APPENDIX

F

ARCHAEOLOGICAL ASSESSMENT REPORT

SCS Project Number 1902 AA-2

AN ARCHAEOLOGICAL ASSESSMENT FOR THE CENTRAL MAUI LANDFILL EXPANSION PROJECT

WAILUKU AHUPUA'A
WAILUKU DISTRICT
MAUI ISLAND
HAWAI'I

TMK: (2) 3-8-003:019 por.

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August 2016
Revised October 2017
DRAFT

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INTRODUCTION

Scientific Consultant Services, Inc. (SCS) conducted archaeological inventory survey on a 40-acre, parcel for proposed expansion of the existing Central Maui Landfill facility by the County of Maui, Department of Environmental Management, Solid Waste Division. The project area is located in Wailuku Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-8-003:019 por.] (Figures 1 and 2). The project area occurs adjacent to the existing Central Maui Landfill facility. During fieldwork, full pedestrian survey was undertaken of the entire 40-acres and thirty stratigraphic trenches (ST-1 through ST-30) were mechanically excavated.

The project area itself has undergone extensive alteration due to sugar cane cultivation as well as private construction activities. Based on the results of previous archaeological studies, the most likely historic sites in the project area would be those associated with plantation agriculture, such the historic ditches recorded by Fredericksen and Fredericksen (1988).

SCS Archaeologists Nicole Andricci, B.A. and Ian Bassford, B.A. conducted fieldwork from June 6, 2016 through June 9th, 2016 under the direct supervision of Michael F. Dega, Ph.D., Principal Investigator. The purpose of the archaeological investigation was to identify and document all archaeological historic properties within the project area and to gather sufficient information to evaluate the significance of each historic property in accordance criteria established for the Hawai'i State Register of Historic Places (HAR§13-275-6).

This report is prepared as an archaeological assessment (AA), pursuant to HAR §13-276-5(a)/13-284-5(b)(5)(A) as no historic properties were recorded during fieldwork or noted during the course of background research within the project area.

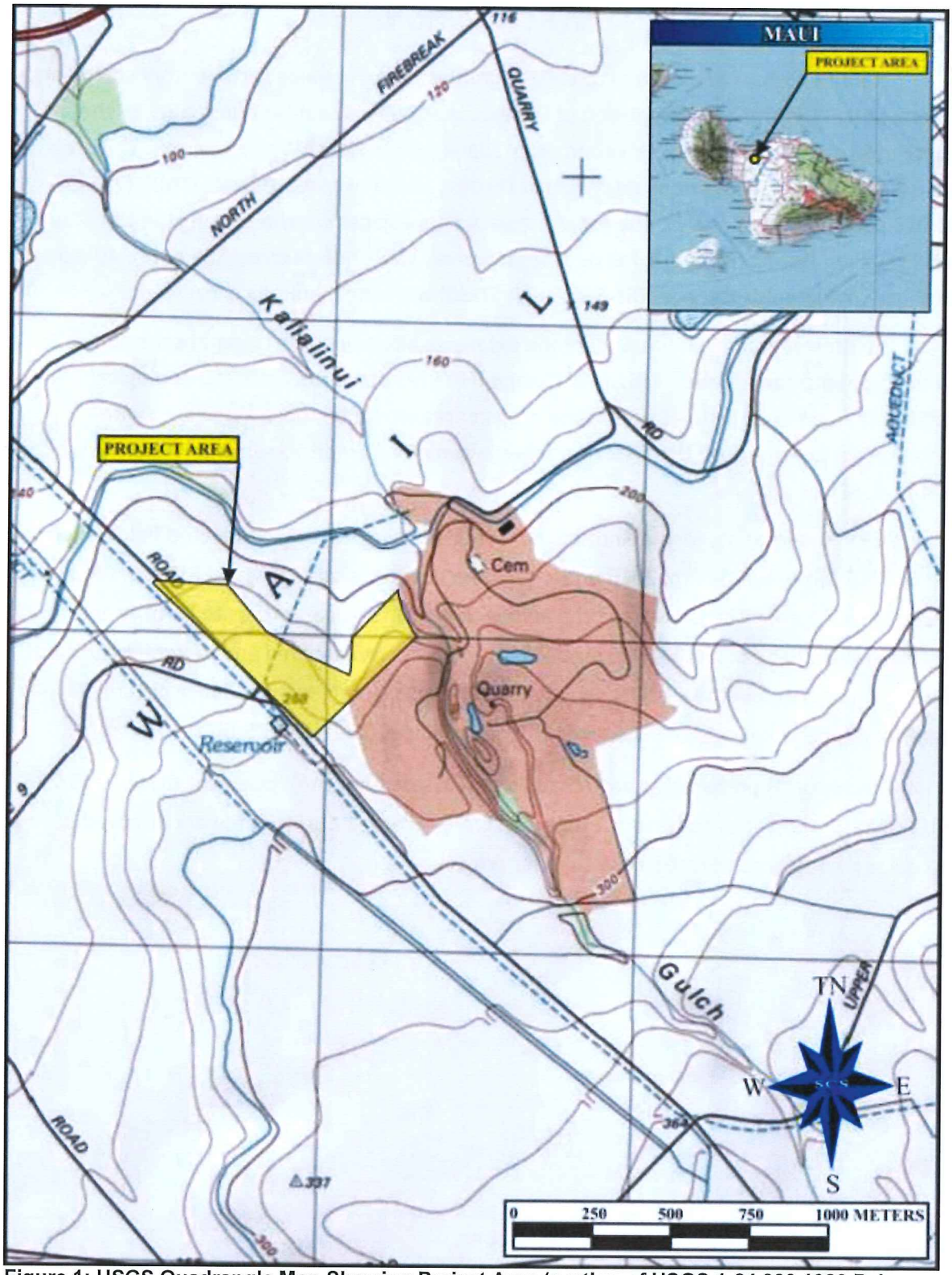

Figure 1: USGS Quadrangle Map Showing Project Area (portion of USGS 1:24,000 1983 Paia quadrangle).

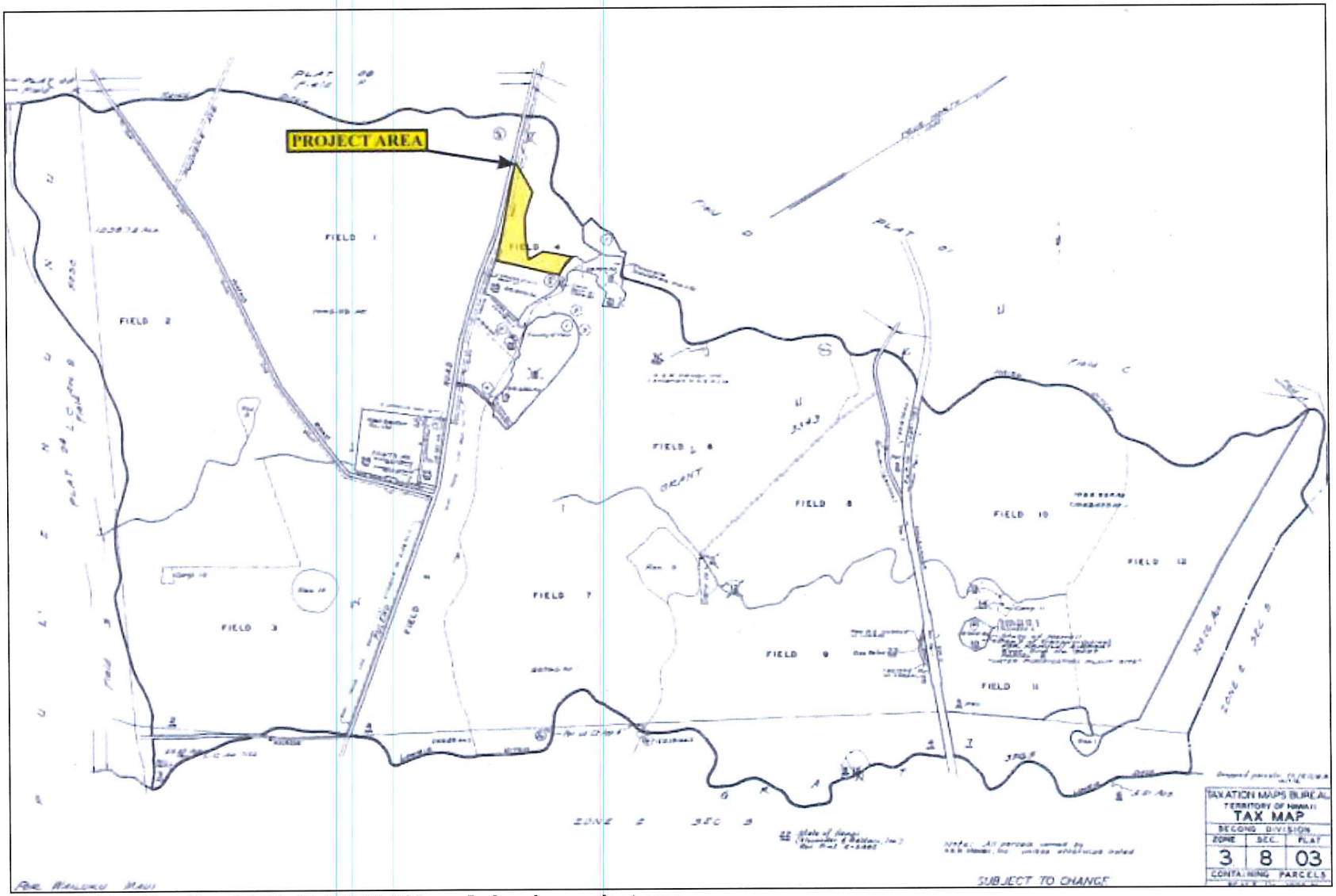

Figure 2: Tax Map Key [TMK: (2) 3-8-03:019 por.] showing project area.

ENVIRONMENTAL SETTING

The project area consists of a vacant 40-acre property previously in sugar cane cultivation and located in lower Pu'unēnē, Wailuku Ahupua'a, Wailuku District located adjacent to the existing Central Maui Landfill facility on Pulehu Road. The project area is bounded by Pulehu Road to the southwest, the existing Central Maui Landfill facility to the east, and Kalialinui gulch to the north.

RAINFALL

The area has low precipitation, with the general Pu'unēnē area receiving less than seventeen inches of rainfall per year (Giambellucca *et al*. 2013).

SOILS

Soils in the project area include the Molokai Series, which consists of Molokai silty clay loam on 3 to 7 percent slopes (MuB; 19% of the project area), and the Waiakoa Series, composed of silty clay loam on 3 to 7 percent slopes (WeB; 45%) and on 7 to 15 percent slopes (WeC; 35%). Figure 3 shows the distribution of these soils within the project area.

The Molokai Series consists of well-drained soils on uplands formed in material weathered from basic igneous rock. They are nearly level to moderately steep. This soil is associated with sugar cane, pineapple, pasture, wildlife habitat, and home sites. A representative profile for MuB includes a surface layer of dark reddish-brown silty clay loam about 15 in thick, dark reddish-brown silty clay loam subsoil that has prismatic structure, about 57 in thick, and a substratum comprised of soft, weathered rock. Permeability is moderate, runoff is slow, and the erosion hazard is slight to moderate. These soils are used for sugar cane, pineapple, pasture, wildlife habitat, and home sites. The natural vegetation consists of *kiawe*, *ilima*, *uhaloa*, feather fingergrass, and buffelgrass (Foote *et al*. 1972:96-97).

The Waiakoa Series consists of well-drained upland soils and developed from basic igneous rock. The soils are gently to moderately sloping at elevations from 100 to 1,000 feet above sea level. These soils are also associated with sugar cane, truck crops, pasture, home sites, and wildlife habitat. Two series are present in the project area, WeB and WeC, the only difference between slope. Both are composed of dark reddish brown silty clay loam with underlying saprolite. In many locations, such as the western portion of the project area, this soil has either been removed or eroded to weather rock (igneous). Typical depths to bedrock are from 33 to 37 inches below surface.

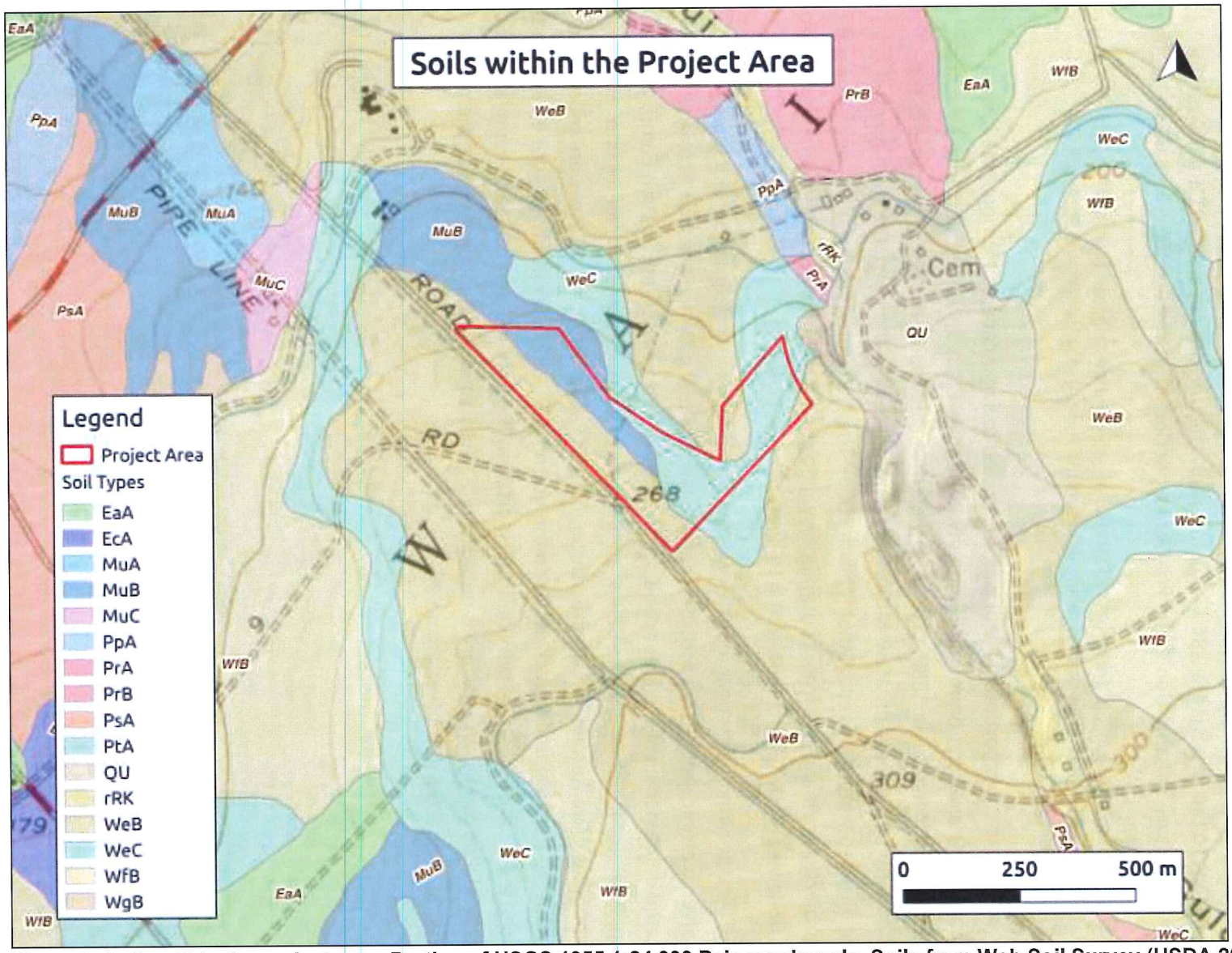

Figure 3. Soils within the project area. Portion of USGS 1955 1:24,000 Paia quadrangle. Soils from Web Soil Survey (USDA 2017).

HISTORIC BACKGROUND AND FORMER LAND USE

The project area is in an in-between region on the border of the verdant *kalo* (taro) fields of the "Four Streams" of Wailuku to the west and the productive *'uala* (sweet potato) upland area of Kula to the east (Handy 1940:496). It is likely that the project area was not utilized for native agriculture or habitation in the Pre-Contact period. The area was described in the 1860s as

> ... a complete desert, a great, barren stretch of sand and dust spread from Wailuku to Pa'ia, except for a little cattle grazing land around the present location of Spreckelsville. (Burns 1991 :72).

However, this portion of Maui was well suited to sugar cane cultivation once it was irrigated. The Hawaiian Commercial Company, formed by Claus Spreckels, developed the area around the project area. In 1880, Claus Spreckels managed to acquire fee simple title to the Wailuku Ahupua'a (approximately 440,000 acres; Grant 3343). The Haiku Ditch, completed in 1914, diverted water from east Maui (Thrum 1908). The ditch runs east-west just downslope of the project area. It appears from contemporary maps that a tributary subterranean ditch or pipe runs underneath the project area to the Haiku Ditch (see Figure 1).

The growth of the sugar industry was augmented by the indenturement of foreign labor. The diverse ethnic groups that provided needed labor to fuel a large plantation economy was reflected in the names of the labor camps in the region: Hawaiian Camp, Russian Camp, Spanish Camp, Portuguese Camp, Chinese Camp, and Japanese Camp. A total of thirteen camp communities were formed and situated throughout the sugar lands and towns were founded at Pu'unēnē to the west and Spreckelsville to the north (USGS 1922 Kihei Quad; Figure 4). Railroads constructed by the plantation provided transportation for hauling sugar cane and connecting the scattered labor camps. A cemetery is noted on a 1956 topographic quad just east of the project area across Kalialinui gulch (see Figure 3).

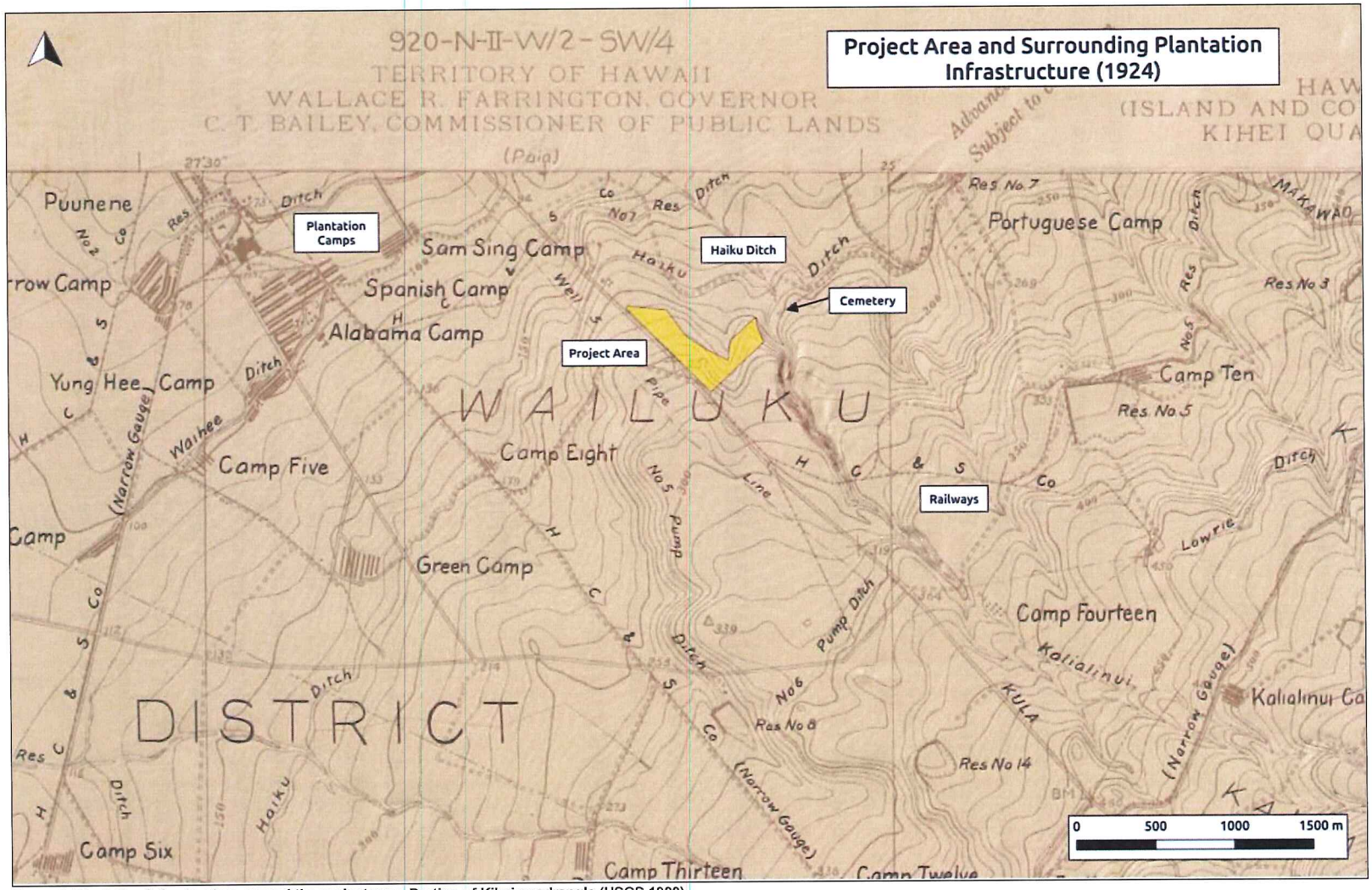

Figure 4. Plantation infrastructure around the project area. Portion of Kihei quadrangle (USGS 1922).

PREVIOUS ARCHAEOLOGY

Fredericksen and Fredericksen (1988, 1989) have conducted the only intensive study of the Pu`unēnē area, in two large lots (cumulatively 232 acres) downhill of the project area. Their inventory surveys have led to the documentation of several possible volcanic glass concentrations, historic irrigation ditches, and old stream gravels. The volcanic glass debris was later re-interpreted as slag associated with mill production. No subsurface deposits were identified.

Scientific Consultant Services, Inc. (SCS) conducted an Archaeological Inventory Survey of the Pu'unēnē Bypass and Mokulele Highway Improvements Corridors (Burgett and Spear 1997). No evidence of archaeological remains were encountered during the survey. The entire route of the Highway Improvements and Pu'unēnē Bypass corridors crossed previously altered terrain. Most of the extensive alteration in the area has been the result of sugar cane cultivation.

SCS conducted a cultural impact assessment of the parcel now occupied by the Central Maui Landfill Refuse and Recycling Center (McGerty and Spear 2008) which found that the project area has not been used for traditional Hawaiian cultural purposes within recent times.

SETTLEMENT PATTERNS AND EXPECTED FINDINGS

No pre-Contact sites are expected in the project area. However, given that the area was part of a sugar cane field system, there could be a likelihood to encounter plantation-era infrastructure or historic properties.

METHODOLOGY

FIELD METHODS

Archaeological fieldwork was conducted between June 6, 2016 and June 9, 2016 by SCS Archaeologists Nicole Andricci, B.A. and Ian Bassford, B.A., under the direct supervision of Michael F. Dega, Ph.D. (Principal Investigator). Full pedestrian survey was conducted vis both north-south and east-west transects across the project area in 3-5 m spacing. Visibility was good throughout the survey. In addition, thirty locations were selected for subsurface examination throughout the vacant 40-acres parcel during fieldwork. The thirty locations were chosen in order to provide a representative example of subsurface matrices seen throughout the project area and was also determined by backhoe access. The thirty stratigraphic trench sites are plotted on the map below (Figure 4; see Figure 3). The illustration shows a majority of the trenches having been

placed in the eastern side of the project area. The areas to the west, where no trenches are noted, was not fully tested due to the ubiquitous presence of bedrock. The backhoe simply could not penetrate the bedrock in the western half of the project area. It also appeared as though the western half had soil sediment removed, likely during modern times.

The thirty stratigraphic trenches (ST-1 through ST-30) were mechanically excavated using a backhoe (see Table 1 below for trench dimensions). All sediments were documented with photographs, stratigraphic profiles, and Munsell soil descriptions. Standard excavation and recording procedures were used during the project. As no cultural deposits or subsurface features were identified, excavated matrices were not screened.

Table 1: Stratigraphic Trench Dimensions

Stratigraphic Trench (ST)	Length (cm)	Width (cm)	Height (cm)
ST-1	390	90	120
ST-2	400	90	140
ST-3	410	100	130
ST-4	420	90	130
ST-5	380	90	120
ST-6	390	90	120
ST-7	460	100	170
ST-8	440	90	145
ST-9	450	100	157
ST-10	400	100	180
ST-11	380	90	160
ST-12	470	100	165
ST-13	450	95	170
ST-14	450	95	165
ST-15	450	100	150
ST-16	460	90	155
ST-17	420	90	145
ST-18	440	90	145
ST-19	410	90	120
ST-20	410	90	100
ST-21	440	95	160
ST-22	440	100	120
ST-23	440	90	115
ST-24	440	95	150
ST-25	440	100	140
ST-26	420	90	150
ST-27	410	90	80
ST-28	430	90	150
ST-29	440	100	160
ST-30	410	90	110

LABORATORY METHODOLOGY

All field notes and digital photographs are curated at the SCS laboratory in Honolulu. Representative stratigraphic profiles have been drafted for presentation within this report. True north compass orientation was also employed. All measurements were recorded in metric. All materials gathered during this project (including documentation) are being curated at the SCS laboratory in Honolulu. The final steps of laboratory work consisted of digitizing photographs, drafting stratigraphic profiles, and reporting.

FIELDWORK RESULTS

Full pedestrian survey of the project area did not lead to the identification of any surface sites nor deposits (midden scatters, isolated artifacts, etc). The surface represents former sugar cane lands that had been graded and used for cane over decades. No historic-era features related to this cultivation were identified.

Thirty trenches were excavated during fieldwork within the project area. No traditional or historic-period cultural deposits, artifacts, midden, or skeletal materials were identified in subsurface contexts. Stratigraphy was confirmed as composed of three different types of soil: Ewa silty clay loam (EaA), Molokai silty clay loam (MuB), and Pulehu clay loam on 0 to 3 percent slopes (PsA) (Foote *et al.* 1972:30). Bedrock was encountered in multiple trenches and represented the end of testing for that trench. Due to shallow amounts of soil and presence of bedrock near the surface in instances, some of the trenches were located close together.

Figure 5: Aerial View of Stratigraphic Trench Sites (ST-1 through ST-30).