous land clearing activities of past residents or developers. A previously utilized dirt road is evident to the edge of the point. The entire site is approximately 500m in length (Figure 5).

EaSh-41:

No subsurface testing was conducted near site EaSh-41 due to its location well within a greenspace designation. EaSh-41 was revisited at its recorded site location on the shoreline of the small bay which lies on the west side of the property boundary. Multiple positive exposures were identified. The shell midden deposits consisted of black sandy soil with clamshell fragments and FCR. Deposits could be seen along the beach, within the banks of an old machine trail, and the northern bank of the small unnamed creek. The site is approximately 60m in length by 45m wide (Figure 8).

EaSh-43:

No subsurface testing was conducted near site EaSh-43 due to its location well within a greenspace designation. EaSh-43 was revisited and determined to have been previously mapped in another location further east on the shoreline. The site is now accurately recorded at a small creek mouth at the southern aspect of Gowlland Harbour. Several shell midden exposures were observed on the shoreline measuring approximately 40m in length and 10m wide. The shell midden deposits consisted of black sandy soil with clamshell fragments and FCR (Figure 6).

EaSh-73:

No subsurface testing was conducted near site EaSh-73 due to its location well within a greenspace designation. EaSh-73 is a newly recorded site on the shoreline of the small bay which lies on the west side of the property boundary and north of EaSh-41. The site consists of two mounds of deposits that flank a small unnamed creek, located at the end of a built road. The banks of the creek have been reinforced and a small terracing system installed. The shell midden deposits appear to be either a secondary deposit or intensely

disturbed. The deposits consist of dark brown and black soil with light to moderate concentrations of clamshells which have been mixed with historical garbage and logging debris. The site measures 17m by 7m (Figure 7).

The southwest quarter of the property consists of predominantly undulating moss-covered ground with numerous rocky outcrops and a rock quarry. The forest cover includes fir and hemlock. The shoreline areas consist of rock bluffs and steep banks with limited beach access. The central, north and east quadrants of the property contain primarily slash areas from previous harvesting activities. Several old growth trees remain throughout the area consisting of cedar, fir as well as second growth hemlock and alder. The northeast corner of the property designated as park is forested with old growth cedar, fir, spruce, hemlock and balsam.

No human or faunal remains, artifacts, or features were identified on the subject property.

Figure 2 does not include traverses of the crew because coverage was extensive throughout the entire subject property. Natural soil exposures in shoreline banks, creeks, road cut banks, and tree root wads throughout much of the property were prevalent, making for ample subsurface material observations. No subsurface testing was conducted away from shoreline adjacent areas since these portions of the property exhibited low potential for sub-surface archaeological sites. The potential for CMTs within the development area is low due to the complete coverage and minimal old growth cedar present. The inter-tidal zone of the property was examined and no clam gardens, fish traps, or fish weirs were visible. Clam beds are recorded in the vicinity of the property near EaSh-13, however, tides were moderate to high at the time of survey.



Photo 7: EaSh-71 shovel test 16.



Photo 8: EaSh-71 shovel test 26.



Photo 9: View EaSh-71 along bench.



Photo 10: Positive exposure at EaSh-71.



Photo 11: Auger test 1 near EaSh-72



Photo 12: Bank above EaSh-72.



Photo 13: Significant intact deposits along beach within EaSh-13.



Photo 14: Exposure in road bank near auger test 1 within EaSh-13.



Photo 15: Terraced creek mouth flanked with disturbed midden in EaSh-73.



Photo 16: Disturbed deposits in mound along beach within EaSh-73.

Archaeological Site Significance

As per the permit application, the archaeological site was evaluated according to the terms outlined in the *British Columbia Archaeological Impact Assessment Guidelines* (Apland and Kenny 1998). In assessing significance, several factors are considered including the scientific significance, in terms of the sites ability to enhance the understanding of culture history, process, and other aspects of prehistory. Other factors include the public significance (interpretative, educational, or recreational values); ethnic significance (traditional, social or religious importance to a particular group); and economic significance (economic values which can be directly and indirectly derived from the site) (Apland and Kenny 1998:54).

As a part of this study, archaeological sites were assessed for scientific significance according to the variables listed below, as outlined in the *British Columbia Archaeological Impact Assessment Guidelines*, Appendix D (2004).

Scientific Significance

(a) Does the site contain evidence which may substantively enhance understanding of culture history, culture process, and other aspects of local and regional prehistory?

- internal stratification and depth
- chronologically sensitive cultural items
- materials for absolute dating
- association with ancient landforms
- quantity and variety of tool type
- distinct intra-site activity areas
- tool types indicative of specific socio-economic or religious activity
- cultural features such as burials, dwellings, hearths, etc.
- diagnostic faunal and floral remains
- exotic cultural items and materials
- uniqueness or representativeness of the site
- integrity of the site.

(b) Does the site contain evidence which may be used for experimentation aimed at improving archaeological methods and techniques?

- monitoring impacts from artificial or natural agents
- site preservation or conservation experiments
- data recovery experiments
- sampling experiments
- intra-site spatial analysis.

(c) Does the site contain evidence which can make important contributions to paleoenvironmental studies?

- topographical, geomorphological context

- depositional character
- diagnostic faunal, floral data.

(d) Does the site contain evidence which can contribute to other scientific disciplines such as hydrology, geomorphology, pedology, meteorology, zoology, botany, forensic medicine, and environmental hazards research, or to industry including forestry and commercial fisheries?

Public Significance

- integrity of the site
- technical and economic feasibility of restoration and development for public use
- visibility of cultural features and their ability to be easily interpreted
- accessibility to the public
- opportunities for protection against vandalism
- representativeness and uniqueness of the site
- aesthetics of the local setting
- proximity to established recreational areas
- present and potential land use
- land ownership and administration
- legal and jurisdictional status
- local community attitude toward development.

(e) Does the site receive visitation or use by tourists, local residents or school groups?

Ethnic Significance

- ethnographic or ethnohistoric reference
- documented local community recognition or concern for the site.

Economic Significance

- visitor travel costs
- visitor willingness to pay.

EaSh-13:

Archaeological site EaSh-13 is assessed as having a high scientific significance. This assessment is based on the significant artifacts that were recovered previous to this survey, the size of the site, and the untested nature of the site with the potential for significant archaeological resources. Although testing revealed at least a portion of the site is disturbed, intact deposits were observed in numerous exposures. Furthermore, there are substantial visibly intact deposits present in exposures along the shoreline for approximately two-hundred meters.

EaSh-71:

Archaeological site EaSh-71 is assessed as having a high scientific significance. This assessment is based on the intact deposits that were encountered, during this AIA, which contained moderate amounts of FCR, carbon for dating, and stratigraphy. Several intact exposures were also visible. The site has the potential for significant archaeological resources based on the size and intact condition of the site.

EaSh-72:

Archaeological site EaSh-72 is assessed as having a high scientific significance. This assessment is based on site's potential for significant archaeological resources based on the size and intact condition of the site. During this AIA, intact deposits were observed within shoreline exposures, which included a moderate amount of FCR and stratigraphy. Furthermore, there are still visibly significant intact deposits present in exposures along the shoreline for hundreds of meters.

EaSh-43:

Archaeological site EaSh-43 is assessed as having a high scientific significance. This assessment is based on the reported recovery of significant artifacts and three human burials uncovered and reburied within the site in the 1920's. During this AIA, intact deposits were observed including a moderate amount of FCR and stratigraphy within shoreline exposures.

EaSh-41:

Archaeological site EaSh-41 is assessed as having a high scientific significance. This assessment is based on the site's potential for significant archaeological resources based on the size and intact condition of the site. The site is determined to be intact with the exception of a machine trail that bisects it. During this AIA, intact deposits were observed including a moderate amount of FCR, and stratigraphy within shoreline exposures as well as substantial deposits continuing significantly further inland.

EaSh-73:

Archaeological site EaSh-73 is assessed as having a low scientific significance. This assessment is based on the small site size and high level of disturbance. During this AIA, only disturbed deposits were observed and the mounds of deposits are possibly secondary deposits.

The public and economic significance of all of the sites (EaSh-13, EaSh-41, EaSh-43, EaSh-71, EaSh-72, and EaSh-73) is considered low as the sites are located on private property and not accessible to the public.

Impact Assessment

As the final development plans for the subject property have not been finalized specific impacts to archaeological sites EaSh-71, and EaSh-72 are unknown. As the development is currently proposed, subdividing of the lots will occur in a number of phases creating potential conflicts with two small portions of EaSh-72 and the majority of EaSh-71. Three or four housing envelopes would impact intact deposits within site EaSh-71 in its location on the western extent of the point at Gowlland Harbour.

EaSh-72 would be located mostly outside and below the developments, however, pedestrian walking trails or roads which would provide access to the beach could be in direct conflict with two portions of the site that are located on the east side of the point at Gowlland Harbour. It is not anticipated that vehicle access will be required in both locations, however if road building was required, it could potentially impact small portions of the intact site. If one or two pedestrian walking trails are implemented the impacts to the site would be minimal. This may entail the carving and grading of a walking path in the form of several switchbacks down the steep bank to approach the flat bench below at EaSh-72 and the shoreline. Here, landscaping such as leveling, beautifying or the capping of the site may result in minor impacts to the site, depending on the location and intensity of landscaping required.

There is no direct conflict with sites EaSh-13, EaSh-43, EaSh-41, and EaSh-73 which are all located well outside of developments areas within green space designations.

Recommendations

Under the current development plans, there are no archaeological concerns and no further work recommended for archaeological sites EaSh-13, EaSh-43, EaSh-41, and EaSh-73 due to their locations within greenspace designations. If future development plans are amended to include the sites, a qualified archaeologist should be consulted to determine the appropriate work to be conducted.

This study identifies that there are archaeological concerns in regard to the proposed developments at Lot 1, District Lot 208, Sayward District at Gowlland Harbour. To address these conflicts the following options are provided for managing these cultural resources:

EaSh-71 and EaSh-72:

Option 1: Avoidance of Impacts to Archaeological Sites EaSh-71 and EaSh-72.

- As per the *British Columbia Archaeological Impact Assessment Guidelines* (Apland and Kenny 1998:15), the BC Archaeology Branch's preferred option would be to avoid further impacts to the archaeological sites as it ensures complete *in situ* protection of the resource for future investigation or use.
- If no further disturbances to archaeological sites **EaSh-71 and EaSh-72** are to occur, no further archaeological work is recommended.

OR

EaSh-71:

Option 2: Alterations to Archaeological Site EaSh-71 as identified in the Impact Assessment Section of this report:

- Depending on the volume of archaeological material being impacted, additional mitigation of the site may be required through systematic data recovery (SDR) under a Section 14 Heritage Investigation Permit prior to applying for a Section 12 Site Alteration Permit, issued by BC Archaeology Branch, under the authority of the *Heritage Conservation Act*.
- The developer will require a Section 12 Site Alteration Permit for development activities within the boundaries of the recorded archaeological site. These will require monitoring by a qualified archaeologist.

EaSh-72:

Option 2: Alterations to Archaeological Site EaSh-72 as identified in the Impact Assessment Section of this report:

- If beach access roads in one or more locations are to be developed through untested site areas then a qualified archaeologist should be consulted to determine the appropriate level of additional work to be conducted, such as an AIA under Section 14.
- If the development of one or more pedestrian beach access walking trails are to be developed through untested site areas, the developer will require a Section 12 Site Alteration Permit for development activities within the boundaries of the recorded archaeological site. Depending on the level of impact to the site this may require monitoring by a qualified archaeologist.

It is also recommended that developers inform their personnel and all contractors that:

- Archaeological remains are protected by the *Heritage Conservation Act* (1996) and may not be altered, damaged, moved, excavated in, or desecrated in any way without a permit issued under Section 12 or 14 of the *Heritage Conservation Act*.

Developers and operators should be aware of the potential of undiscovered archaeological remains in any surveyed or unsurveyed areas which are protected under the *Heritage Conservation Act*. If previously unrecorded archaeological remains are identified, all development activities in the vicinity of archaeological remains must be halted as not to threaten these remains and to immediately notify the BC Archaeology Branch (Ministry of Forests, Lands, and Natural Resource Operations).

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Table 1. Sites EaSh-13, EaSh-71, EaSh-72 Subsurface Test Log.

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
Site EaSh-71				
ST 1	0-10	N	Duff, topsoil	5m at 264° from positive exposure 1 (datum) at 10 +/- 4m 0340604 5548282
	10+	N	Rock	
AT 2	0-5	N	Duff, topsoil	5m at 310° from datum
	5+	N	Rock	
AT 3	0-15	N	Duff, topsoil	5m at 50° from datum
	15+	N	Rock	
AT 4	0-15	N	Duff	5m at 104° from datum
	15+	N	Rock	
ST 5	0-10	N	Duff	5m at 185° from datum
	10-20	N	Red-brown sandy soil with pebbles and rocks	
	20	N	Rock	
AT 6	0-5	N	Duff	5m at 104° from AT 4
	5-10	Y	clamshell and dark black organic soil, grey sandy soil	Intact
	10 - 30	N	Clay	
	30+	N	Clay	
AT 7	0-15	N	Duff	5m at 104° from AT 6
	15+	N	Rock	
AT 8	0-10	N	Duff	2m at 104° from AT 7
	10-12	N	Brown sandy soil with pebbles	
	12+	N	Rock	
AT 9	0-10	N	Duff, roots	5m at 194° from AT 6
	10-45	N	Light brown sandy soil with pebbles	
	45+	N	Rock	
AT 10	0-5	N	Duff	5m at 188° from AT 9
	5-45	N	Medium brown sandy soil with pebbles	
	45+	N	Rock	
AT 11	0-5	N	Duff	5m at 360° from datum (datum south on map at 10 +/- 0340615 5548253)
	5-25	Y	Brown sandy soil with thin lens of clamshell, pebbles and small roots	Intact
	25+	N	Rock	
AT 12	0-10	N	Duff	5m at 360° from AT 11

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
	10-30 30+	N	Dark brown sandy soil	
		N	Rock	
AT 13	0-15 15-45 45+	N N N	Duff Rock	5m at 90° from AT 12
AT 14	0-10 10-30 30+	N N N	Duff Dark brown sandy soil Rock	5m at 90° from AT 13
AT 15	0-10 10-25 25- 41 41+	N Y N N	Duff Black soil with shell Brown soil with pebbles Clay-like soil with pebbles	5m at 190° from AT 13 Intact
ST 16	0-10 10 - 40	Y Y	Duff, clamshell and dark black organic soil Dense clamshell, FCR, white-grey soil mixed with black soil	2m at 90° from AT 15 Intact
	40-51 51-57 57+	Y N N	Clamshell and dark black organic soil, littlenecks and butter Sandy soil with rocks Rock	Intact
AT 17	0-5 5-57 57+	N N N	Duff Dark brown sandy soil, rotten wood Rock	5m 270° of AT 15
AT 18	0-4 4+	N N	Duff Rock	1.5m 270° of AT 17
AT 19	0-5 5-60 60-70 70+	N N N N	Duff Dark brown sandy soil Dry, light brown, fine-grain silty sand Dry, light brown, fine-grain silty sand	5m 180° of AT 18
ST 20	0-10 10-60 60-70 70+	N N N N	Duff, cobble Dry, light brown, fine-grain silty sand Dry, light brown, fine-grain silty sand with rocks Dry, light brown, fine-grain silty sand with rocks	5m 180° of AT 19
AT 21	0-10 10-60 60-65 65+	N N N N	Duff Dry, light brown, fine-grain silty sand Dry, light brown, fine-grain silty sand with rocks Dry, light brown, fine-grain silty sand with rocks	5m 180° of ST 20
AT 22	0-5	N	Duff	5m 90° of AT 21

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
	5-50	Y	Dark brown soil with pebbles, clamshell fragments, small roots	Intact
	50+	N	Light brown sandy soil	
AT 23	0-10	N	Duff	5m 180° of AT 22
	10-60	N	Dry, light brown, fine-grain silty sand	
	60-65	N	Dry, light brown, fine-grain silty sand with rocks	
	65+	N	Dry, light brown, fine-grain silty sand with rocks	
ST 24	0-10	N	Duff	5m 180° of AT 23
	10-45	N	Dark brown soil, with pebbles and rocks	
	45- 50	N	Dry, light brown, fine-grain silty sand with rocks	
	50+	N	Dry, light brown, fine-grain silty sand with rocks	
ST 25	0-12	N	Duff	5m 270° of ST 24
	12 - 57	N	Dry, light brown, fine-grain silty sand with rocks, small roots	
	57+	N	Dry, light brown, fine-grain silty sand with rocks	
ST 26	0-5	N	Duff	5m 90° of ST 24
	5-35	Y	Dark brown soil with pebbles, clamshell fragments, small roots, charcoal	Intact
	35+	N	Large root	
AT 27	0-10	N	Duff	5m 180° of ST 25
	10-45	N	Dry, light brown, fine-grain silty sand with rocks, small roots	
	45+	N	Rock	
ST 28	0-10	N	Duff	5m 270° of ST 27
	10-48	N	Dry, light brown, fine-grain silty sand with rocks, small roots	
	48+	N	Rock	
AT 29	0-10	N	Duff	5m 90° of ST 28
	10-25	N	Dry, light brown, fine-grain silty sand with rocks, small roots	
	25+	N	Rock	
ST 30	0-10	N	Duff	5m 180° of ST 29
	10-35	N	Dry, light brown, fine-grain silty sand with rocks, small roots	
	35+	N	Rock	
Site EaSh-13				
AT 1	0-15	N	Topsoil	+/- 4m 10 U 0340786 5548284
	15-25	Y	Clamshell and dark black organic soil	Possibly Intact
	25-62	N	Sandy soil with pebbles	

Baseline Archaeological Services Ltd.
Permit Report 2012-0328

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
	62-70	N	Bright orange-brown soil	
	70+	N	Bright orange-brown sand	
AT 2	0-15	N	Duff, topsoil, rotten wood	5m at 130° from AT 1
	15-20	N	Black topsoil	
	20-70	N	Brown sandy soil with pebbles	
	70+	N	Brown sandy soil with pebbles	
AT 3	0-15	N	Duff, rotten wood	5m at 59° from exposure, 5m SE from AT 2
	15-20	N	Black soil	
	20-75	N	Brown sandy soil with pebbles	
	75+	N	Brown sandy soil with pebbles	
AT 4	0-7	N	Duff, topsoil	5m at 140° from AT 3
	7-33	N	Black topsoil with pebbles	
	33+	N	Rock	
AT 5	0-22	N	Duff, Black soil	5m at 84° from AT 4
	22+	N	Rock	
AT 6	0-25	N	Duff	5m at 322° from AT 5
	25-62	N	Bright orange-brown sandy-soil	
	62+	N	Rock	
AT 7	0-25	N	Duff	5m at 322° from AT 6 +/- 3m 10 U 0340785 5548281
	25-70	N	Bright orange-brown sandy-soil	
	70+	N	Light brown sand	
AT 8	0-11	N	Duff	5m at 322° from AT 7
	11-84	N	Bright orange-brown sandy-soil	
	84+	N	Bright orange-brown sandy-soil	
AT 9	0-30	N	Duff	5m at 346° from AT 8
	30-70	N	Light brown sandy soil	
	70+	N	Light brown sandy soil	
AT 10	0-10	N	Duff	5m at 340° from AT 9
	10-30	N	Medium-dark brown sandy soil	
	30-70	N	Light brown sandy soil	
	70+	N		
AT 11	0-5	N	Duff	5m at 90° from AT 10
	5-30	N	Dark brown/black top soil	
	30+	N	Rock	
AT 12	0-5	Y	Black soil with clamshell. Possible secondary deposit	Next to exposure at +/- 3m 10 U 0340786 5548303. Disturbed
	5-12	N	Dark brown/black soil	

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
	12-70	N	Bright orange-brown sandy soil	
	70+	N	Bright orange-brown sandy soil	
AT 13	0-7	N	Duff	2m at 190° from AT 12
	7-25	N	Brown soil	
	25-57	N	Reddish brown sandy soil	
	57+	N	Rock	
AT 14	0-5	N	Duff	2m at 190° from AT 13
	5-16	N	Dark brown/black soil	
	16-50	N	Reddish brown sandy soil	
	50+	N	Reddish brown sandy soil	
AT 15	0-7	N	Duff	2m at 270° from AT 12
	7-13	N	Dark brown/black soil	
	13-70	N	Reddish brown sandy soil	
	70+	N	Reddish brown sandy soil	
AT 16	0-8	N	Duff	2m at 270° from AT 15
	8-14	N	Dark brown/black soil	
	44-47	N	Reddish brown sandy soil	
	47+	N	Reddish brown sandy soil	
AT 17	0-4	N	Duff, roots	2m at 0° from AT 12
	4-32	N	Dark brown sandy soil with pebbles	
	32+	N	Rock	
AT 18	0-10	Y	Dark brown/black soil with shell (thin layer)	2m at 0° from AT 17. Disturbed
	10-31	N	Dark brown sandy soil with pebbles	
	31+	N	Rock	
AT 19	0-5	N	Leaves, needles, dark brown soil	2m at 90° from AT 12
	5-30	N	Dark brown sandy soil	
	30-48	N	Orange-brown sandy soil	
	48-51	N	Grey-brown sand with pebbles	
	51+	N	Rock	
AT 20	0-12	N	Duff	2m at 90° from AT 19
	12-24	Y	Clamshell and dark black organic soil	Disturbed
	24-70	N	Orange-brown sandy soil	
	70+	N		
AT 21	0-5	N	Duff	2m at 270° from AT 18
	5-15	Y	Clamshell and dark black organic soil, lens of dense clam shell concentration	Possibly disturbed
	15-40	N	Brown sandy soil	

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
	40+	N	Rock	
AT 22	0-7 7-65 65+	N N N	Duff Dark brown/black sandy soil Dark brown/black sandy soil	13m at 0° from AT 18
AT 23	0-10 10-14 14-44 44+	N N N N	Duff Dark brown/black sandy soil Orange-brown sandy soil Rock	5m at 90° from AT 20
AT 24	0-3 3-26 26-62 62+	N N N N	Duff Dark brown/black sandy soil with pebbles Medium brown sandy soil with pebbles Medium brown sandy soil with pebbles	5m at 270° from AT 23
AT 25	0-7 7-32 32-70 70+	N N N N	Duff Dark brown sandy soil Light grey/brown sandy soil Light grey/brown sandy soil	5m at 0° from AT 24
AT 26	0-5 5-70 70+	N N N	Duff Dark brown sandy soil Dark brown sandy soil	5m at 0° from AT 25
AT 27	0-6 6-70 70+	N N N	Duff Dark brown sandy soil Dark brown sandy soil	5m at 190° from AT 24
AT 28	0-2 2-64 64+	N N N	Duff Dark brown sandy soil with pebbles Dark brown sandy soil with pebbles	5m at 190° from AT 27
AT 29	0-2 2-64 64+	N N N	Duff Dark brown sandy soil with pebbles Dark brown sandy soil with pebbles	5m at 190° from AT 28
AT 30	0-5 5-80 80+	N N N	Duff Dark brown sandy soil with pebbles Dark brown sandy soil with pebbles	5m at 190° from AT 29
Site EaSh-72				
AT1	0-5 5-30 30+	N N N	Duff, pine needles, rotten wood Medium brown sandy soil with pebbles Roots	60cm at 180° from bank, UTM 10 0340837 5548598
AT2	0-7	N	Duff	2m 180° of AT1

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
	7-40	N	Medium orange/brown sandy soil with pebbles and small roots	
	40-65	N	Medium dark brown sandy soil with pebbles	
	65-70	N	Grey clay/sandy soil with rock	
	70+	N	Rock	
AT3	0-8	N	Duff	5m 270° of AT1
	8-56	N	Medium orange/brown sandy soil with pebbles	
	56-80	N	Grey clay/sandy soil with pebbles	
	80+	N	Clay	
AT4	0-6	N	Duff	2m 180° of AT3
	6-80	N	Medium orange/brown sandy soil with pebbles	
	80-85	N	Grey clay/sandy soil with pebbles	
	85+	N	Clay	
AT5	0-10	N	Duff	5m 270° from AT3
	10-70	N	Medium orange/brown sandy soil with pebbles	
	70+	N	Rock	
AT6	0-10	N	Duff	2m 180° of AT5
	10-45	N	Medium orange/brown sandy soil with pebbles	
	45+	N	Rock	
AT7	0-7	N	Duff	5m 225° from AT5
	7-45	N	Medium orange/brown sandy soil with pebbles	
	45+	N	Rock	
AT8	0-8	N	Duff	2m 135° from AT7
	8-60	N	Medium orange/brown sandy soil with pebbles	
	60+	N	Rock	
AT9	0-5	N	Duff	5m 225° of AT7
	5-15	N	Chunk of wood, Medium orange/brown sandy soil with pebbles	
	15+	N	Root	
AT10	0-15	N	Mostly duff	2m 135° from AT9
	15-70	N	Medium orange/brown sandy soil with pebbles	
	70+	N	Rock	
AT11	0-7	N	Duff	5m 90° from AT1
	7-25	N	Medium orange/brown sandy soil with pebbles	
	25+	N	Rock	
AT12	0-10	N	Duff	2m 180° of AT4
	10-70	N	Medium orange/brown sandy soil with pebbles	

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
	70+	N	Rock	
AT13	0-25	N	Duff	
	25-50	N	Medium orange/brown sandy soil with pebbles	5m 135° from AT11
	50+	N	Rock	
AT14	0-15	N	Duff	
	15-60	N	Medium orange/brown sandy soil with pebbles	2m 180° of AT13
	60+	N	Red/brown soil/clay	
AT15	0-8	N	Duff	
	8-30	N	Medium orange/brown sandy soil with pebbles	10m 90° from AT13
	30+	N	Rock	
AT16	0-10	N	Duff	
	10-20	N	Medium orange/brown sandy soil with pebbles	2m 225° from AT15
	20+	N	Rock	
AT17	0-6	N	Duff	
	6-40	N	Medium orange/brown sandy soil with pebbles	10m 155° from AT15
	40-75	N	Bright orange/brown sandy soil	
	75+	N	Rock	
AT18	0-6	N	Duff	
	6-45	N	Medium brown sandy soil	2m 225° from AT17
	45+	N	Rock	
AT19	0-12	N	Duff	
	12-45	N	Medium brown sandy soil	10m 155° from AT18
	45+	N	Rock	
AT20	0-7	N	Duff	
	7-70	N	Medium brown sandy soil	2m 225° from AT19
	70+	N	Gravels	
AT21	0-10	N	Duff	
	10-70	N	Medium brown sandy soil	10m 155° from AT19
	70+	N	Gravels	
AT22	0-30	N	Duff	
	30-70	N	Medium brown sandy soil	2m 225° from AT21
	70+	N	Gravels	
AT23	0-30	N	Duff	
	30-45	N	Medium brown sandy soil, terminates at 45cm	10m 135° from AT21
	45+	N	Gravels	

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
AT24	0-15 15-23 23+	N N N	Duff Medium brown sandy soil Rock	2m 225° from AT23
AT25	0-5 5-70 70+	N N N	Duff Medium brown sandy soil Gravels	10m 135° from AT23
AT26	0-18 18-70 70+	N N N	Duff Medium brown sandy soil Gravels	2m 225° from AT25
AT27	0-6 6-70 70+	N N N	Duff Medium brown sandy soil Gravels	10m 155° from AT25
AT28	0-10 10-45 45+	N N N	Duff (in heavy wood debris) Medium brown sandy soil Rock	2m 244° from AT27
AT29	0-6 6-30 30+	N N N	Duff Medium brown sandy soil Rock	10m 135° from AT27
AT30	0-6 6-22 22+	N N N	Duff Sandy soil with pebbles Rock	2m 225° from AT29, UTM 10u 0340909 5548520
AT31	0-10 10-18 18-25 25+	N N N N	Duff Dark brown sandy soil Light brown sandy soil Rock	10m at 150° from AT29
AT32	0-6 6-55 55-60 60+	N N N N	Duff Dark brown sandy soil Light brown sandy soil Gravels	2m 270° from AT31
AT33	0-7 7-29 2-50 50+	N N N N	Duff Dark brown sandy soil Light brown sandy soil Gravels	10m at 140° from AT31
AT34	0-2 2-18 18-24 24+	N N N N	Duff Dark brown sandy soil Red/brown soil with pebbles Rock	2m at 233° from AT33

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
AT35	0-2	N	Duff	
	2-18	N	Dark brown sandy soil	10m at 140° from AT33
	18+	N	Rock	
AT36	0-2	N	Duff	2m at 230° from AT35
	2-17	N	Dark brown sandy soil	
	17-26	N	Light brown sandy soil	
	26-45	N	Saturated light brown sandy soil with pebbles	
	45+	N	Rock	
AT37	0-3	N	Duff	10m at 130° from AT35
	3-25	N	Dark brown sandy soil	
	25-30	N	Red/brown soil	
	30-35	N	Orange/brown soil	
	35+	N	Rock	
AT38	0-2	N	Duff	2m at 240° from AT37
	2-19	N	Dark brown sandy soil	
	19+	N	Rock	
AT39	0-6	N	Duff	
	6-12	N	Dark brown sandy soil	10m at 140° from AT37
	12-38	N	Light brown	
AT40	0-5	N	Duff	4m 230° from AT39
	5-10	N	Dark brown sandy soil	
	10-15	N	Grey sandy soil	
	15-30	N	Dark brown/red sandy soil	
	30+	N	Rock	
AT41	0-6	N	Duff	
	6-45	N	Bright red/brown soil with pebbles	10m at 160° from AT39
	45+	N	Grey clay	
AT42	0-2	N	Duff	2m at 262° from AT41
	2-30	N	Bright red/brown soil with pebbles	
	30-70	N	Grey soil with gravel	
	70+	N	Grey clay	
AT43	0-18	N	Duff	10m at 160° AT41
	18-35	N	Bright red/brown soil with pebbles	
	35-50	N	Terminates at rock at 50cm	
	50+	N	Rock	
AT44	0-12	N	Duff	2m at 160° from AT43
	12-35	N	Bright red/brown soil with pebbles	

Baseline Archaeological Services Ltd.

Permit Report 2012-0328

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
	35+	N	Rock	
AT45	0-15	N	Duff	
	15-70	N	Bright red/brown soil with pebbles	10m at 170° from AT43
	70+	N	Gravels	
AT46	0-10	N	Duff	
	10-70	N	Bright red/brown soil with pebbles	2m at 261° from AT45
	70+	N	Gravels	
AT47	0-15	N	Duff	
	15-30	N	Bright red/brown soil with pebbles	10m at 150° from AT45
	30-45	N	Dry rotten wood, dark black soil	
	45-50	N	Light brown soil	
	50+	N	Rock	
AT48	0-8	N	Duff	
	8-30	N	Bright red/brown soil with pebbles	2m at 260° from AT47
	30+	N	Rock	
AT49	0-8	N	Duff	
	8-40	N	Bright red/brown soil with pebbles	10m 172° from AT47
	40+	N	Grey clay	
AT50	0-12	N	Duff	
	12-24	N	Bright red/brown soil with pebbles	2m 280° from AT49
	24-30	N	Grey mottled	
	30+	N	Rock	
AT51	0-10	N	Duff	
	10-70	N	Bright red/brown soil with pebbles	UTM 10 0340957 5548438
	70+	N	Rock	
AT52	0-10	N	Duff	
	10-45	N	Bright red/brown soil with pebbles	2m at 280° from AT51
	45-60	N	Burnt wood	
	60+	N	Rock	
AT53	0-12	N	Duff	
	12-72	N	Bright red/brown soil with pebbles	10m at 176° from 51
	72+	N	Rock	
AT54	0-12	N	Duff	
	12-70	N	Bright red/brown soil with pebbles	10m at 264° from AT53
	70+	N	Rock	
AT55	0-13	N	Duff	
				10m at 155° from AT53

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
	13-45 45+	N N	Bright red/brown soil with pebbles Rock	
AT56	0-15 15-70 70+	N N N	Duff Bright red/brown soil with pebbles Rock	2m at 264° from AT55
AT57	0-5 5-44 44-70 70+	N N N N	Duff Bright red/brown soil with pebbles Bright orange soil Rock	10m at 159° from AT55
AT58	0-7 7-30 30-70 70+	N N N N	Duff Grey sandy soil with pebbles Bright red/brown soil with pebbles Rock	2m at 264° from AT57
AT59	0-20 20-90 90+	N N N	Duff Bright red/brown soil with pebbles Rock	10m at 169° from AT57
AT60	0-20 20-40 40+	N N N	Duff Bright red/brown soil with pebbles Root	2m at 264° from AT59
AT61	0-6 6-70 70+	N N N	Duff Bright red/brown soil with pebbles Rock	10m at 146° from AT59
AT62	0-13 13-40 40+	N N N	Duff Bright red/brown soil with pebbles Rock	2m at 250° from AT61
AT63	0-16 16-40 40+	N N N	Duff Bright red/brown soil with pebbles Rock	10m at 151° from AT61
AT64	0-16 16-40 40+	N N N	Duff Bright red/brown soil with pebbles Rock	2m at 270° from AT63
AT65	0-30 30-55 55+	N N N	Duff Bright red/brown soil with pebbles Rock	10m at 159° from AT63
AT66	0-15 15-43	N N	Duff Bright red/brown soil with pebbles	2m at 270° from AT65

Test #	CMDBS	Cultural	Matrix Description	Location/Comments
	43+	N	Rock	
AT67	0-19 19-23 23+	N N N	Duff Bright red/brown soil with pebbles Rock	10m at 150° from AT65
AT68	0-4 4-26 26+	N N N	Duff Bright red/brown soil with pebbles Rock	2m 270° from AT67
AT69	0-15 15-20 20+	N N N	Duff Bright red/brown soil with pebbles Rock	10m at 160° from AT67
AT70	0-10 10-20 20-70 70+	N N N N	Duff Bright red/brown soil with pebbles Chunk of wood Rock	2m 270° from AT69
AT71	0-20 20-70 70+	N N N	Duff Bright red/brown soil with pebbles Rock	10m at 150° from AT69
AT72	0-12 12-70 70+	N N N	Duff Bright red/brown soil with pebbles Rock	2m at 240° from AT71
AT73	0-25 25-70 70+	N N N	Duff Bright red/brown soil with pebbles Rock	10m at 160° from AT71
AT74	0-20 20-70 70+	N N N	Duff Bright red/brown soil with pebbles Rock	2m 269° from AT73
AT75	0-14 14-60 60+	N N N	Duff Bright red/brown soil with pebbles Rock	10m at 160° from AT73
AT76	0-5 5-50 50+	N N N	Duff Bright red/brown soil with pebbles Rock	2m 268 from AT75
AT77	0-15 15-22 22+	N N N	Duff and wood debris Bright red/brown soil with pebbles Rock	10m at 164° from AT75

Test #	CM DBS	Cultural	Matrix Description	Location/Comments
AT78	0-35	N	Duff	2m 260° from AT77
	35-50	N	Bright red/brown soil with pebbles	
	50+	N	Rock	
AT79	0-10	N	Duff	10m at 162° from AT77
	10-60	N	Bright red/brown soil with pebbles	
	60+	N	Rock	
AT80	0-25	N	Duff	2m 245° from AT79
	25+	N	Roots	
AT81	0-5	N	Duff	10m at 149° from AT79
	5-50	N	Bright red/brown soil with pebbles	
	50+	N	Rock	
AT82	0-10	N	Duff	2m 245° from AT81
	10-50	N	Bright red/brown soil with pebbles	
	50+	N	Rock	
AT83	0-10	N	Duff	10m at 138° from AT81
	1-50	N	Bright red/brown soil with pebbles	
	50+	N	Rock	
AT84	0-30	N	Duff	2m 245° from AT83
	30-40	N	Bright red/brown soil with pebbles	
	40+	N	Rock	