FINAL—Archaeological Monitoring Plan for TMK: (1) 5-6-001:028 (por.), Mālaekahana Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

Prepared For:
John D’Amato and Kristina Inn

July 2016
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Prepared For:
John D’Amato and Kristina Inn

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MANAGEMENT SUMMARY

Archaeological monitoring will be conducted for TMK: (1) 5-6-001:028 (por.) in Mālaekahana Ahupua’a, Koʻolau District, on the Island of Oʻahu. A new septic system is proposed for the project parcel. The archaeological inventory survey (AIS) testing and the proposed ground disturbance involve three discontiguous zones totaling .066 ha (.163 ac.). Full time archaeological monitoring for all ground disturbance shall be carried out because the parcel soils are identified as Jaucas sand, which have a high potential for containing human burials.
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INTRODUCTION

At the request of John D’Amato and Kristina Inn (landowners), Keala Pono Archaeological Consulting has prepared an archaeological monitoring plan for TMK: (1) 5-6-001:028 (por.) in Mālaekahana Ahupua‘a, Koʻolauloa District, on the island of O‘ahu. A new septic system is proposed for the parcel.

This monitoring plan is designed to identify historic properties that might be exposed during construction, and to treat them properly, in accordance with the Hawaii Administrative Rules (HAR) §13-279 Governing Standards for Archaeological Monitoring Studies and Reports. An archaeological inventory survey (AIS) was completed for the project area, and no archaeological resources were identified (McElroy 2016). Nevertheless, archaeological monitoring shall be conducted for all ground disturbance because the parcel soils consist of Jaucas sands, which have a high potential for containing human burials.

This monitoring plan includes background information on the project area and an outline of field methods and post-field actions proposed for the archaeological monitoring. Hawaiian words, technical terms, and flora and fauna are defined in a glossary at the end of the document.

Project Location and Environment

The project parcel is located in Mālaekahana Ahupua‘a, Koʻolauloa District, on the island of O‘ahu (Figure 1). Mālaekahana stretches from the ocean to the Koʻolau Mountain Range, and is bounded by Keana Ahupua‘a to the north and Lāʻie to the south. The beach at Mālaekahana is a crescent-shaped bay, with Makahoa Point at the north end and Kalanai Point at the south. This southern point lies within Lāʻie Ahupua‘a, which also encompasses most of the Mālaekahana State Recreation Area.

Due to the potential of encountering burials, the landowner proposed, and SHPD concurred, that the project area be limited to the three locations where ground disturbance will occur during implementation of the new septic system project. These three locations comprising the project area total 0.66 ha (.163 ac.) within TMK: (1) 5-6-001:028 (Figure 2).

TMK: (1) 5-6-001:028 is a .4 ha (1 ac.) parcel owned by John D’Amato and Kristina Inn. This is a beachfront property, located approximately 200 m (.12 mi.) northwest of the Mālaekahana State Recreation Area. The property is bounded by the beach on the east, an unpaved road on the west, and private parcels on the north and south.

The closest stream to the parcel is Waiaipuka, which is roughly 500 m (.31 mi.) to the southwest. Waiaipuka is an intermittent stream, however, and the closest perennial stream is Kaukanalā‘au (also known as Mālaekahana Stream), which lies 1 km (.62 mi.) to the northwest of the project area. Rainfall averages 131 cm (51.5 in.) per year (Giambelluca et al. 2013). Vegetation within the area of study consists of landscaped grass.

Project area soils consist entirely of Jaucas sand, 0–15% slopes (JaC) (Figure 3). Jaucas series soils are “excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean” (Foote et al. 1972:48). This was a favored environment for human burial in traditional Hawai‘i.
Figure 1. Project area on a 7.5 minute USGS 1998 Kahuku quadrangle map.
Figure 2. Project area (in red) on a 1932 plat map for TMK: (1) 5-6-001.
Figure 3. Soils in and near the project parcel.
The Project

Construction for the project consists of installation of a new septic tank, leach field system, sewer drain line, and main service electric concrete masonry unit (CMU) outbuilding (Figure 4). The septic tank excavation will measure approximately 2.5 x 3.4 m (8.5 x 11.25 ft.) and will extend to 2 m (6.5 ft.) below the surface. The leach field excavation will measure approximately 10.7 x 3.1 m (35 x 10 ft.) and will extend .6 m (2 ft.) deep. The sewer drain excavation will be approximately 22.9 m (75 ft.) long, .3 m (1 ft.) wide and .5 m (1.5 ft.) deep. These excavations will take place within the largest and northernmost of the three project areas. The CMU outbuilding excavation will measure 1.1 x 1.1 m (3.5 x 3.5 ft.) and .5 m (1.5 ft.) deep. This will be located in the smallest, southernmost project area. Replacement of another existing septic tank may occur within the central project area. The exact dimensions for this excavation will be determined once the existing septic tank in this location is removed. All excavations will be contained within the three discontiguous project areas.
Figure 4. Proposed construction plans with the three project locations outlined in red.
BACKGROUND

A brief historic review of Mālaekahana is provided below, to offer a better holistic understanding of the use and occupation of the project area. In the attempt to record and preserve both the tangible (i.e., traditional and historic archaeological sites) and intangible (i.e., moʻolelo) culture, this research assists in the discussion of anticipated finds. Research was conducted at the Hawai‘i State Library, the SHPD library, and online on the Office of Hawaiian Affairs website and the Waihona Aina database. Archaeological reports and historical reference books were among the materials examined.

Place Names

The ahupuaʻa of Mālaekahana may have been named after Lāʻieikawai’s mother or the name of an image mentioned in the legend of Halemano (Pukui et al. 1976) (see Moʻolelo Section). Handy et al. (1991:462) provide the translation of the ahupuaʻa name as “Way-clear-for-work.” Mokuʻauia is the largest of five islets off the coast of Mālaekahana. Its name translates to “island to one side” (Pukui et al. 1976). The other islets are Kīhewamoku or Kahiwamoku; Pulemoku, which means “broken prayer;” Kukuihoʻolua, which means “oven-baked candlenut;” and Mokuālai, or “island standing in the way” (Pukui et al. 1976). It is said that the islets were formed as Kana and Niheu killed a moʻo and threw pieces of its body into the ocean. Mokuʻauia later got the name “Goat Island” for the goats that the Mormons moved there (Clark 1977:139). Makahoa is the prominent point on the Kahuku side of the ahupuaʻa. It translates to “friendly point” (Pukui et al. 1976). Kalanai is the point on the Lāʻie side of the ahupuaʻa, although no translation is given by Pukui et al. (1976). This is also known as Cooke’s Point, referring to the family that lived there in the early 1900s.

Traditional Land Use

Not much has been written regarding traditional land use in Mālaekahana compared to the larger ahupuaʻa in the vicinity such as Lāʻie and Kahuku. Handy et al. (1991:460) write that the northern ahupuaʻa of Oʻahu’s windward coast are less suitable for loʻi cultivation than places such as Kahana and Punaluʻu, suggesting that wetland agriculture was not a major practice in Mālaekahana. Handy does note (in Sterling and Summers 1978:154) that “there were terraces in this ahupuaʻa [Mālaekahana], irrigated by Kaukanalau Stream,” indicating that loʻi agriculture did occur there, though probably not on a large scale. He also states that “sweet potatoes were grown on the northwest coast from Keana to Laie” (Handy et al. 1940:75), and other dryland crops may have been cultivated in this environment as well. Handy et al. (1991:462) briefly describe Mālaekahana and the neighboring ahupuaʻa of Keana:

These two small ahupuaʻa intervening between Laʻie and Kahuku (the northernmost tip of Oahu) show much the same pattern, in miniature, of dune coasts, elevated coral, and broken level land seaward from the hills. Each has a small stream. There were formerly irrigated terraces in Malaekahana (Way-clear-for-work), but none in Keana (The-cave).

Ocean resources were plentiful in the ahupuaʻa. There are two reefs off of Mālaekahana known as Kō and Hāliʻi, where moi and limu are found in abundance (Clark 1977:138–139). These reefs would have been a location for fishing and collecting limu in the past, and shellfish was likely harvested from nearshore areas. There was also a fishpond in Mālaekahana:

Formerly a fishpond was located near the point [Makahoa] and was known as Waipunaea. There are traditions about the mullet coming to this point from Pearl Harbor…To this day schools of mullet come around the island to this northern point of Malaekahana. They go no farther, and their apparent disappearance still mystifies the Hawaiians. (McAllister 1933:155)
From this scant information, it can be surmised that the small ahupua‘a of Mālaekahana relied on both fishing and farming for subsistence in the pre-contact era (before the arrival of Westerners in 1778). There were lo‘i for the cultivation of wetland taro, but the population relied on dryland farming as well. Ocean resources such as fish and limu were abundant, and there was a fishpond on Mālaekahana’s shores.

**Moʻolelo**

The moʻolelo of Laniloa tells of the creation of the five islets off of Mālaekahana:

Laniloa is the name given to a point of land which extends into the ocean from Laie. In ancient times this point was a mo-o, standing upright, ready to kill the passerby.

After Kana and his brother had rescued their mother from Molokai and had taken her back to Hawaii, Kana set out on a journey around the islands to kill all the mo-o. In due time he reached Laie, where the mo-o was killing many people. Kana had no difficulty in destroying this monster. Taking its head, he cut it into five pieces and threw them into the sea, where they can be seen today as the five small islands lying off Mālaekahana: Malualai, Keauakaluapaa, Pulemoku, Mokuaniwa and Kihewamoku.

At the spot where Kana severed the head of the mo-o is a deep hole which even to this day has never been fathomed. (Rice 1923:112)

The epic romance of Lāʻieikawai features a pool in Mālaekahana known as Waiʻāpuka. Lāʻieikawai was a high chiefess, whose mother was named Mālaekahana. At the time of her birth Lāʻieikawai was hidden in a cave by Waka, her moʻo guardian. The subterranean cave could only be accessed by diving through the waters of Waiʻāpuka Pool. While Lāʻieikawai was kept in the cave, her twin sister Lāʻielohelohoe was taken to Kūkaniloko in Waialua. They were sequestered because the father of the twins had vowed to kill any baby girls that were born before a male heir. Lāʻieikawai was later betrayed by her guardian Waka and married a high chief. She went to live in the heavens with her husband, who betrayed her as well and was banished from that realm. Lāʻieikawai, however was reunited with her sister and revered as a goddess (Beckwith 1918:60–64; 1970:526).

In addition to being the name of Lāʻieikawai’s mother, Mālaekahana was also the name of a wooden image featured in the moʻolelo of Halemano (Fornander 1919:236–237). Halemano was from Waiʻanae and he fell in love with Kamalalawalu from Puna. Halemano’s sister was a sorceress and she advised him to build toys such as kites and carved figures for Kumukahi, the favorite brother of Kamalalawalu. The sorceress presented Kumukahi with the toys and in exchange, he persuaded Kamalalawalu to go with him to Oʻahu. Their canoe landed at Hauʻula, where Kumukahi saw the image named Mālaekahana. He liked the image so much that he stayed in Hauʻula. Halemano ended up marrying Kamalalawalu and they lived in Waialua, while Kumukahi returned home.

Manuwahi was a kahuna that lived in Mālaekahana. He was the keeper of the god of the same name as the ahupuaʻa. It is unclear if this is the same image named Mālaekahana that Kumukahi saw in Hauʻula. McAllister (1933:156) offers further information on Manuwahi and the battles fought at Mālaekahana:

The Hawaiians are still proud that the district of Mālaekahana was never conquered by Kamehameha I. This is not recorded in Hawaiian history so far as I know. It may have been considered too insignificant a matter, or, as Dr. C.M. Cooke Jr., suggests, an earlier moi [mōʻī] of Oahu may have been able to wrest Mālaekahana from Manuwahi, and he may at present be confused with Kamehameha. The legend collected by Rice (70, p. 113) tells the story of Kamehameha’s sending out Kahalau, who was unable to subdue Manuwahi because this powerful kahuna was aided in battle by the gods. After the battle, Kahalau joined forces with Manuwahi and is still spoken of by the older natives as the chief who
revolted against Kamehameha. Many skeletons were unearthed in plowing the cane fields of this region and in digging the foundations for the beach houses, indicative, some think, of many battles in the region.

Another moʻolelo of the area tells of Mano-niho-kahi, or “Shark-with-one-tooth” (Rice 1923:111). He was a man that could transform into a shark, and he lived in Mālaekahana. The shark-man would go out to sea and bite and kill women that were fishing. In human form, Mano-niho-kahi still retained a shark’s mouth on his back, but he concealed it with a covering of kapa. To expose him, the chief of the area ordered everyone to gather together and remove their clothing. When Mano-niho-kahi refused, they pulled off his kapa and his shark’s mouth was revealed. He was killed and the women of Mālaekahana were now safe.

The Early Historic Period

Several of the early historic expeditions to Hawaiʻi passed by O‘ahu’s north shore, beginning with the HMS Resolution in 1779. This early voyage described a landscape rich with vegetation, fertile valleys, and large villages (Beaglehole 1967). By 1794, however, the area was said to be sparsely inhabited and not flourishing (Vancouver 1798). Whereas Mālaekahana was not specifically mentioned, this ahupua’a was likely in a similar state as the surrounding area. Mālaekahana is cited by name in 1828, when the missionary Levi Chamberlain traveled there to inspect O‘ahu’s schools. Chamberlain (1956:35) was “pleased with the appearance of the scholars.”

Māhele Land Tenure

The change in the traditional land tenure system in Hawaiʻi began with the appointment of the Board of Commissioners to Quiet Land Titles by Kamehameha III in 1845. The Great Māhele took place during the first few months of 1848 when Kamehameha III and more than 240 of his chiefs worked out their interests in the lands of the Kingdom. This division of land was recorded in the Māhele Book. The King retained roughly a million acres as his own as Crown Lands, while approximately a million and a half acres were designated as Government Lands. The Konohiki Awards amounted to about a million and a half acres, however title was not awarded until the konohiki presented the claim before the Land Commission.

In the fall of 1850 legislation was passed allowing citizens to present claims before the Land Commission for parcels that they were cultivating within the Crown, Government, or Konohiki lands. By 1855 the Land Commission had made visits to all of the islands and had received testimony for about 12,000 land claims. This testimony is recorded in 50 volumes that have since been rendered on microfilm. Ultimately between 9,000 and 11,000 kuleana land claims were awarded to kamaʻāina totaling only about 30,000 acres and recorded in ten large volumes.

Most of Mālaekahana Ahupua’a was awarded to Analea Keohokālole during the Māhele. A total of 3,280 ac. were given to Keohokālole, who was the matriarch of a powerful line of ali‘i, including King Kalākaua and Queen Liliʻuokalani. Much of this land would later fall into the hands of the Campbell Estate. They are less than 1 ac. each and none are near the project area. Testimony for these claims mention ʻuala, maiʻa, wauke, and house lots.

Historic Maps

Historic maps help to paint a picture of Mālaekahana in times past and illustrate the changes that have taken place in the region over the years. The earliest map found for this area is dated 1881 (Figure 5). The map shows the entire island of O‘ahu so it does not include much detail. “Laiekawai
Figure 5. Portion of an 1881 map of Oʻahu (Alexander et al. 1881).
“Water hole” is labeled in Mālaekahana, and just mauka of that is “275 acres to Kahuku Ranch.” The islets off the coast are named, and the area around Lāʻie Point reads “Dangerous Entrance.”

The next map is of the Lāʻie Bay area and dates to 1884 (Figure 6). Again, the islets are named, and the area offshore is labeled “Dangerous rocky Bay Should never be approached.” Laieikawai is labeled, as well as the “Road to Kahuku.” Just mauka of the road, near the stream and nestled in hills are “Gentile Houses.” Mālaekahana is labeled as “Level grass land. Two boat houses are illustrated along the coast in Lāʻie, although no structures are shown on Mālaekahana’s coast.

An aerial photo mosaic from 1928 shows that Mālaekahana is still very rural (Figure 7). The highway is in place, although there are no houses along the beach. Much of Mālaekahana appears to be open fields/pastures or in sugarcane cultivation.

A 1933 map shows the start of development in the project area (Figure 8). A boat house, bath house, and “green roof house” are pictured where Mālaekahana State Recreation area is today. Near the project area is a structure labeled “C.H. Cook green roof.” A little to the west is “end of fence” and “grass covered sand dunes.” Farther along Mālaekahana Bay is a 30 ft. water tank and several other structures. From south to north they are labeled as: “Jas. A. Kennedy black roof,” “14’ water tank,” “Henry C.A. Mead black roof,” “Burton Newcomb peaked roof,” and “E.L. Castle yellow house black roof.”

Mid-to Late-Historic Land Use

By 1863, Englishman Charles Gordon Hopkins owned large tracts of land in Mālaekahana and the neighboring ahupua’a. He established the Kahuku Ranch, and the area was soon overrun by sheep and cattle, which quickly destroyed the native vegetation. The ranch was later renamed Kahuku and Mālaekahana Ranch, and by 1876 it was in the hands of James Campbell. An article from this year details the transfer:

> It includes 25,000 acres in fee simple, and large tracts of mountain land under long leases, with $34,000 worth of livestock, including 3,000 head of cattle, with the choice band of merino sheep and horses now on it. It is unquestionably the best stock ranch of these islands, and it has been brought to a high state of perfection under the management of the late proprietors, who divided the plain into ten or twelve large paddocks, walled with heavy stone walls. It stretches from Laie to Waimea, a distance of thirteen miles, and those who have ever visited it must have admired its lovely green pastures of manenie grass so fattening to stock. It is the intention of Mr. Campbell to increase his band of sheep to 30,000 of the choicest breed. The price paid is a handsome one, securing to its present proprietor the most desirable ranch of the Islands, and to Mr. Richardson a comfortable fortune, the result in part of his industry and good management, and in part of the Reciprocity Treaty, the first fruit from which he has been so fortunate as to reap. (*Hawaiian Gazette* 1876:3:2)

In 1889, Campbell leased the ranch to B.F. Dillingham and it remained in business until the mid-1900s. At this time the Kahuku Sugar Company was established, and soon at least 150 acres of sugarcane fields extended into Mālaekahana. By 1899 the Oahu Railway extended its track to Kahuku, linking the sugar mill with Honolulu, via Kaʻena Point. By 1903 the railway crossed through Mālaekahana and continued to Lāʻie. This rail line would eventually be extended all the way to Kahana Bay. In 1916, some of the Kahuku sugarcane lands were leased for pineapple cultivation, although this was not a major enterprise. Sugarcane was grown in the area until 1968, and the railroad continued its Kahuku operations until 1972 (*Wilcox 1975:37*).
Figure 6. Portion of an 1884 map of Lāʻie Bay (Jackson 1884).
Figure 7. Portion of a 1928 aerial photo mosaic of Lā‘ie (UH SOEST 1928).
Figure 8. Portion of a 1933 map of Kahuku Point to Lāʻie (Paton 1933).
By 1954 Kamehameha Highway was already in place and scattered houses can be seen near the project area (Figure 9). At that time, the offshore islets are labeled as bird refuges, but the Mālaekahana State Recreation Area is not labeled, suggesting that it was not established yet. The roads leading into the recreation area are in place, however, and there are a few structures in the area. The plantation railroad can still be seen to the northwest of the project area. A 1965 map also shows the highway and bird refuges, but many more homes are now depicted near the project area (Figure 10). The plantation railroad is no longer illustrated on the 1965 map. The Malaekahana State Recreation Area is not shown on maps until 1983 (USGS 1983).

**Previous Archaeology**

Several archaeological studies have been conducted in Mālaekahana. The following discussion provides information on archaeological investigations that have been carried out within approximately 1 km of the project area, based on reports found in the SHPD library in Kapolei, Hawai‘i (Figure 11, Table 1). State Inventory of Historic Places (SIHP) site numbers are prefixed by 50-80-02 (Figure 12).

The earliest archaeological work in Mālaekahana comes from McAllister’s (1933) islandwide survey. McAllister recorded four sites in the ahupua‘a. Site 272 is a ko‘a located at Makahoa Point. At the time of his study, only a few rocks remained of the site. McAllister notes that there was once a fishpond near this location, and mullet still return to the area (1933:155). Site 273 is the house foundation of the kahuna Manuwahi, who was the “keeper of the god at Malaekahana” (McAllister 1933:155). It is located in the current Mālaekahana State Recreational Area. Again, only a few rocks remained of the site during the time of McAllister’s study. Site 274 is a ko‘a called Kalanai, in the Lāʻie portion of Mālaekahana State Recreation Area. Kala and enenu were the fish offered at Kalanai, and in addition to fish remains, McAllister noted a human burial .6 m (2 ft.) below the surface (1933:156). Site 275 is Waiʻāpuka Pool, located inland from Kamehameha Highway, in what was a sugarcane field during McAllister’s survey. The pool is a noted location in the moʻolelo of Lāʻieikawai, where Waka hid Lāʻieikawai until she was grown. Local residents informed McAllister that there was once an underwater entrance in the pool that led to a hidden chamber, but the pool had been silted in during the 25 or so years prior to McAllister’s visit (1933:157).

Between 1977 and 1990, archaeological work was conducted at Mālaekahana State Recreation Area in a sand dune system. In 1977, a short report was generated for the soils analysis in which the stratigraphy of two cultural layers was delineated (Hammatt 1977). A later report provided more details on the work, and human burials and a ko‘a were documented at Kalanai Point (Yent and Estioko-Griffin 1980). Site 2801 was designated to cover the entire area between Kamehameha Highway, the ocean, and Kahawainui Stream, and includes at least three cultural layers and the ko‘a. The site was thought to have been occupied during three distinct periods that occurred between AD 1600 and 1780 (Yent and Estioko-Griffin 1980:xxii). Material remains included infilled postholes, firepits, midden, animal bone, as well as fishing gear and other subsistence-related artifacts. The human remains were a child and an infant that were found adjacent to the ko‘a. Volcanic glass flakes from the site were dated to the mid-1600s (Olson 1979). Further work was conducted at one of the cultural layers with auger coring (Yent and Ota 1982). This layer was found mostly near the mouth of Mālaekahana Stream. Several years later, two more rounds of auger coring were conducted at the State Recreation Area. They yielded no findings (Griffin and Yent 1986; Smith 1990).

A reconnaissance survey was completed in 1984 for a well site in upland Mālaekahana (Barrera 1984). While no archaeological resources were found within the well site project area, a traditional agricultural complex was noted on the opposite side of Mālaekahana Stream. This consisted of a system of terraces, an ‘auwai, and a substantial rock wall. A concrete structure was also observed.
Figure 9. Portion of a 1954 USGS Kahuku quadrangle (USGS 1954).
Figure 10. Portion of a 1965 USGS Kahuku quadrangle (USGS 1965).
Figure 11. Location of previous archaeological studies in the vicinity of the project area.
Figure 12. Location of recorded archaeological sites in the vicinity of the project area.
<table>
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<tr>
<th>Author and Year</th>
<th>Location</th>
<th>Type of Study</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>McAllister 1933</td>
<td>Mālaekahana</td>
<td>Survey</td>
<td>Recorded four sites: two koʻa, a house foundation, and a pool.</td>
</tr>
<tr>
<td>Hammatt 1977</td>
<td>Mālaekahana State Recreation Area</td>
<td>Soil Analysis</td>
<td>Documented two cultural layers.</td>
</tr>
<tr>
<td>Olson 1979</td>
<td>Mālaekahana State Recreation Area</td>
<td>Volcanic Glass Analysis</td>
<td>Volcanic glass flakes dated to the mid-17th century.</td>
</tr>
<tr>
<td>Yent and Estioko-Griffin 1980</td>
<td>Mālaekahana State Recreation Area</td>
<td>Mapping and Excavation</td>
<td>Recorded Site 2801, which includes the two previously recorded cultural layers, a koʻa, and two human burials.</td>
</tr>
<tr>
<td>Yent and Ota 1982</td>
<td>Mālaekahana State Recreation Area</td>
<td>Subsurface Testing</td>
<td>Further documented the Site 2801 cultural layer.</td>
</tr>
<tr>
<td>Barrera 1984</td>
<td>Upland Mālaekahana</td>
<td>Reconnaissance</td>
<td>Noted an agricultural complex outside of the project area.</td>
</tr>
<tr>
<td>Griffin and Yent 1986</td>
<td>Mālaekahana State Recreation Area</td>
<td>Subsurface Testing</td>
<td>None.</td>
</tr>
<tr>
<td>Jensen 1989</td>
<td>Upland Mālaekahana and Punamanō</td>
<td>Reconnaissance</td>
<td>Identified six sites in Mālaekahana: 4088–4093, consisting of habitation, agricultural, and a possible burial site.</td>
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<tr>
<td>Kennedy 1989</td>
<td>Upland Mālaekahana</td>
<td>Inventory Survey</td>
<td>Recorded 19 sites including traditional habitation and agricultural sites, and a historic gun emplacement and railroad bed.</td>
</tr>
<tr>
<td>Kennedy 1990</td>
<td>Upland Mālaekahana</td>
<td>Assessment</td>
<td>Reevaluated the sites recorded by Jensen (1989).</td>
</tr>
<tr>
<td>Smith 1990</td>
<td>Mālaekahana State Recreation Area</td>
<td>Subsurface Testing</td>
<td>None.</td>
</tr>
<tr>
<td>Hammatt 1996</td>
<td>Upland Mālaekahana</td>
<td>Reconnaissance</td>
<td>None.</td>
</tr>
<tr>
<td>Monahan 2005</td>
<td>Mauka of Kamehameha Hwy.</td>
<td>Inventory Survey</td>
<td>Documented 44 sites in Mālaekahana, the majority of which are historic sites relating to the sugarcane industry.</td>
</tr>
<tr>
<td>Yucha et al. 2016</td>
<td>Near Makahoa Point to Kahuku</td>
<td>Inventory Survey</td>
<td>No findings in Mālaekahana.</td>
</tr>
<tr>
<td>McElroy 2016</td>
<td>Current Project Area</td>
<td>Inventory Survey</td>
<td>None.</td>
</tr>
</tbody>
</table>
A reconnaissance of upland Mālaekahana identified six sites, while another 20 sites were recorded in Punamanō (Jensen 1989). Punamanō is a swamp and spring located to the northwest of Kahuku; as this is far away from the project area, the Punamanō findings will not be discussed further. The Mālaekahana sites were assigned numbers 4088–4093. Three of these are overhang habitations, two are cave habitations, one is an agricultural ditch and tunnel, and one is a platform that may be a human burial. The sites were later reevaluated by Kennedy (1990), although there were no significant new findings in Mālaekahana.

Another upland survey of Mālaekahana recorded an additional 19 sites (Kennedy 1989). The sites consisted of traditional habitation and agricultural areas, as well as a historic gun emplacement and railroad bed. SIHP numbers were not assigned at that time. The sites were later examined during a 2005 archaeological inventory survey and site numbers were designated, although the sites found in 2005 could not be positively correlated with those identified in 1989 (Monahan 2005:24, see discussion below).

A human burial was found in 1993 at Makahoa Point (Dagher 1993). The burial was designated as Site 4665. It was exposed during high surf and was in poor condition. One unidentified metal historic artifact was possibly associated with the remains.

Another human burial was encountered at Makahoa Point the following year (Jourdane 1994). The remains were partially exposed in the sand and were thought to represent a single individual. They were designated as Site 4821.

A reconnaissance survey was conducted for a proposed well site in upland Mālaekahana (Hammatt 1996). There were no archaeological findings, as the area showed evidence of disturbance by bulldozing.

An archaeological inventory survey in 2005 recorded 43 sites in Mālaekahana (Monahan 2005). The sites are located mauka of Kamehameha Highway and mostly consist of historic-era remains of the sugarcane industry. They were designated as SIHP 6673–6815. Traditional sites include rockshelters, habitation or agricultural sites, a cultural layer, and Waiʻāpuka Pool. Two human burials were also recorded. Radiocarbon dates ranged from the 14th century AD to the 17th century (Monahan 2005:ii). Some of the sites are thought to have been previously identified by Kennedy (1989), although this could not be conclusively determined:

For a variety of reasons—including the fact that this previous work [Kennedy 1989] was conducted over 15 years ago, it was not possible to confidently associate features and sites identified in the field with written descriptions in Kennedy (1989)…Without belaboring the point, in short, Kennedy’s (1989) report served as a guide for expected sites in the current project area, but it could not be used to locate, in a meaningful, one-to-one way, any given site. (Monahan 2005:24)

A recent archaeological inventory survey spanned from near Makahoa Point to Kahuku (Yucha et al. 2016). There were no findings in Mālaekahana.

An archaeological inventory survey was conducted for the current project (McElroy 2016). Excavation of four test trenches did not yield any evidence of subsurface archaeological deposits or features. The only findings were a few glass, metal, and plastic items, as well as charcoal, all of which are likely modern.
Summary and Settlement Patterns

Archival records and previous archaeological research indicate that the earliest settlement at Mālaekahana was probably “on or behind the dune system which places them at least 30 meters (100 feet) back from the shoreline” (Yent and Estioko-Griffin 1980:416). Early habitation of the area was likely based on marine subsistence, as Mālaekahana is teeming with marine resources such as fish, shellfish, and limu. Taro was grown along the streams, and sweet potato and other crops were cultivated in the drier areas. Domestic animals may have been kept as well. The Mālaekahana coast was also used for human burial, and for ritual, as evidenced by koʻa.

Later in time there was a greater reliance on agriculture and domestic animals, however marine resources continued to be utilized. It is likely that settlement and agriculture expanded inland, as this was the case in other parts of Oʻahu.

Mālaekahana grew into a ranching district in the historic era, with sugarcane and pineapple fields also a new feature of the landscape. The precursor of Kamehameha Highway was in place to transport people and goods around the island, and a railroad was also constructed to haul sugarcane from the north shore mills to Honolulu. Today, Mālaekahana is still used for ranching, and it is also known for the State Recreation Area on the south side of the bay.

Archaeological Implications and Anticipated Finds

Previous research has identified a wide range of activities that were carried out traditionally and historically in Mālaekahana, including agriculture, habitation, ritual, and human burial. Evidence for these kinds of activities may be found within the project area. Previous archaeological research has in fact identified several burials not far from the area of study, at the Mālaekahana State Recreation Area. Historic-era archaeological resources might be associated with historic habitation or agriculture, considering that there were early 20th century houses and sugarcane fields nearby. Archaeological inventory survey on the parcel did not yield any remains on the surface because the project area is landscaped. Although subsurface remains were not found during the inventory survey, they may in fact be identified during archaeological monitoring. These may consist of buried walls, pavements, fire pits, agricultural deposits, traditional or historic artifacts, or human burials.
PROJECT DESIGN

Archaeological monitoring will be conducted for all ground disturbing activity during construction of the new septic system on TMK: (1) 5-6-001:028 (por.). This may include but is not limited to excavations for new septic tank, leach field system, sewer drain line, and main service electric CMU outbuilding.

Project Personnel

A senior archaeologist, qualified under Hawai‘i Administrative Rules (HAR) §13-281 will serve as principal investigator for the project. The principal investigator will be responsible for overall project organization and management, will ensure high standards for field sampling and laboratory analyses, may conduct field visits and direct supervision of field personnel as appropriate, and will review the content of the monitoring report. The archaeological monitor will have sufficient fieldwork experience in Hawai‘i or have completed sufficient college-level coursework in Anthropology and Hawaiian Archaeology. If archaeological remains are identified, the monitor has the authority to halt ground disturbing activities in the immediate area of the find.

Fieldwork

Prior to fieldwork, the archaeological monitor and/or principal investigator will meet with the construction team to discuss the monitoring plan. The archaeologist will ensure that the construction team understands the purpose of the monitoring and that the monitor has the authority to halt construction activity.

Field recording and sampling may include, but are not limited to, the drawing of stratigraphic profiles, photography, and controlled excavation of exposed features. Accurate map locations of test units, stratigraphic profiles, and archaeological features, deposits, and artifacts will be maintained. Field recording and sampling are intended to mitigate any potentially adverse effects to historic properties. Standards of documentation, recording, and analysis shall accord with HAR §13-279.

If human remains are discovered during monitoring, work in the vicinity of the remains will cease and the archaeological monitor will protect any exposed bones, secure the area, and notify SHPD, the police, and the Medical Examiner. No further work will take place in the immediate vicinity, although work in other areas of the project site may continue. In the event of inadvertent discovery of non-burial historic properties, the SHPD shall be consulted concerning appropriate mitigation measures. Any inadvertent discovery of burial historic properties will follow procedures as indicated in HAR §13-300-40 and HRS Chapter 6E-43 and SHPD directives. All burial material will be addressed as directed by the SHPD/Department of Land and Natural Resources (DLNR).

Post-Field Actions

The nature and scope of post-field actions will vary according to the results of the fieldwork. At minimum, if no archaeological remains are discovered, a report documenting the negative findings will be produced and submitted to the SHPD. If archaeological remains are discovered, appropriate analyses will be conducted and reported.

Laboratory analyses of cultural material and sediments will be conducted in accordance with HAR §13-279 and will follow the SHPD Rules Governing Standards for Archaeological Monitoring Studies and Reports (§ 13-279-4). The specific procedures employed in laboratory analysis will vary according to the kinds of remains that are recovered. For example, artifacts will be measured,
weighed, sketched or photographed, and identified as appropriate. Faunal material will be weighed, counted, and taxonomically identified to the highest level of detail possible.

Materials not associated with human burials will be temporarily stored at the contracted archeologist’s facility until an appropriate curation facility is selected, in consultation with the landowner and SHPD. Any departure from these provisions will be in consultation with and written concurrence from SHPD.

Preparation of a final report shall conform to HAR §13-279. Photographs of excavations will be included in the monitoring report even if no historically-significant sites are documented. A draft monitoring report shall be prepared and submitted to SHPD in a timely manner, within four months following the end of fieldwork. A revised final report will be submitted within one month following receipt of review comments on the draft report. Should burials and/or human remains be identified, other letters, memos, and/or reports may be required.
SUMMARY AND CONCLUSION

In summary, archaeological monitoring will be conducted for TMK: (1) 5-6-001:028 (por.) in Mālaekahana Ahupuaʻa, Koʻolauloa District, on the Island of Oʻahu. A new septic system is proposed for the project area, which consists of three discontiguous zones totaling .066 ha (.163 ac.). Ground disturbance to be monitored includes but is not limited to excavations for a new septic tank, leach field system, sewer drain line, and a small CMU outbuilding.

An archaeological inventory survey of the project area yielded no findings (McElroy 2016), however the parcel is a beachfront property with Jaucas sand substrates. Archaeological monitoring shall be conducted as Jaucas sands have a high potential for containing human burials. This archaeological monitoring plan sets forth standards and provisions for monitoring during construction of the septic system. If human remains are discovered during monitoring, work in the vicinity of the remains will cease and the archaeological monitor will protect any exposed bones, secure the area, and notify the proper authorities. Treatment shall be in accordance with HAR §13-300-40, HRS Chapter 6E-43, and SHPD directives. No further work will take place in the immediate vicinity, although work in other areas of the project site may continue. In the event of inadvertent discovery of non-burial historic properties, the SHPD shall be consulted concerning appropriate mitigation measures.
ahupua‘a - Traditional Hawaiian land division usually extending from the uplands to the sea.
ali‘i - Chief, chiefess, monarch.
‘auwai - Ditch, Often for irrigated agriculture.
enenue - Var. of nenue, the chub, rudder, or pilot fish (Kyphosus bigibbus, K. vaigiensis).
kahuna - An expert in any profession, often referring to a priest, sorcerer, or magician.
kala - The surgeonfish or unicorn fish, Teuthidae.
kapa - Tapa cloth.
ko’a - Fishing shrine.
konohiki - The overseer of an ahupua‘a ranked below a chief; land or fishing rights under control of the konohiki; such rights are sometimes called konohiki rights.
kuleana - Right, title, property, portion, responsibility, jurisdiction, authority, interest, claim, ownership.
limu - Refers to all sea plants, such as algae and edible seaweed.
lo‘i, lo‘i kalo - An irrigated terrace or set of terraces for the cultivation of taro.
Māhele - The 1848 division of land.
mai’a - The banana, or Musa sp, whose fruit was eaten and leaves used traditionally as a wrapping for cooking food in earth ovens.
mānienie - Cynodon dactylon, or Bermuda grass, often used in lawns.
mauka - Inland, upland, toward the mountain.
midden - A heap or stratum of refuse normally found on the site of an ancient settlement. In Hawai‘i, the term generally refers to food remains, whether or not they appear as a heap or stratum.
mō‘ī - King.
moi - The threadfish Polydactylus sexfilis, a highly prized food item.
mo‘o - Lizard, dragon, water spirit.
mo‘olelo - A story, myth, history, tradition, legend, or record.
‘uala - The sweet potato, or Ipomoea batatas, a Polynesian introduction.
wauke - The paper mulberry, or Broussonetia papyrifera, which was made into tapa cloth in traditional Hawai‘i.
REFERENCES

1881 Oahu Hawaiian Islands. Scale 1:60,000.

Barrera, W.M., Jr.  

Beaglehole, J.C. (Ed.)  

Beckwith, M.  


Chamberlain, L.  

Clark, J.R.K.  

Dagher, C.  
1993 Inadvertent Discovery of a Human Burial At Makahoa Point, Malaekahana, Ko‘olauloa, O‘ahu. State Historic Preservation Division, Kapolei, Hawai‘i.

Foote, D., E. Hill, S. Nakamura, and F. Stephens  
1972 Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. United States Department of Agriculture, Soil Conservation Service. Published in cooperation with the University of Hawaii Agricultural Experiment Station, Washington, D.C.

Fornander, A.  


Griffin, A. and M. Yent  
1986 Auger Coring at Malaekahana State Park, Phase II. Department of Land and Natural Resources, Division of State Parks, Honolulu.

Hammatt, H.H.  

Handy, E.S.C.

Handy, E.S.C., E.G. Handy, and M.K. Pukui

Hawaiian Gazette
1876 Untitled Article, 4 October (3):2.

Jackson, G.E.
1884 Laie Bay Oahu Hawaiian Government Survey. Register Map 1347. Scale 1:6,000.

Jensen, P.M.
1989 Archaeological Inventory Survey, Punamano and Malaekahana Golf Courses, Lands of Ulupehupehu, Punalau, Kahu, Malaekahana, and Laie, Koolauloa District, Island of Oahu. Paul H. Rosendahl, Ph.D., Inc. Hilo, Hawai‘i.

Jourdane, E.

Kennedy, J.


McAllister, J.G.

McElroy, W.K.
2016 Archaeological Assessment for TMK: (1) 5-6-001:028 (por.), Mālaekahana Ahupua‘a, Ko‘olauloa District, Island of O‘ahu, Hawai‘i. Keala Pono Archaeological Consulting, Kāne‘ohe, Hawai‘i.

Monahan, C.

Olson, L.G.
Paton, H.A.
1933 *Kahuku Point to Laie N.E. Coast of Oahu Hawaiian Is.* Topographic Survey No. 4755. Scale 1:5,000.


Rice, W.H.

Smith, M.
1990 *Subsurface Testing At Malaekahana State Recreation Area, Phase I, Sewer And Water Improvements (Job No. 85-OP-F2), La‘ie And Malaekahana, O‘ahu.* Department of Land and Natural Resources, Division of State Parks, Honolulu.

Sterling, E.P. and C.C. Summers

UH SOEST (University of Hawai‘i School of Ocean and Earth Science Technology)

USGS (United States Geological Survey)
1954 Kahuku USGS 7.5-Minute Series Topographic Quadrangle. USGS Information Services, Denver, Colorado.
1965 Kahuku USGS 7.5-Minute Series Topographic Quadrangle. USGS Information Services, Denver, Colorado.
1983 Kahuku USGS 7.5-Minute Series Topographic Quadrangle. USGS Information Services, Denver, Colorado.

Vancouver, G.

Wilcox, B.S.

Yent, M. and A.E. Estioko-Griffin
1980 *Archaeological Investigations at Malaekahana (50-80-02-2801), Windward Oahu.* Department of Land and Natural Resources, Division of State Parks, Honolulu.

Yent, M. and J. Ota

Yucha, T.M., S.A. Belluomini, and H.H. Hammatt