CULTURAL RESOURCES REPORT COVER SHEET

Project Number: 2023-09-05986

Author: Adam M. Hefling and Garth L. Baldwin

Title of Report: Cultural Resource Assessment Along West Sequim Bay Road and Washington Harbor Loop, Sequim, Clallam County, Washington

Date of Report: October 13, 2023

County: Clallam Sections: 21/22/27/28 Township: 30 N Range: 3W

Quad: Sequim (2020) Miles: 1.4

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #:

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DRAYTON ARCHAEOLOGY

Cultural Resource Assessment Along West Sequim Bay Road and Washington Harbor Loop, Sequim, Clallam County, Washington



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Drayton Archaeology Report: 0923G

October 13, 2023

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Cultural Resource Assessment Along West Sequim Bay Road and Washington Harbor Loop, Sequim, Clallam County, Washington

Authors:	Adam M. Hefling and Garth L. Baldwin
Date:	October 13, 2023
Location:	Sequim, Clallam County, Washington
USGS Quad:	Sequim, WA 7.5-minute USGS Quadrangle (2020)
Township, Range, Section:	T 30 N R 3 W S 21/22 and 27/28

SUMMARY

Drayton Archaeology (Drayton) was retained by Wilson Engineering to conduct an archaeological assessment along West Sequim Bay Road, Sequim, Clallam County for the proposed West Sequim Bay Road Underground Utility Construction. The project involves the construction of buried utilities including sanitary sewer and water main along West Sequim Bay Road from Washington Harbor Road easterly to Forrest Road as well as a pump station at the intersection with Forrest Road. Another proposed water main will extend 330 meters (1100 feet) between a gap in Washington Harbor Loop. The purpose of this review is to assess the project corridor for cultural resources that may complicate the proposed work. This archaeological assessment was conducted to satisfy compliance requirements under compliance with the Washington Code 43.21C, State Environmental Policy Act (SEPA) through the city of Sequim (City), and if archaeological resources are encountered, through RCW 27.53 through the Washington Department of Archaeology and Historic Preservation (DAHP).

Drayton's cultural resources assessment consisted of a thorough background review, field investigation, and production of this report. Background review concluded the project is in an area of moderate probability for cultural resources based primarily on the property's proximity to known archaeological sites, topography, and ecological context. On-site fieldwork included systematic visual reconnaissance and subsurface investigation of areas of proposed impact. No precontact or historic archaeological deposits were encountered within the project area during Drayton's field investigation. Drayton recommends the project proceed with no additional archaeological oversight.

Although no archaeological management or mitigation measures are recommended, the project is located within an area of moderate probability for encountering cultural resources. A general inadvertent discovery plan (IDP) for the information of all involved in the project is located at the end of this document. It is the responsibility of all involved to ensure proper consideration for cultural resources and to develop archaeological mitigation strategies, as needed.

REGULATORY CONTEXT

The subject project is reviewed and permitted through the city of Sequim, and is subject to State Environmental Policy Act (SEPA). SEPA requires that impacts on cultural resources be considered during the public environmental review process. Under SEPA, the Washington State Department of Archaeology and Historic Preservation (DAHP) is the sole agency with technical expertise regarding cultural resources and provides formal opinions to local governments and other state agencies on a site's significance and the impact of proposed projects upon such sites.

If archaeological resources are located, the project is subject to Washington State laws addressing the protection of archaeological sites and Native American burials. The Archaeological Sites and Resources Act (RCW 27.53) prohibits the disturbance of known precontact and historic archaeological sites on public or private lands. The Indian Graves and Records Act (RCW 27.44) prohibits the disturbance of American Indian graves and requires re-interment under the supervision of the affected Indian tribe if inadvertent disturbance by construction or other activity occurs.

PROJECT LOCATION AND DESCRIPTION

The project area consists of the right of way (ROW) located along West Sequim Bay Road and Washington Harbor Loop in Township 30 North, Range 3 West, Sections 21/22 and 27/28 of the Willamette Meridian (Figures 1 and 2). The project, as proposed, involves the construction of a 30.5-centimeter (cm) or 12-inch (in) sanitary sewer line, a 30.5 cm (12-in) Water Main line, a 20 cm (8-in) force main line, and a pump station. This activity will take place along West Sequim Bay Road between Forrest Road on the east and Washington Harbor Road on the west, with the pumphouse being built at the east end of the project at the intersection of Forrest Road. An additional 30.5 cm (12-in) water main line will be constructed in the gap between two segments of Washington Harbor Loop (Figure 3).

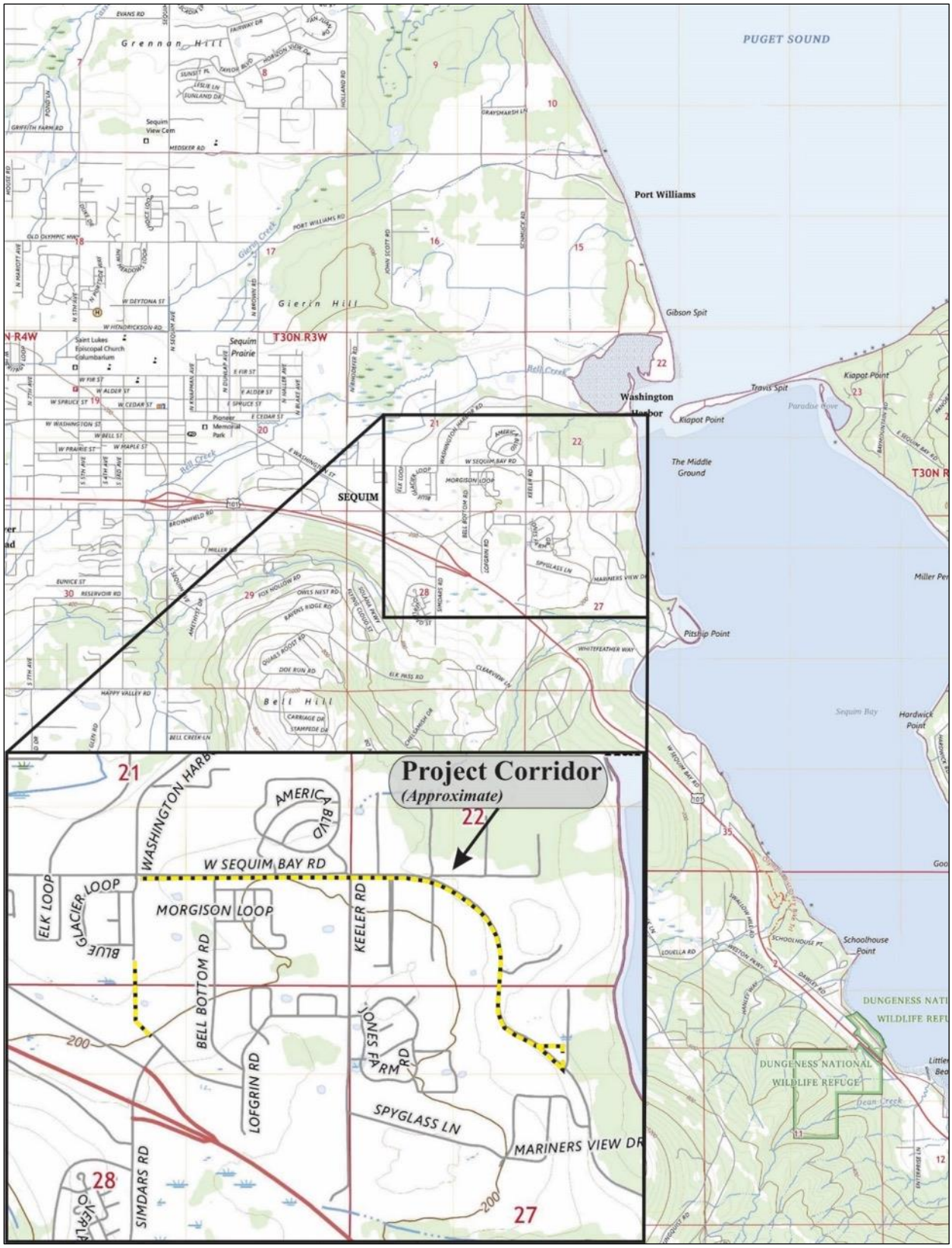


Figure 1. A portion of the Sequim (2020), WA 7.5' USGS quad map of the project area.



Figure 2. An aerial image illustrating the project area.

BACKGROUND REVIEW

An investigation of available archives informs us of the potential for encountering cultural resources within project areas. Drayton's consulted archives include documents related to precontact and historic environmental and cultural contexts, previously recorded cultural resources studies and site records, and selected published local historic accounts. Archaeological records are obtained from the Washington State Department of Archaeology and Historic Preservation's (DAHP) Washington Information System for Architectural and Archaeological Records Data (WISAARD). WISAARD is a restricted-access searchable geographic information system containing locations of previously recorded cultural resources surveys conducted post-1995, archaeological sites, historic sites, National Register of Historic Places (NRHP) sites, and cemeteries and burials. For this project, Drayton reviewed cultural resource archives documented within an approximate 1.6 kilometer (km) or one-mile (mi) radius of the project area.

The following sections detail the environmental, cultural, and archaeological circumstances that inform Drayton's archaeological assessment of the project area.

Natural Environmental Setting

The environmental setting of the region is presented here to appreciate the unique geologic conditions responsible for the landscape formations that affected the lifeways of early inhabitants. Natural geologic conditions also provide baseline context for the cultural resources assessment to better understand how the landscape has been culturally modified by various human activities.

Geology and Topography

The project area is located near Sequim Bay in the foothills to the north of the Olympic Mountains, a continuation of the Coast Range of mountains that extend from northern California through Oregon, Washington, and southern British Columbia. Sequim Bay is part of a system of natural waterways formed when lobes of glacial ice flowed through the Puget Sound during the late Pleistocene carving deep trenches later filled by rising sea levels (Franklin and Dyrness 1973; McKee 1972). Pleistocene glaciation eroded the Olympic Mountains, creating numerous U-shaped valleys and leaving behind glacial deposits including dacite, a stone raw material favored for stone tool manufacturing throughout the Holocene (Gough 1998: 2.6).

Soils

The University of California Davis Agriculture and Natural Resources, in conjunction with the United States Department of Agriculture Natural Resource Conservation District developed an interactive soil survey application that provides a description of native soils in specific locales. According to the UC Davis SoilWeb database, soils within the project area are mapped as Yeary gravelly loam in the eastern portion and Clallam sandy loam west of Keeler Road (SoilWeb September 29, 2023).

Flora and Fauna

The project area is located on the Olympic Peninsula and consists of two major vegetation zones: the *Tsuga heterophylla* and the *Picea sitchensis* (Franklin and Dyrness 1973). The Western Hemlock or *Tsuga heterophylla* vegetation zone extends from the Kenai Peninsula in Alaska, along the coast and inland western slopes of the Cascade Range of Washington and Oregon states, to Sonoma County in California. Dominating the mild and humid regions along the coast the Western Hemlock Zone is influenced by maritime climatic zones (Franklin and Dyrness 1973). The *Picea sitchensis* vegetation zone is considered a variant of the *Tsuga heterophylla* zone stretching the length of the Washington coast (Franklin and Dyrness 1973).

Native vegetation in the *Tsuga heterophylla* zone includes Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*), salal (*Gaultheria shallon*), vine maple (*Acer circinatum*), bracken fern (*Pteridium aquilinum*), blackcap *(Rubus occidentalis*), currants (*Ribes spp.*), deer fern (*Blechnum spicant*), devil's club (*Oplopanax horridus*), gooseberries (*Ribes spp.*), huckleberries (*Vaccinium spp.*), Indian plum (*Oemleria cerasiformis*), oceanspray (*Holodiscus discolor*), red elderberry (*Sambucus racemosa*), snowberry *(Symphoricarpos albus*), sword fern (*Polystichum munitum*) and trailing blackberry (*Rubus ursinus*) (Franklin and Dyrness 1973; Pojar and MacKinnon 1994). Areas of prairie, oak woodland, and pine forest are intermittently distributed throughout the rain shadow of the Olympic Mountains (Franklin and Dyrness 1973) where the project area lies.

Vegetation within the *Picea sitchensis* zone, includes Sitka spruce (*Picea sitchensis),* western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), Pacific silver fir (*A. amabilis*), red alder (*Alnus rubra*), and black cottonwood (*Populus balsamifera*). This vegetation zone consists of an understory of western swordfern (*Polystichum munitum*), false lily-of-the- valley (*Maianthemum dilatatum*), stream violet (*Viola glabella*), evergreen violet (*V. sempervirens*), red huckleberry (*Vaccinium parvifolium*), devils club (*Oplopanax horridus*), salmonberry (*Rubus spectablis*), and thimbleberry (*R. parviflorus*) (Pojar and MacKinnon 1994). A special variation known as the Olympic Rain Forest lies within the *Picea sitchensis* zone consisting of old growth forests dominated by Sitka spruce (*Picea sitchensis)* and western hemlock (*Tsuga heterophylla).* These vegetative species are found in major river valleys on the Olympic Peninsula including the Hoh, Quinault, Queets, and possibly the Bogachiel River valleys (Franklin and Dyrness 1973).

The Olympic peninsula and Washington coast host a unique and diverse population of fauna. Just off shore, minimally 29 species of marine mammals call these waters home. Some species include orca (*Orcinus orca*), gray (*Eschrichtius robustus*) and humpback (*Megaptera novaeangliae*) whales, sea lions (*Otariidae* spp.), sea otters (*Enhydra lutris*), Dall's porpoise (*Phocoenoides dalli*), and harbor seals (*Phoca vitulina*). Over 300 species of seasonal and permanent birds are present. Raptors such as bald eagles (*Haliaeetus leucocephalus*), red-tailed hawks (*Buteo*

jamaicensis), northern harriers (*Circus hudsonius*), and Peregrine falcons (*Falco peregrinus*) frequent the inland and shoreline habitats. Shorebirds and waterfowl including snow geese (*Anser caerulescens*), trumpeter (*Cygnus buccinator*) and tundra (*Cygnus columbianus*) swans, great blue heron (*Ardea erodias*), Canada goose (*Branta canadensis*), wood duck (*Aix sponsa*), green-winged teal (*Anas crecca*), mallard (*Anas platyrhynchos*), northern pintail (*Anas acuta*), gadwall (*Anas strepera*), American wigeon (*Anas americana*), and red-winged blackbird (*Agelaius phoeniceus*) often find refuge in the salt and freshwater marshes. The Olympic peninsula host some of the last remaining intact primeval forests which provide essential habitat for threatened species such as northern spotted owls (*Strix occidentalis caurina*), western snowy plover (*Charadrius nivosus nivosus*), and marbled murrelet (*Brachyramphus marmoratus*) (Olympic NPS 2022).

Native fish including black rockfish (*Sebastes melanops*), herring (*Clupea pallasii*), smelt (or eulachon) (*Thaleichthys pacificus*), halibut (*Hippoglossus stenolepis*), flatfish (*Pleuronectiforms* spp.) Chinook salmon (*Oncorhynchus tshawytscha*) coho salmon (*Oncorhynchus Kisutch*), chum salmon (*Oncorhynchus keta*), sockeye salmon (*Oncorhynchus nerca*), and spiny dogfish (*Squalus ananthias*) are abundant in the area. Shellfish including littleneck clams (*Leukoma staminea),* butter clams (*Saxidomus giganteus),* horse clams (*Tresus capax*), bay mussels (*Mytilus edulis),* cockles (*Clinocardium nuttallii),* native oysters (*Ostrea lurida*), and crab *(Crustacea* spp.*)* are also common. The unsung heroes of the ecosystem, invertebrates make up approximately 90 percent of the fauna observed in the region. Most notable are the Pacific banana slugs (*Ariolimax columbianus*) which help keep the forests clear of detritus (Olympic NPS 2022).

The region sustains a variety of large and small terrestrial mammals. Large mammal species include blacktail deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), and black bear (*Ursus americanus*). From the coastal ranges of the Olympic peninsula to the western slopes of the Cascade Range, the largest unmanaged herd of Roosevelt elk (*Cervus canadensis roosevelti*), a subspecies of elk/ wapiti (*Cervus canadensis*), inhabit Olympic National Park and surrounding forests. Small mammals include rabbits (*Leporidae* spp.), beaver (*Castor canadensis*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), northern flying squirrel (*Glaucomys sabrinus*), bobcat (*Lynx rufus*), Townsend's chipmunk (*Tamias townsendii*), and Douglas' squirrel (*Tamiasciurus douglasii*). Meanwhile, species such as the Olympic marmot (*Marmota olympus*), Olympic snow mole (*Scapanus townsedii olympicus*), and Olympic ermine (*Mustela erminea olympica*) are endemic to the mountains and old growth forests of the peninsula (Olympic NPS 2022).

Cultural Context

A broad discussion of regional land use in the vicinity of the project area provides contextual information regarding past inhabitants and the activities in which they engaged. It is important to note that many of the name designations applied to Native inhabitants (particularly during contact and early historic periods), are those given by European explorers, Euro-American settlers, and others compiling information for treaty purposes.

Human occupation of the Puget Lowland is well documented in several archaeological, ethnographic, and oral historical records (e.g., Ames and Maschner 1999; Greengo and Houston 1970; Larson and Lewarch 1995; Moss 2011; Nelson 1990; Suttles 1974). British Columbia Northwest Coast Culture traditions are closely related and can be viewed in Borden (1950; 1975), Carlson and Dalla Bona (1996), Fladmark (1982), and Matson and Coupland (1995).

Precontact

Puget Lowland archaeology has traditionally been subdivided into three time periods: the early (approximately 12,000 to 5,000 years BP), middle (approximately 5,000 to 1,000 BP) and late periods (approximately 1,000 to 250 BP) (Carlson 1983). However, calibrated radiocarbon dates from the Bear Creek site (45KI839) located in Redmond, Washington date to 12,420 - 12,690 years BP (Kopperl et al. 2015). The date ranges associated with the archaeological time periods of this region are fluid and subject to change when new sites are located and dated.

The early period is characterized by activities to support habitation within habitation areas along river terraces or outwash channels. Tool technology is primarily characterized by flaked stone tools including fluted projectile points, leaf-shaped points, and cobble-derived tools. These artifacts are often attributed to the Olcott phase, named after the site-type near Arlington and Granite Falls (Baldwin 2008; Kidd 1964; Mattson 1985). As suggested by Mattson (1985) and Kidd (1964), Olcott sites are generally located away from modern shorelines, where occupation took place along terraces of active water courses of the time. Today, these past habitation areas are often found away from modern rivers, as the course of waterways and channels have shifted over time. Besides the lithic assemblage, little faunal or organic evidence dates to this period - likely a result of poor preservation due to soil composition and elapsed time. The lack of organic evidence and the abundance of lithic materials unintentionally skew the archaeological record to suggest a specialization of terrestrial hunting practices.

The middle period coincides with a stabilization of the physical environment and climate to modern conditions. The middle period is noted for its increased artifact and trait diversity including a full woodworking toolkit comprised of bone and antler implements, art and ornamental objects, status differentiation in burials, and extremely specialized fishing and sea-mammal hunting technologies (Ames and Maschner 1999; Matson and Coupland 1995; Moss 2011; Wessen 1990). Lithic technology becomes specialized to include smaller notched points and ground stone (Moss 2011; Nelson 1990; Wessen 1990). Shell midden sites first appeared during this period, indicating a transition to a predominantly maritime-based subsistence pattern (Matson and Coupland 1995; Nelson 1990; Thompson 1978). Although structural elements such as post molds have been identified (Moss 2011; Nelson 1990), habitation structures have not been excavated.

The late period is dominated by a settlement pattern along the coastline, streams, and rivers that show evidence of increased fortification (Ames and Maschner 1999; Matson and Coupland 1995; Moss 2011). Rising sea levels and riparian environments supporting large salmon runs allowed

salmon to become a predominant food source (Moss 2011; Wessen 1990). The late period is generally recognized by an apparent decrease in artifact diversity. Stone carving and chipped stone technologies nearly disappear, while trade goods (indicating extensive trade networks along the coast and with inland plateau peoples), increase (Moss 2011; Nelson 1990; Thompson 1978).

Ethnographic

The project area lies within the traditional territory of speakers of *nəxʷsƛ̓ay̓əmúcən* (Klallam) language. Prior to the recent historic era, Klallam people lived in villages located on the northern Olympic Peninsula and both sides of the Strait of Juan de Fuca. Port Angeles was the location of two, possibly three, of eleven Klallam village sites reported along the south shore of the Strait of Juan de Fuca (Gunther 1927). *Tse-whit-zen* (*cixʷícen*) was located at the base of Ediz Hook (Gunther 1927: 178; Suttles 1990:454; Waterman c. 1920). The village was "a large and important village ... of considerable importance in aboriginal times" (Waterman c. 1920: n.p.). *Tse-whit-zen* was reported to be in "a swampy place," east of the lagoon outlet, fronting the bay. The spit itself was referred to as *Tcltca Kwitc*, "sand spit". *I'e'nis* (*?i?ínes*) was a village located on the eastern shore of the bay near the mouth of Ennis Creek (Gunther 1927). The village was fortified by two rows of horizontal planks, the outer 20 feet high and the inner row 5 feet. The enclosed village was divided into compartments to house 200 people (Gunther 1927 after Kane 1847; Waterman c. 1920). In 1852, surveyors with the United States Coastal Survey mapped the Tumwater (or Valley Creek) village site, which may have served as a seasonal resource-gathering area (Alden 1853).

The Klallam employed economic and subsistence strategies like those of their Salish neighbors, as the bulk of their economic activities were oriented toward marine and riverine environments (Suttles 1990:462; White 2013). The Klallam were skilled fishers, hunters, and gatherers who possessed abundant knowledge of locally available resources. They followed a subsistence pattern of seasonal movements determined by the availability of varying resources. The annual cycle of movement was generally maintained by the settlement of a substantial winter village with many smaller resource-gathering areas supporting subsistence activities such as plant or shellfish collecting, hunting, and fishing.

Villages ranged in size from one structure to multiple rows of houses, generally built parallel to the shore. Winter villages were staked by the presence of large plank longhouses; while residential structures in the seasonal habitation areas were usually small pole-frame lodges covered with brush or woven mats. Rush mats were typically lashed together with twine made from cedar or nettles and then used to cover the frames of temporary shelter (Gunther 1927: 190). According to Gunther (1927), all structures were crafted from cedar and fir, and all permanent buildings including those for habitation and ceremonies, such as the potlatch, were constructed using cedar and fir posts and planks (Gunther 1927:187). Additionally, interior structures such as shelving and racks used for food processing were constructed from cedar.

Gathered food was eaten fresh and/or processed for winter storage. Women would travel long distances (Gunther 1927:196) to gather roots, bulbs, several varieties of berries sprouts, nuts, and many types of vegetables (Gunther 1927:197, 1945:38, Kruckeberg 1982:74). Fishing was conducted year-round following the seasonal run of various varieties of salmon and other species. Salmon was the staple food resource for the Klallam, but halibut, lingcod, herring, flounder and sole, dogfish, smelt and candlefish, and various species of shellfish were consumed (Gunther 1927:198 Suttles 1990). Several fishing techniques were employed to maximize yields including trolling, line fishing, and spearing methods (Gunther 1927:198). According to Gunther (1927), shellfish was harvested year-round and primarily by Klallam women. Marine resources were consumed fresh, steamed, or dried.

Terrestrial animals supplanted the diet of the Klallam with blacktail deer (*Odocoileus hemionus*) and Roosevelt elk (*Cervus elaphus roosevelti*) considered the most important. Bows and arrows were used to hunt game (Gunther 1927:205). Deer meat was consumed fresh or dried for winter storage. Deer hides, sinew, and intestines were used to make clothing, blankets, moccasins, sewing thread, bags, and containers (Eells [1887] 1889:630, Gunther 1927). A variety of fur bearing animals, predominantly beaver (*Castor canadensis*) were consumed and utilized for their skin and fur to make clothing and for trade purposes (Eells [1887] 1889:622). A variety of avian species were sought for food and feathers used for blankets and ceremonial purposes (Eells [1887] 1889:619-620, Gunther 1927:205, Cooper 1860:219). Sea mammals were hunted for meat and resources such as oil, and sinew. Whales, particularly the humpback (*Megaptera novaeangliae*), orca (*Orcinus orca*), and minke (*Balaenoptera acuctorostrata*) were harpooned (Suttles 1990:458). Whale meat was highly prized among the Klallam, as it was highly nutritious and could feed many people. Gunther (1927) and Suttles (1990) describe whale-hunting strategies employed by the Klallam stating that they did not go out to sea to hunt whales, rather they would deploy from shore when a designated observer spotted one. Sea mammal lookout towers are described in Swan ([1859] 1971:91). Norman Smith (1950:85-87) recounts the killing of a whale in Port Angeles behind the Ediz Hook in the 1860s, detailing that groups of men would canoe out to the whale and spear it with spears that had inflated marine animal bladders attached to the ends to act as floats. Eventually, the sheer number of spears with attached floats prevented the whale from diving and escaping. Once dead, the whale was towed to shore and processed for meat and other raw materials (Smith 1950:85-87) Whale meat was consumed and their bones were used for making tools and connective tissues for sinew for sewing (Suttles 1990:458, Elmendorf 1960: 107).

The material culture of the Klallam people was also very similar to that of their Salishan neighbors. Skilled craftsmen and technicians produced a wide range of goods from plant, bone, and stone materials. Like other southern Northwest Coast peoples, they were noted for their craftsmanship with wood and other plant fibers, such as western red cedar. Cedar was an instrumental raw material for the Klallam, as it was used in essentially all aspects of daily life. Not only was cedar

used to construct longhouses and other structures, as previously noted, it was also used to construct, canoes, boxes for storage of household items and valuables, boxes for resource acquisition activities, various tools, fishing equipment, heavy rope, arrows for hunting, and many smaller utilitarian items such as utensils. Cedar strips were used to affix halibut hooks to hemlock wood (Eels [1887] 1889:634). Cedar bark and other plant fibers were used to make woven objects, such as basketry, cordage, nets, napkins, mats, canoe sails, and clothing. Blankets were made from shredded cedar bark interwoven with goose feathers (Eells [1887] 1889:617) and babies were delivered on shredded cedar bark (Gunther 1927: 233-237). Cedar items were crafted for use in ceremonies and by the secret society. Gunther (1927:308) reports that speakers in ceremonies held mountain goat wool-decorated cedar fans and members of the secret society wore headdresses made from cedar bark and bird feathers. Ceremonial dancers wore cedar and maple-carved facemasks, while novices within the society wore headbands decorated with strips of dyed red cedar bark. Whistles used during potlatches and other secret society ceremonies were crafted from the bark of cedar and cherry wood (Gunther 1927:272).

Another widely utilized natural resource included the alder tree, which was primarily used to make plates, needles, and creasers for mat making (Eells [1894] 1985:172). The slow-burning nature of alder wood made it ideal for cooking, smoking salmon, and drying venison (Gunther 1927:190; 1945:27). Many species of plants were used to support the daily lives of the Klallam providing raw materials for goods, dyes, and medicines including, thistle, maple, bracken fern, many varieties of berries, Oregon grape, ironwood, and fireweed, to name a few. A comprehensive list of plant species utilized by the Klallam can be found in Gunther (1945).

Bone and stone artifacts represent a smaller, but no less important, portion of the material culture as most cutting tools and ornaments were made from these materials. Shell materials, although less often observed in the archaeological record, were also used to manufacture cutting tools and ornaments (White 2013).

During the post-contact period, Klallam people throughout the area slowly became amalgamated into three modern Klallam communities. These are the Lower Elwha Klallam, Jamestown S'Klallam, and Port Gamble S'Klallam Tribes. The Lower Elwha Klallam community today includes the descendants of the Klallam people who traditionally occupied Port Angeles Harbor in the vicinity of Ediz Hook (White 2013).

Historic Period

Initial European exploration of the Olympic Peninsula and subsequent contact with the S'Klallam occurred in the early 1790s, beginning with expeditions by Spaniard Manuel Quimper in 1790 and George Vancouver of Britain in 1792. Early accounts recorded villages north of Sequim in the Dungeness area and at the mouth of Sequim Bay (Blumenthal 2004). By the 1830s, trading posts were established on Vancouver Island and around Puget Sound. Trading posts attracted Euro-American settlers enticed by the fur trade and abundant timber resources. The rise in population

resulted in an increased competition for resources between Euro-American and Native groups. Under pressure from Washington Territorial Governor Isaac Stevens, local Native American tribes ceded their traditional lands in exchange for small reservations. In 1855, the Treaty of Point No Point assigned the S'Klallam to the Skokomish Indian Reservation approximately one hundred miles south of their traditional territory; most resisted the relocation (Stauss 2002). Despite finding work within sawmills and local fishing operations, the S'Klallam were increasingly pressured to relocate to the reservation as Euro-American populations expanded. In 1874, faced with forced removal from the Dungeness area, a group of S'Klallam families purchased 210 acres of land on the west side of Sequim Bay, establishing the community of Jamestown (Gorsline 1992; Gunther 1927, Stauss 2002; Suttles 1990).

The rapid growth of the Sequim-Dungeness Prairie began following the establishment of an irrigation system in May of 1896. Charles Franklin Seal, a prominent Dungeness merchant constructed the Sequim Trading Company near the Sequim Avenue-Washington Street intersection. From 1906-1907, he built the Opera House along the same street. In 1903, Joseph Keeler arrived to establish businesses and local utilities. Keeler was responsible for the first switchboard and telephone exchange, the first saloon, first sawmill, and in 1908 he built The Sinclair Hotel, the town's first hotel (Arksey 2008). Keeler laid out the first plat in the town site of Sequim and was a member and president of the Sequim Chamber of Commerce. By 1913, the petition to incorporate the town passed election and Jilson White became the first Mayor of Sequim (City of Sequim n.d.). Keeler also created the Sequim Light and Power Company, which was later powered by dams constructed on the Elwha River. Additionally, Keeler established the Sequim's water system, which was sold to the town in 1922 (City of Sequim n.d.).

Cultural Resource Management Inventories and Documented Resources

Previous cultural resources studies and projects conducted in the vicinity of the project area inform the archaeological context for this assessment and assist in the construction of Drayton's cultural resource expectations.

Previous Cultural Resources and Sites

A review of the DAHP's WISAARD database was conducted on October 6, 2023. According to the available data on WISAARD, twenty-one (21) cultural resources studies are recorded within a 1.6-kilometer (km) or one-mile radius of the project area. The ten (10) most relevant studies are presented in Table 1. These studies were largely conducted to satisfy regulatory compliance related to infrastructure and development projects or were conducted as proposed ground-disturbing activities were within a recorded archaeological buffer zone. Precontact site 45CA227 is a Klallam village site located adjacent to Sequim Bay and the Travis Spit. Additionally, three (3) archaeological sites are located within the same search radius.

Table 1. Cultural resource studies recorded within an approximate 1.6 km (one-mile) radius of the project area

Citation	Report Title	Results
Renaud 2023	Section 110 Site Monitoring Report for FY 22 for PNNL Sequim Campus, Clallam County, WA	45CA227 45CA278
Durkin and Adams 2021	Cultural Resources Inventory for US 101/Jefferson/Clallam County Fish Barriers-Remove Fish Barriers, Clallam and Jefferson County, Washington	Negative
Munsell 2020	NRCS Cultural Resources Survey for the Mapleview Dairy Project, RCPP 2020 Project, Contract No. 82054620047	Negative
Renaud 2019	Section 106 Review for the Proposed Extraction of Methane Emissions from Trees (2019-PNSO-021), Marine Sciences Laboratory.	Negative
Renaud and McFarland 2019	Section 106 Review to Install a Backflow Preventer for the MSL Fire Water Tank (2019-PNSO-002)	Negative
Durkin 2018	Section 106 review for the MINOS Soil Sampling Project (2018-PNSO-037), Clallam County, Washington	Negative
McFarland 2018	Cultural Resource Review for Deployment of Tidal Powered Turbines in Sequim Bay at the Marine Sciences Laboratory (MSL) Facilities, Pacific Northwest National Laboratory, Sequim, Washington	Negative
Baldwin and Hanson 2017	A Cultural Resource Assessment of the Proposed Bell Hill Estates Subdivision Project, Sequim, Clallam County, Washington	Negative
Pierson 2017	Cultural Resources Survey for Jamestown S'Klallam Tribe Wastewater Connection to City of Sequim Project	Negative
Brown 2015	Cultural Resources Review for Eelgrass Sampling Near Bugge Spit at the Marine Sciences Laboratory, Pacific Northwest National Laboratory, Sequim (2016-PNSO-002)	Negative

The site recorded nearest the project area is precontact site 45CA227, located approximately 0.4 km (0.25 miles) northeast of the project area. The site was recorded by Odegaard (1969) and revisited by McClure (1979) who describes the location as a Klallam village site located relatively close to Sequim Bay and the Travis Spit. Cultural material associated with the site consists of houses lined along the beach with disturbed and partially destroyed midden. Site 45CA278 is located approximately 0.99 km (0.62 miles) northeast of the project area. The site was recorded by Blukis Onat (1984) who describes the location as Kiapot Point located in proximity to Sequim Bay and Travis Spit. Cultural material associated with the site consists of burned structures, burnt wood, and historic pieces of metal. Site 45CA214 is located approximately 1.2 km (0.75 miles) southeast of the project area. The site was recorded by Kennedy (1976) who described the location as a shell midden site located in proximity to Pitship Point.

National Registered Historic Places (NRHP)

There are two (2) NRHP-eligible properties within a 1.6 km (one-mile) radius of the project. The closest property on the NRHP is site 45CA227, a Klallam village site containing a clam canning building built in 1905 by Hans Bugge, where a handful of Native Peoples were employed. The second property on the NRHP is site 45CA752, also known as the Cole Family Farm (Cole 2010).

The Cole Family Farm was a dairy farm built by Myron Louis Spath in 1932. The farm remains standing today and is located near Sequim Bay.

Recorded Cemeteries

There are two (2) cemeteries recorded within a 1.6 km (one-mile) radius of the project area. The closest cemetery is located 0.4 km (0.25 miles) northeast of the project area and is the Klallam village site, also known as site 45CA227 (The Seattle Times 1981). The second cemetery, 45CA809 (Travis Spit Human Remains 2019) is located on Travis Spit, approximately 1.03 km (0.64 miles) northeast of the project area. 45CA809 consists of an ulna observed in a test pit.

CULTURAL RESOURCE EXPECTATIONS

Based on the preceding background review, Drayton concludes that the project is located within an area of moderate probability for historic-era or precontact cultural deposits, structures, or isolated items. This determination is based largely on the historical land use of the property, the results of previous cultural resource assessments conducted in the vicinity, and nearby sites. Three (3) archaeological sites and two (2) cemeteries are recorded within a one-mile radius of the project increasing the likeliness of precontact materials. Based on the development of the area, the likelihood of recovering intact materials decreases.

If precontact materials are present, they may include remnants associated with habitation, subsistence practices, or ceremonial activities. Shell midden, vestiges of temporary resource-gathering areas and dwellings, lithic scatters, trails, hearths, fire modified rock, faunal remains, and other materials associated with precontact life may be represented. Historic-era remnants of early Euro-American settlement and subsequent occupation are also considered.

FIELD INVESTIGATION

Drayton employs standard archaeological field methods to assess the potential for cultural resources within the project area. Field methods include a thorough visual reconnaissance of the property and subsurface examination of soils. Visual reconnaissance includes a detailed surface survey of the areas proposed for ground alteration (or other impacts) to examine existing ground disturbances and locate surficial cultural materials or structures with historic or archaeological importance or cultural concern. Subsurface examination through the excavation of shovel probes or large-scale mechanical excavation provides a detailed sample of soil conditions to assess the potential for, or presence/absence of, buried archaeological deposits. Subsurface excavation is typically dependent upon considerations of the landform, topography, project proposal, and geologic conditions.

Drayton's archaeological assessment was conducted on September 25 and 26, 2022 by Drayton Archaeological Field Director Adam Hefling and technician Jack Baldwin. Weather conditions

were overcast and fair. A visual inspection of the project area was conducted to examine the terrain, observe existing ground disturbances, and locate surficial cultural materials.

Surface conditions for the project were largely impacted by the presence of West Sequim Bay Road, as the investigation is limited to the ROW. This area is covered by the road, and the edges are generally cut ditches. The easternmost portion of the survey, where the pumpstation will be located is undeveloped with a mix of grasses and shrubs. A 328-meter (1,075 feet) segment of the project area is in a gap between two segments of Washington Harbor Loop. This segment included a lowland agricultural pasture, as well as a small stretch of gravel road that currently serves as a driveway for two residences (Photos 1 – 5). No cultural materials were observed during the visual inspection of the project area.



Photo 1. Overview in far east of project area, at probe AH-01 and location of pumpstation.



Photo 2. A view of the project area along West Sequim Bay Road near probe AH-04.



Photo 3. View west along West Sequim Bay Road



Photo 4. View south of project area through pasture south of Washington Harbor Loop near AH-19.



Photo 5. View west of southern survey in gap between two segments of Washington Harbor Loop.

Thirty-seven (37) shovel probes were subsequently excavated along the West Sequim Bay Road ROW between Forrest Road and Washington Harbor Road. Six (6) probes were also excavated in the roadless gap between the two segments of Washington Loop road (Figure 3). Standard shovel probes consist of cylindrical pits measuring approximately 40 cm (15.75 in) in diameter. No predetermined target depth is set for probing, as depths are based on geologic conditions, water table, degree of disturbance, and professional judgment. Ideally, shovel probes are considered complete when at least 20 cm (approx. 8 in) of sterile soils are observed or an intact stratum of glacial deposits is encountered. Soils excavated from probes were screened through a shaker screen with quarter-inch hardware cloth. The shovel probes were completely backfilled, and the locations were marked with a GPS to compose a site sketch map.

Soil profiles were consistent with the previously described soils mapped for the area, with nearly all probes impacted by the presence of West Sequim Bay Road. Most probes consisted of grayish brown gravelly, sandy loam over a parent material of brown and gray with reddish brown mottles, compact glacial till (Photos 6 and 7). Some probes contained an upper stratum of mechanically compacted gravel aggregate related to road construction. Shovel probes in the pasture were extremely compacted and gravelly, likely due to highly eroded upper soil horizons. A description of the soil sequence and composition of each shovel probe is described fully in Appendix A. No cultural materials were encountered during the field investigation.



Figure 3. An aerial image illustrating shovel probe locations.



Photo 6. Probe AH-05 with glacial subsoil visible at the base.



Photo 7. Probe AH-13 with brown and grey-colored glacial subsoil visible at the base.

CONCLUSIONS AND RECOMMENDATIONS

Drayton's cultural resources assessment consisted of a thorough background examination, field investigation, and production of this report. A professional archaeologist who meets or exceeds the criteria set forth in RCW: 27.53 conducted this review and concluded the project is in an area of moderate probability for cultural resources. This assessment is based primarily on the property's proximity to known archaeological sites, topography, and ecological context. No cultural materials were located during the field investigation Based on the results of this review; Drayton recommends that the project proceed without further archaeological oversight.

Shovel testing is employed as a cost-effective means to evaluate subsurface conditions and locate buried cultural resources; however, it is not exhaustive. Therefore, no shovel testing regiment is 100% accurate in recovering or locating buried cultural resources. Regardless, State law provides for the protection of all archaeological resources under Washington State Revised Codes of Washington (RCW) Chapter 27.53, Archaeological Sites and Resources. Be advised that the unauthorized removal, theft, and/or destruction of archaeological resources and sites are strictly prohibited. Further, this statute provides for prosecution and financial penalties, including consultation and the recovery of archaeological resources, for those found in violation. Additional legal oversight is provided for Indian burials and grave offerings under RCW Chapter 27.44, Indian Graves and Records. RCW 27.44 states that the willful removal, mutilation, defacing, and/or destruction of Indian burials constitute a Class C felony. Washington legal code, RCW 68.50.645 - Duty to Notify, provides a strict protocol for the notification of law enforcement and other interested parties if any human remains, regardless of perceived patrimony, are encountered.

The following section, Inadvertent Discovery Protocols, outlines the recommended procedures that property owners, project managers, construction crews, and others responsible for work should follow if cultural materials are encountered during project activities.

INADVERTENT DISCOVERY PROTOCOLS

Archaeological Resources

If archaeological resources (e.g., shell midden, faunal remains (bones), stone tools, historic glass, metal, or other materials) are observed during project activities, all work in the immediate vicinity must stop and the area secured. The project archaeologist must be contacted immediately to inspect the materials and contact relevant parties. An assessment of the materials and consultation with government and tribal cultural resources staff is a requirement of Washington law. Once the situation has been assessed, steps to proceed can be determined.

Human Burials, Remains, or Unidentified Bone(s)

If human remains or indeterminate bones are encountered, work must stop immediately. The area surrounding the remains must be secured and of adequate size to protect them from further

disturbance until the DAHP provides notice to proceed. The discovery of any human skeletal remains must be reported to law enforcement immediately. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains to determine whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, the State Physical Anthropologist at the DAHP will assume jurisdiction over the remains. The DAHP will notify appropriate cemeteries and all affected tribes of the disturbed remains. The State Physical Anthropologist will determine whether the remains are Native or Non-Native origin and report that finding to appropriate cemeteries and affected tribes. The DAHP will handle all consultation with the affected parties as to the future preservation, excavation, and deposition of the remains and authorize a timeline for the continuation of work.

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APPENDIX A: SHOVEL PROBE INDEX

DEPTH BELOW SURFACE (CM)	SOIL DESCRIPTIONS	RESULTS
AH-01		
0 - 13	Dark gray brown sandy loam, 25% gravel	Negative
13 - 55	Yellowish brown sandy loam, 30% gravel (likely glacial)	Negative
Comments: Area recently cleared of vegetation, with mulched blackberry cane on surface. Terminated due to compaction.		
AH-02		
0 - 20	Dark brown sand (loose)	Negative
20 - 50	Pale brown sand	Negative
Comments: Terminated due to subsoil glacial sediment.		
AH-03		
0 - 26	Gray brown sandy loam	Negative
Comments: Terminated due to cobble impasse		
AH-04		
0 - 35	Gray brown sandy loam, 20% gravel, some cobbles, compact	Negative
Comments: Terminated due to cobble impasse		
AH-05		
0 - 15	Dark gray brown sandy loam	Negative
15 - 22	Dark gray sandy loam	Negative
22 - 30	Gray brown sandy loam mottled with reddish brown clay sand (glacial till)	Negative
Comments: Terminated due to glacial till		
AH-06		
0 - 10	very compact gray brown gravel aggregate (construction aggregate)	Negative
10 - 35	Gray brown sandy loam, 15% gravel, compact	Negative
Comments: Terminated due to compaction		
AH-07		
0 – 10	very compact gray brown gravel aggregate (construction aggregate)	Negative
10 - 37	Gray brown sandy loam, 15% gravel, compact	Negative
Comments: Terminated due to compaction		
AH-08		
0 - 17	Dark brown sandy loam, very compact	Negative
Comments: Terminated due to compaction		
AH-09		
0 - 15	Gray brown gravelly sandy loam, compact, many fine roots	Negative
15 - 20	Brown mottled with reddish brown and gray sandy loam (glacial till), compact	Negative
Comments: Terminate due to compaction		
AH-10		
0 - 20	Gray gravelly, sandy loam	Negative
20 - 36	Gray sandy loam mottled with reddish brown sandy loam, 15% gravel, compact	Negative
Comments: Terminated due to glacial subsoil		

DEPTH BELOW SURFACE (CM)	SOIL DESCRIPTIONS	RESULTS
AH-11		
0 - 20	Dark gray brown sandy loam, very compact	Negative
20 – 37	Pale brown mottled with reddish brown sandy clay loam, 20% gravel, compact	Negative
Comments: Terminated due to glacial subsoil		
AH-12		
0 - 15	Dark gray brown sandy loam, gravelly	Negative
15 - 33	Gray sandy loam, cobbly (glacial)	Negative
Comments: Terminated due to glacial subsoil		
AH-13		
0 - 12	Very dark gray brown sandy loam (wet)	Negative
12 – 27	Gary brown clay sand (wet)	Negative
27 - 40	Gleyed blueish gray mottled with strong brown sandy loam, gravelly with 10% cobbles	Negative
Comments: Terminated due to glacial subsoil		
AH-14		
0 - 25	Gray brown sandy loam	Negative
25 - 42	Gray brown sand, compact	Negative
Comments: Terminate due to compaction		
AH-15		
0 – 10	Dark gray brown sandy loam	Negative
10 - 25	Gray brown sandy loam, gravelly, few cobbles	Negative
Comments: Terminated due to compaction and glacial subsoil		
AH-16		
0 - 40	Gray brown gravelly sandy loam, few cobbles	Negative
40 – 55	Mottled dark brown and reddish-brown sandy loam (glacial)	Negative
Comments: Terminated due to glacial subsoil		
AH-17		
0 – 42	Gray brown sandy loam, gravelly, some cobbles	Negative
Comments: Plastic and colorless bottle glass observed at 10 cmbs. Terminated due to cobble impasse.		
AH-18		
0 – 30	Gray brown mixed with dark gray brown sandy loam, gravelly, cobbly	Negative
30 - 40	Pale gray brown sandy loam	Negative
Comments: Terminated due to cobble impasse		
AH-19		
0 - 12	Pale brown sandy loam, gravelly, cobbly	Negative
Comments: Terminate due to extraordinarily compaction		
AH-20		
0 - 13	Dark gray brown sandy loam, extremely compact	Negative
Comments: Terminated due to extreme compaction		

DEPTH BELOW SURFACE (CM)	SOIL DESCRIPTIONS	RESULTS
AH-21		
0 - 16	Brown sandy loam	Negative
16 - 22	Yellowish brown sandy loam, gravelly, some cobbles	Negative
Comments: Terminated due to cobble impasse		
JB1		
0 - 50	Light grayish brown sandy loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles, small to medium sized cobbles throughout, fine to medium roots common	Negative
Note: Probe terminated due to rock impasse		
JB2		
0 - 55	Grayish brown sandy loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles, small to medium sized cobbles throughout, fine to medium roots common	Negative
Note: Probe terminated due to rock impasse		
JB3		
0 - 46	Grayish brown sandy loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles, small to medium sized cobbles throughout, fine to medium roots common	Negative
Note: Probe terminated due to rock impasse		
JB4		
0 - 16	Dark brown loam, low compaction, low gravel content consisting of small to medium sized subrounded pebbles	Negative
16 - 30	Dark yellowish brown/variegated sand, coarse grain, high gravel content consisting of small to large sized subrounded and subangular pebbles, few small cobbles throughout, fine to medium roots common	Negative
30 - 40	Gray silty sand, reddish brown mottling throughout, high compaction, high gravel content consisting of small to medium sized subrounded pebbles	Negative
Note: Probe terminated due to rock impasse		
JB5		
0 - 25	Light grayish brown sandy loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles, small to medium sized cobbles throughout, fine to medium roots common	Negative
Note: Probe terminated due to boulder impasse		
JB6		
0 - 45	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
Note: Probe terminated due to compaction		
JB7		
0 - 38	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
Note: Probe terminated due to compaction		
JB8		
0 - 40	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
Note: Probe terminated due to compaction		

DEPTH BELOW SURFACE (CM)	SOIL DESCRIPTIONS	RESULTS
JB9		
0 - 35	Light grayish brown silty sand, very high compaction, very high gravel content consisting of small to large sized subrounded and angular pebbles, few fine roots throughout	Negative
Note: Probe terminated due to compaction		
JB10		
0 - 26	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
26 - 42	Gray silty sand, reddish brown mottling throughout, high compaction, high gravel content consisting of small to medium sized subrounded pebbles	Negative
Note: Probe terminated due to rock impasse		
JB11		
0 - 26	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
26 - 36	Gray silty sand, reddish brown mottling throughout, high compaction, high gravel content consisting of small to medium sized subrounded pebbles	Negative
Note: Probe terminated due to rock impasse		
JB12		
0 - 25	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
25 - 38	Gray silty sand, reddish brown mottling throughout, high compaction, high gravel content consisting of small to medium sized subrounded pebbles	Negative
Note: Probe terminated due to compaction		
JB13		
0 - 30	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
30 - 45	Gray silty sand, reddish brown mottling throughout, high compaction, high gravel content consisting of small to medium sized subrounded pebbles	Negative
Note: Probe terminated due to compaction		
JB14		
0 - 34	Dark grayish brown sand loam, high compaction, high gravel content consisting of small to medium sized subrounded and angular pebbles, small to medium sized cobbles throughout, fine roots common	Negative
34 - 44	Gray silty sand, reddish brown mottling throughout, high compaction, high gravel content consisting of small to medium sized subrounded pebbles	Negative
Note: Probe terminated due to compaction		
JB15		
0 - 38	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
Note: Probe terminated due to rock impasse		
JB16		
0 - 20	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
20 - 47	Light yellowish brown silty sand, coarse grain, very high compaction, very high gravel content consisting of small to large subrounded pebbles, small cobbles throughout	Negative
Note: Probe terminated due to rock impasse		

DEPTH BELOW SURFACE (CM)	SOIL DESCRIPTIONS	RESULTS
JB17		
0 - 35	Very dark gray sand loam, wet, low compaction, high gravel content consisting of small to large sized subrounded pebbles, small cobbles throughout	Negative
35 - 60	Light gray sandy silt, reddish brown mottling throughout, moderate compaction, very high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
Note: Probe terminated due to rock impasse		
JB18		
0 - 34	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
Note: Probe terminated due to rock impasse		
JB19		
0 - 41	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
Note: Probe terminated due to compaction		
JB20		
0 - 27	Grayish brown sand loam, very high compaction, high gravel content consisting of small to large sized subrounded pebbles	Negative
Note: Probe terminated due to compaction		
JB21		
0 - 35	Grayish brown sand loam, very high compaction, high gravel content consisting of small to large sized subrounded pebbles	Negative
Note: Probe terminated due to compaction		
JB22		
0 - 33	Grayish brown sand loam, very high compaction, high gravel content consisting of small to large sized subrounded pebbles	Negative
Note: Probe terminated due to compaction		
JB23		
0 - 24	Light grayish brown sand loam, fine, very high compaction, high gravel content consisting of small to large sized subrounded and angular pebbles	Negative
Note: Probe terminated due to compaction		
JB24		
0 - 84	Light gray silty sand, low compaction, moderate gravel content consisting of small to large sized subrounded pebbles, small to large sized cobbles throughout, fine roots common	Negative
Note: Probe terminated due to rock impasse		