RICHARD T. BISSEN, JR.
Mayor

JACKY TAKAKURA
Acting Director

ANA LILLIS
Deputy Director



DEPARTMENT OF PLANNING
COUNTY OF MAUI
ONE MAIN PLAZA
2200 MAIN STREET, SUITE 315
WAILUKU, MAUI, HAWAI'I 96793

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STATE OF HAWAII
LAND USE COMMISSION

Exhibit 1

MUNEKIYO HIRAGA
Planning. Project Management. Sustainable Solutions.

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VICE PRESIDENT
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VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

June 27, 2025

Ana Lilis, Deputy Director
County of Maui
Department of Planning
One Maine Plaza
2200 Main Street
Wailuku, Hawai'i 96793

SUBJECT: Submission of Supplemental Materials for State Special Permit Amendment Application for the Hawaiian Cement Pu'unēnē Quarry Site (TMK Nos. (2)3-8-004:001, (2)3-8-006:001, and (2)3-8-001:031) (SP 92-380)

Dear Deputy Director Lilis:

We are writing on behalf of Hawaiian Cement (Applicant), in order to submit supplemental information related to the Applicant's pending State Special Permit (SP) amendment request for the Pu'unēnē Quarry (SP 92-380). Per our meetings with you in January of this year, we are submitting this supplemental information packet to support Hawaiian Cement's request to amend its existing SP. The SP allows the Applicant to quarry the permitted Pu'unēnē Quarry area for sub-soil stone resources for use in producing aggregate, base course, and other similar construction materials.

The most recent request to amend SP 92-380 was submitted in 2021, and requested that the permitted quarry area be expanded in order for the Applicant to continue quarrying activities. A similar amendment request was submitted for the County Special Use Permit (CUP) for the project. The CUP amendment was approved by the Maui Planning Commission (MPC) in 2022, and the SP amendment request was recommended for approval and forwarded to the State Land Use Commission (SLUC) for further processing. The SLUC staff sought additional comments on the SP amendment request from the State Department of Agriculture (DOA), and State Office of Planning and Sustainable Development (OPSD) prior to scheduling a hearing for the amendment request. Following their review, the State agencies requested that further work be undertaken to ensure that no archaeological or cultural resources would face adverse impacts as a result of quarry expansion.

Our office submitted supplemental information to the Planning Department (Department) in October 2023, with regard to both the State agency comments and additional information requested by the SLUC staff. Additionally, a request was made to be scheduled before the MPC in order to amend the record for the 2021 SP amendment request. The 2021 SP amendment request is, therefore, pending scheduling before the MPC and, as such, per our discussions, final SLUC action on the SP amendment application is pending as well.

However, before the MPC meeting could be scheduled to amend the record for the SP, the ownership of the quarry area changed from Alexander and Baldwin (A&B) to AB Maui Quarries, LLC. The new landowner will terminate the Applicant's lease to the quarry site, including the proposed expansion area, effective January 2027. As such, per our discussions with you, the Applicant is seeking to further amend the pending SP amendment request to: 1) remove the existing quarry area and proposed expansion area from consideration, effective January 31, 2027 and 2) propose a new Supplemental Quarry site of 125 acres. The Applicant has purchased 55 acres of the Supplemental Quarry site from MP Central A, LLC, a subsidiary of Mahi Pono Holdings LLC, and will purchase the remainder of the property (70 acres) should all necessary permits and approvals be received.

Per our discussion, it was determined that a new amendment application for SP 92-380 would not be necessary. Instead, submission of supplementary application information for the existing SP amendment request would be the appropriate permitting path, given that the application is still active pending final action by the MPC and SLUC. We met with staff from the OPSD, DOA, and SLUC, and they are supportive of this approach. Separately, an Application for Amendment to Permit Terms, Conditions, and Time Stipulations will be submitted to the Department to amend the CUP application, since that approval process fully concluded when the most recent amendment request was approved by the MPC in 2022.

A Project Assessment Report (PAR) is provided as **Exhibit "A"** which includes information related to the proposed amendment to add the 125 acres to the SP. The PAR provides detailed explanations of permitting history, the current request, and potential environmental impacts and mitigation measures related to the Supplemental Quarry site. Letters of Authorization are also provided from the Applicant and co-landowner as **Exhibit "B"**.

Thank you for your review of this supplemental information. Should you have any questions or require additional information, please feel free to contact me by phone at (808) 244-2015 or by email at finn@munekiyohiraga.com.

Very truly yours,



Finn Gibson
Analyst

FG:de
Attachments

cc: David Gomes, Hawaiian Cement (w/attachments)
Keoni DeRego, Hawaiian Cement (w/attachments)
Jeffrey Ueoka, Wells Street Law, (w/attachments)
Grant Nakama, Mahi Pono, Inc (w/attachments)
K:\DATA\HawnCemt\PuuneneSupplQuarry\Apps\PAR\SP Cover Letter.docx

Exhibit “A”
Project Assessment Report

Project Assessment Report

HAWAIIAN CEMENT
PROPOSED PU‘UNĒNĒ QUARRY
PU‘UNĒNĒ, MAUI, HAWAI‘I
TMK No. (2)3-8-004:001(por.)
(CUP 2006/0002)

Prepared for:

Hawaiian Cement

June 2025

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by Munekiyo Hiraga

MUNEKIYO HIRAGA
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OVERVIEW OF EXISTING CONDITIONS

I. OVERVIEW OF EXISTING CONDITIONS

A. BACKGROUND

1. Property Location and Ownership

Hawaiian Cement (Applicant) is permitted to operate an approximately 214.01-acre quarry and rock crushing operation at its Puʻunēnē facility, which encompasses three (3) Tax Map Key (TMK) parcels. The quarrying activity takes place within the parcel identified by TMK No. (2)3-8-004:001(por.) ("quarry area"), while the processing and crushing facility is located on the parcel identified as TMK No. (2)3-8-008:031(por.) ("processing facility") and accessed via the parcel identified by TMK No. (2)3-8-008:001. See **Figure 1**. The existing quarry and rock crushing operation is located within the State Agricultural District, and is permitted under State Land Use Commission Special Permit (SSP) SP92-380. Additionally, it is noted that the County zoning for both the quarry area and the processing facility is "Agricultural" and, as such, a County Special Use Permit (CUP) was obtained to permit the quarry operation in 2006 (CUP 2006/0002).

The existing quarry area located on TMK (2)3-8-004:001 (por.) is one (1) to two (2) miles east of the Maui Veterans Highway and Kamaʻāina Road intersection in the Puʻunēnē area. Refer to **Figure 1**. Surrounding land uses include lands formerly utilized for sugar cane cultivation to the east, north, and south, as well as the Maui Humane Society, the Pulehunui Industrial Park, and the Maui Raceway Park to the west. Other uses located further north of the existing quarry include the Maui Consolidated Baseyard light industrial subdivision. Access to the existing quarry area is provided through the signalized intersection of Kamaʻāina Road and Maui Veterans Highway.

AB Maui Quarries LLC recently purchased the entirety of the existing quarry area from Alexander and Baldwin (A&B). The new landowner is honoring the lease held by the Applicant until January of 2027, at which point Hawaiian Cement will lose access to the quarry area. However, the processing facility site (TMK (2)3-8-008:031) is held by the Applicant under a lease from the State of Hawaiʻi, through 2038.

Hawaiian Cement submitted a request to amend the existing SP92-380 and CUP 2006/0002 in February 2021, to the County of Maui, Department of Planning. Said amendment request was to amend the permitted quarrying area within TMK (2)3-8-004:001, to add additional acreage for rock quarrying purposes within the parcel. However, as noted above, the ownership of the parcel changed since the

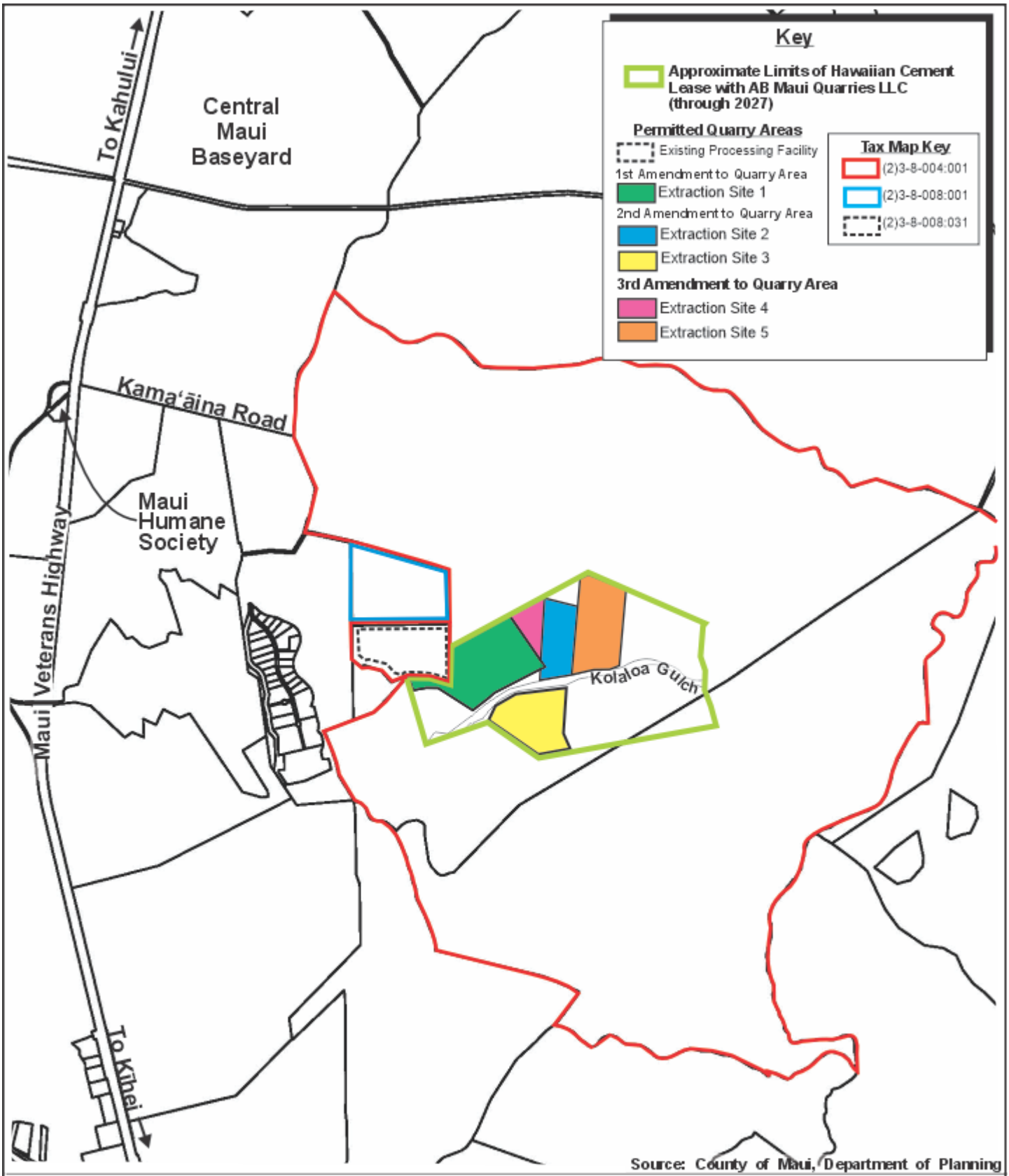


Figure 1 Hawaiian Cement Proposed Puʻunēnē Supplemental Quarry
Existing Conditions Map

Prepared for: Hawaiian Cement

MUNEKIYO HIRAGA

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amendment request was submitted. As the Applicant was informed that the access to the lease area of TMK (2)3-8-004:001 would be ending, an alternative quarry location was sought. A separate portion of TMK (2)3-8-004:001 ("Supplemental Quarry Site"), which is owned by MP Central A, LLC, a subsidiary of Mahi Pono Holdings, LLC, was secured for a new rock quarry area.

2. Description of Existing Conditions

Hawaiian Cement extracts basalt rock material at the existing quarry area, before transporting it to the processing facility by use of a movable, overland conveyor belt system. The quarry area and processing facility are supported by onsite maintenance facilities, administrative offices, and storage.

The current quarry area is divided into five (5) extraction sites as a result of incremental expansion of quarry operations over time. Extraction Sites 1, 2, and 4 have been fully quarried at the time of submission of this application, and prepared for return to agricultural use. Extraction Site 5 is in current use, while quarrying of Site 3 is expected to occur before Hawaiian Cement's lease expires in 2027. Refer to **Figure 1.**

Within the overall quarry area, Hawaiian Cement is permitted to remove soil and extract rock, crush raw material, and transport the crushed material to its existing facility for further processing into aggregate, cement, and other products which it sells. Products are regularly transported to work sites and offsite cement facilities for use. Normal quarry hours of operation are Monday through Saturday, from 6:00 a.m. to 5:00 p.m. Operation hours also include time for maintenance activities and reclamation work to restore quarried areas.

The Supplemental Quarry site is currently in active agricultural use by Mahi Pono, LLC (MPL), a subsidiary of Mahi Pono Holdings, LLC which is responsible for farming operations. Should the special use permit approvals be received, the Applicant will work with MPL to develop a schedule for the transition of the agricultural operations to other lands owned by MPL.

B. CHRONOLOGY OF LAND USE PERMITS AND APPROVALS

The Hawaiian Cement Puʻunēnē Quarry has been in operation since 1992 in conjunction with a concrete and aggregate operation. Prior cement and base course operations have existed at the processing facility site since the 1980s by other operations. It is noted that Hawaiian Cement has held a long-term lease with A&B, and subsequently with AB Maui Quarries LLC, for the use of approximately 350 acres of their land in the Puʻunēnē area for quarry purposes. This lease will be terminated in January 2027, leading Hawaiian Cement to lose access to the current quarry area.

1. State Land Use Commission Special Use Permit SP92-380

In July 1992, Hawaiian Cement received approval by the State Land Use Commission (SLUC) for a SSP to establish a rock quarry and concrete aggregate operation on approximately 46 acres of land in the Puʻunēnē area. The original site is identified as TMK (2)3-8-008:031(por.), which is currently occupied by the processing facility. Refer to **Figure 1**.

a. First Amendment to SP92-380 (60 Additional Acres)

In November 1996, the SLUC granted a first amendment to SP92-380 to permit a new area of 60 acres in addition to the original 46 original acres, increasing the size of the permitted quarry area and processing facility to 106 acres. This additional 60-acre area (Extraction Site 1) is located on TMK (2)3-8-004:001(por.). Refer to **Figure 1**. Hawaiian Cement has since completed its quarrying work within Extraction Site 1, and it is noted that areas where quarrying is complete have been remediated for return to agricultural production, per the Applicant's lease agreement with A&B (prior owner).

b. Second Amendment to SP92-380 (66.4 Additional Acres)

In December 2006, the SLUC granted a second amendment to SP92-380 to permit an additional 66.44 acres of land for rock quarry and processing operations. The additional area was provided as two (2) distinct sections, a 24.476-acre portion (Extraction Site 2) and a 44.28-acre portion (Extraction Site 3) within TMK (2)3-8-004:001. Refer to **Figure 1**. It is noted that the Applicant has completed quarrying within the Extraction Site 2 and, as mentioned previously, this area has been remediated for return to agricultural production. Kolaloa Gulch separates Extraction Site 3, which is not being quarried at this time, from the other approved extraction sites.

c. Third Amendment to SP92-380 (41.968 Additional Acres)

In 2014, the SLUC granted a third amendment to SP92-380 to permit two (2) additional areas of 9.697 and 41.968 acres, respectively, on portions of TMK (2)3-8-004:001 for rock quarry operations (Extraction Site 4 and Extraction Site 5). Refer to **Figure 1**. These additional areas are located on either side of Extraction Site 2. The Applicant has completed quarrying in Extraction Site 4 and is currently quarrying Extraction Site 5. As mentioned previously, Extraction Site 4, where quarrying is complete, has been remediated for return to agricultural production.

d. Fourth Amendment to SP92-380 (Incomplete)

In 2021, the Applicant submitted a fourth amendment application to add further additional acreage within TMK (2)3-8-004:001 to SP92-380 for quarry purposes. However, before the application could be reviewed by the SLUC, the quarry area was purchased by AB Maui Quarries LLC. In light of the impending termination of its lease to the quarry area, the Applicant is withdrawing the fourth amendment application for TMK (2)3-8-004:001. The Applicant met with staff from the State Land Use Commission, State Department of Agriculture and the State Office of Planning and Sustainable Development, as well as the Mayor‘s Office and County Department of Planning, to discuss concerns related to the ability to provide a continual reliable supply of on-island construction aggregates. The materials would supply the rebuilding efforts in West Maui, following the devastating wildfires in August 2023, and for other construction related needs such as road repaving and affordable housing. Following the discussions with the State and County, it was determined that the Applicant could replace the February 2021 request to amend the SUP and submit the present request to add the Supplemental Quarry site and request to remove all prior approved quarry areas in TMK (2)3-8-004:001 (i.e. Extraction Sites 1, 2, 3, 4 and 5).

2. County of Maui Special Use Permit CUP 2006/0002

It is noted that prior to 1998, rock quarrying was a special use permitted on lands zoned “Agricultural” by the County of Maui. The special use was permitted if a State Special Permit (SSP) was received for the property, regardless of the size of the permitted area. Thus, no County Special Use Permit (CUP) was required. However, in 1998, the County’s Agricultural District Zoning Ordinance was amended to include a size limitation for the SSP, such that any special uses proposed in an area larger than 15 acres would require a separate CUP. Any existing operations which had a SSP in effect in 1998 were allowed to continue until their permit expiration deadline. At such time, applicants were required to seek a CUP in addition to the SSP for proposed areas over 15 acres.

In June 2006, as provided in the Agricultural District Zoning Ordinance enacted in 1998, the Maui Planning Commission (MPC) granted a CUP to the Applicant to permit the use of the lands specified in the second SSP amendment, i.e. Extraction Sites 2 and 3, for rock quarry and concrete aggregate purposes. In 2014, the Applicant also sought to amend the boundary of the CUP approval to include Extraction Sites 4 and 5, as specified in the third SSP amendment. Hawaiian Cement was granted amendments and the extensions for the CUP in congruence with those for the SSP.

In May 2022, the MPC reviewed and took action on the CUP, approving the amendment to provide for additional quarry areas within TMK (2)3-8-004:001, that were previously owned by A&B and are now owned by AB Maui Quarries LLC. It is noted that final action on the SSP by the SLUC remains on hold.

As noted previously, after the ownership change, the Applicant was informed that the access to the lease area of TMK (2)3-8-004:001 would be ending. Therefore, the Supplemental Quarry Site owned by MP Central A, LLC was identified. Following the discussions with the Planning Department, it was determined that the Applicant would apply for an amendment to CUP2006/0002, to remove the previously permitted quarry areas within TMK (2)3-8-004:001 and propose to add the new Supplemental Quarry site to the CUP. As such, the Applicant is filing an Amendment to Permit Terms, Conditions and Time Stipulations with the Department of Planning.

PROPOSED LAND USE REQUESTS

II

II. PROPOSED LAND USE REQUESTS

This report supports two (2) separate requests, related to Hawaiian Cement's amended State Special Permit (SSP) submittal and amendment to the County Special Use Permit (CUP), respectively. For both permits, the Applicant desires to remove the currently permitted Extraction Sites 1, 2, 3, 4, and 5 from consideration, and instead add a new quarry area of approximately 125 acres ("Supplemental Quarry Site"). The Supplemental Quarry area is also located on TMK (2)3-8-004:001, directly north of Extraction Sites 1, 2, and 4. It abuts the processing facility (located on TMK No (2)3-8-008:031) in its southwest corner. See **Figure 2** and **Figure 3.** The requests are described in further detail below.

1. <u>State Land Use Commission Special Use Permit Boundary Amendment Request</u>

The current boundaries of SP92-380 as reflected in the Third Amendment, approved in November 2014, are shown in **Figure 1**. In light of the impending January 2027 termination of its lease to the current quarry area, the Applicant is proposing an amendment to the existing boundary of the permitted area. If this amendment request is approved, Extraction Sites 1 to 5 will be removed from consideration under the SSP, and the Supplemental Quarry area of 125 acres will be added. No change is proposed to the processing facility at TMK Nos. (2)3-8-008:031. Refer to **Figure 2** and **Figure 3**. Since action by the State Land Use Commission (SLUC) on the SSP is still unresolved from 2022, the request will be submitted as a supplement to the current application, which remains active.

The proposed quarry area is subject to a purchase and sale agreement between Mahi Pono Holdings, LLC (operating as MP Central A, LLC) and Hawaiian Cement. Under the agreement, Hawaiian Cement has purchased 55 of the 125 acres as of submission of this report, and will purchase the remaining 70 acres should the amendment requests to the SSP and CUP be approved. The new site was chosen based on its adjacency to the processing facility, as well as its ample supply of rock resources. By amending the existing Permitted Area, the Applicant will be able to continue production of cement without halting, despite the termination of its current lease.

2. <u>County Special Use Permit Boundary Amendment Request</u>

Subsequent to the First Amendment to the SP92-380 in 1996, the County of Maui adopted the Agricultural District Zoning Ordinance, Chapter 19.30A of the Maui County Code (MCC) in 1998. Prior to 1998, quarry activities and related operations

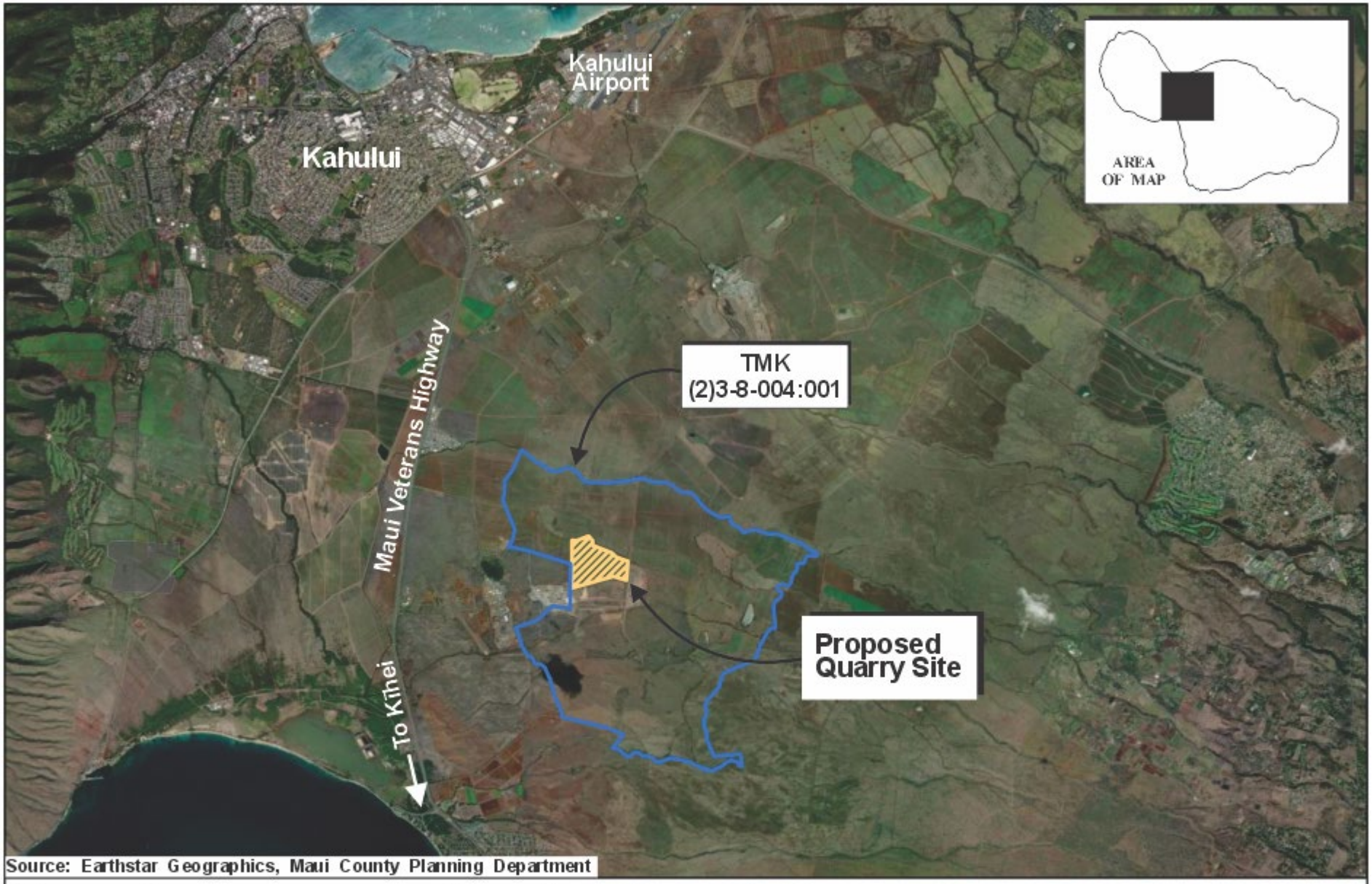


Figure 2

Hawaiian Cement Proposed
Pu'unēnē Supplemental Quarry
Regional Location Map

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Prepared for: Hawaiian Cement

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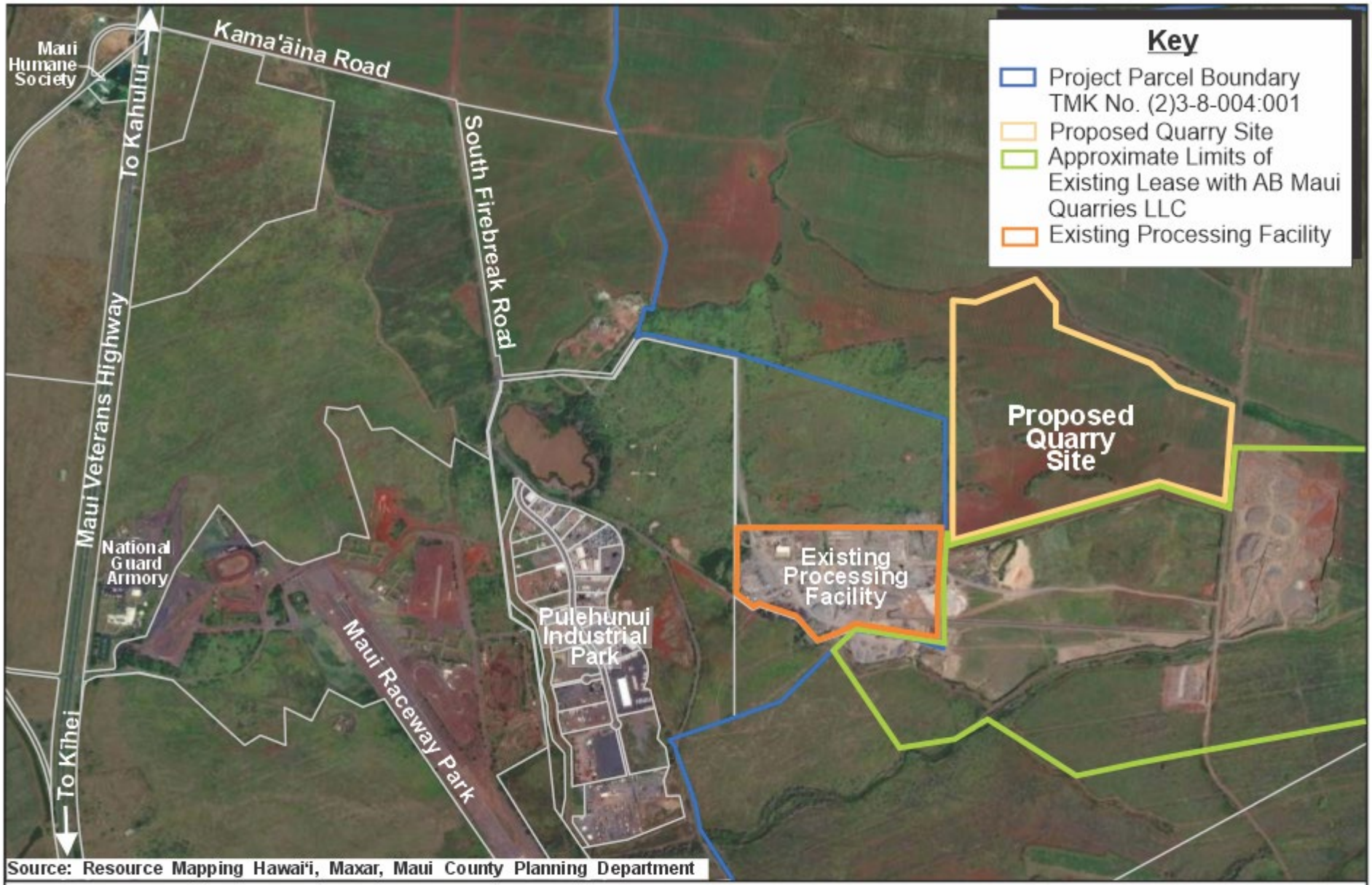


Figure 3

Hawaiian Cement Proposed Pu'unēnē Supplemental Quarry

Project Location Map

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Feet

MUNEKIYO HIRAGA

Prepared for: Hawaiian Cement

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for the Hawaiian Cement Pu‘unēnē Quarry were permitted through the SP92-380. Further, Special Use Permits issued prior to the adoption of the Agricultural District zoning ordinance were permitted to remain in effect in full force for their permitted period, pursuant to Section 19.30A.110 of the MCC. However, upon renewal of the Special Use Permit, the provisions of Chapter 19.30A of the MCC were considered applicable. Under the new code, mining and resource extraction were considered special uses according to Chapter 19.30A of the MCC. Since the quarry area is larger than 15 acres, the Applicant was required to seek a CUP approval for the Pu‘unēnē Quarry, which was granted in 2006. As previously noted, subsequent amendments and time extension approvals were granted for both the SSP and CUP.

The Applicant proposes the same amendment terms to the CUP as those proposed to the SSP: removal from consideration of Extraction Sites 1 to 5 and addition of the 125-acre Supplemental Quarry site. Since the second amendment to the CUP request was approved by the Maui Planning Commission in 2022, the current request is being submitted to the Maui Planning Department as a new Application for Amendment to Permit Terms, Conditions, and Time Stipulations per discussions with the Planning Department.

Similar to the current quarry site, the proposed site is designated for agricultural use by the State Land Use Commission, Wailuku/Kahului Community Plan, and Maui County Zoning. See **Figure 4, Figure 5,** and **Figure 6.** Thus, the new site will still require State Special Permit and County Special Use Permit approvals, as is being requested. The proposed project is also not located within a Maui Island Plan Growth Boundary. See **Figure 7.** This is appropriate since the proposed use does not constitute rural or urban development, but rather an industrial use that requires open land. Further, the land will be available for agricultural use following the completion of the quarry operation, soil that was in place before mining occurred will be replaced over the quarry floor with a depth of at least 24 inches.

By moving to the Supplmental Quarry site, Hawaiian Cement will be able to continue producing its products without interruption, despite termination of its lease to the current quarry area (Hawaiian Cement will not undertake any mining operations on the current quarry site after its lease expires in January 2027). This is critical in the context of Maui’s economy, because aggregate and base course are important building materials and are in constant demand, particularly considering the need to rebuild after the 2023 wildfires in Lahaina. The expected operational lifespan of the proposed site is approximately 20 years.

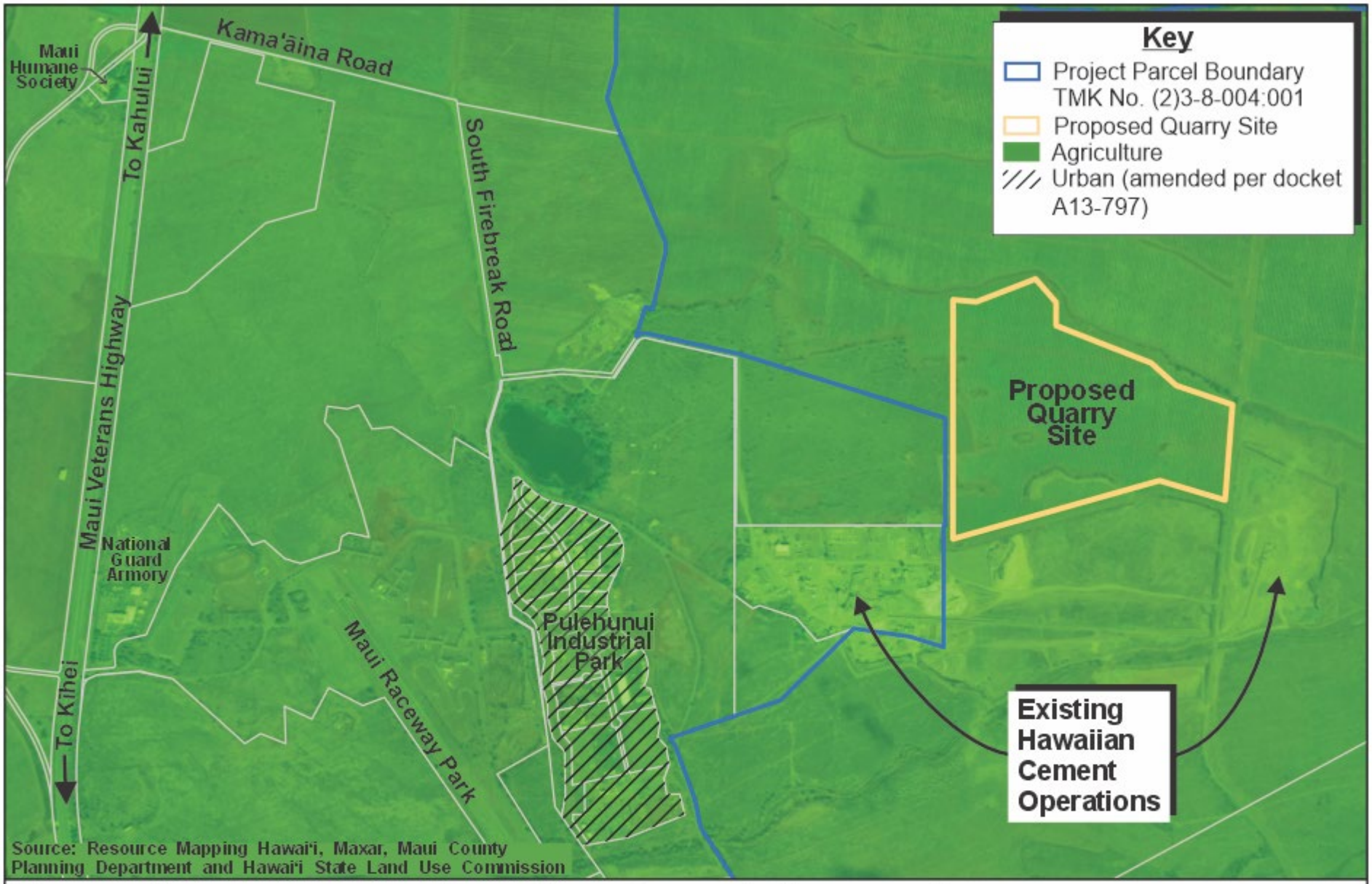


Figure 4

Hawaiian Cement Proposed Pu'unēnē Supplemental Quarry
State Land Use District Map

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Prepared for: Hawaiian Cement

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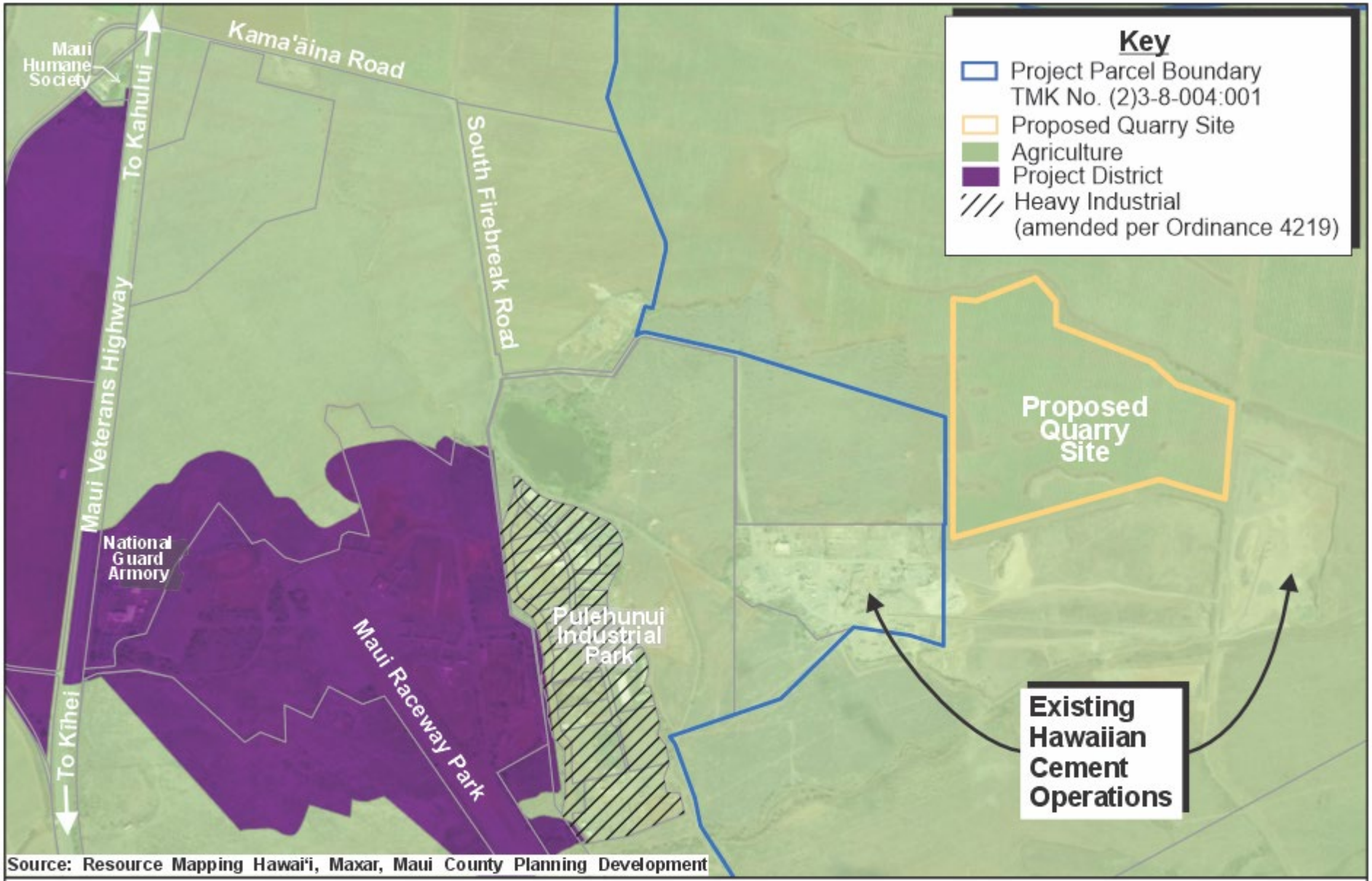


Figure 5

Hawaiian Cement Proposed Pu'unēnē Supplemental Quarry

Kihei-Makena Community Plan Map

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Prepared for: Hawaiian Cement

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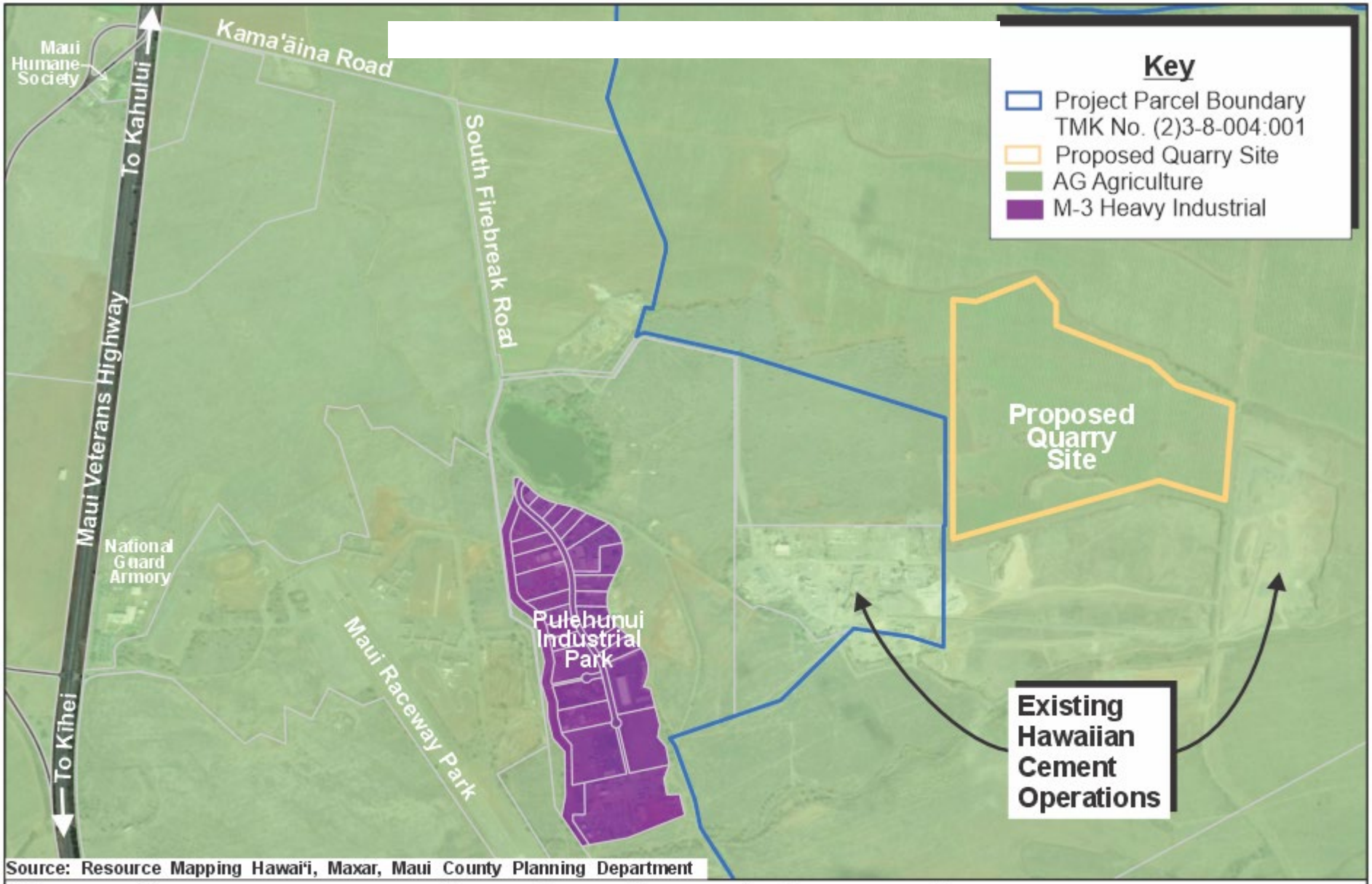


Figure 6

Hawaiian Cement Proposed Pu'unēnē Supplemental Quarry

Maui County Zoning Map

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MUNEKIYO HIRAGA

Prepared for: Hawaiian Cement

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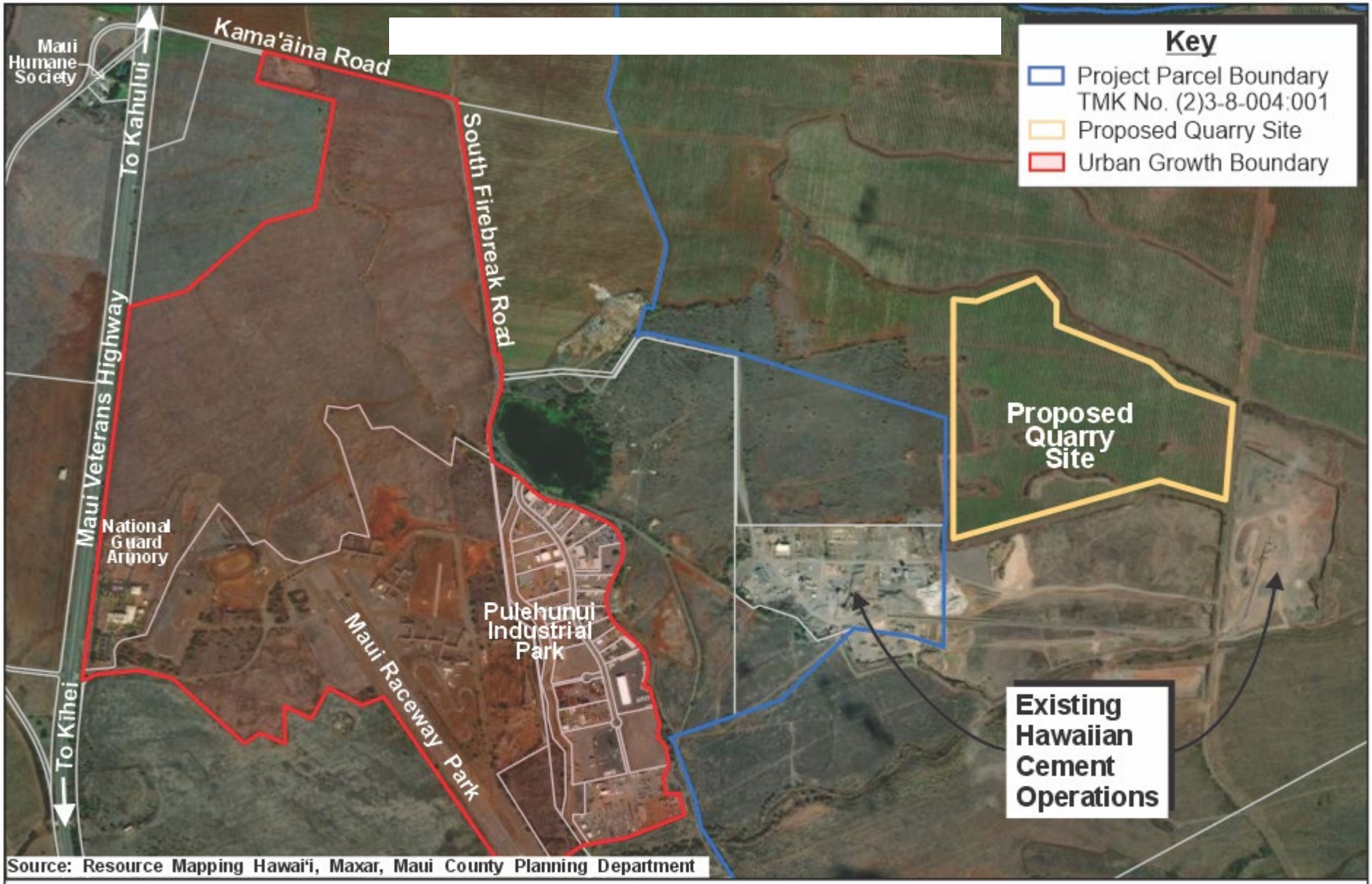


Figure 7

Hawaiian Cement Proposed Pu'unēnē Supplemental Quarry

Maui Island Growth Boundaries Map

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Feet

MUNEKIYO HIRAGA

Prepared for: Hawaiian Cement

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DESCRIPTION OF THE EXISTING ENVIRONMENT AND POTENTIAL IMPACTS AND MITIGATION MEASURES

III

III. DESCRIPTION OF THE EXISTING ENVIRONMENT AND POTENTIAL IMPACTS AND MITIGATION MEASURES

A. SURROUNDING LAND USES

1. Existing Conditions

The Proposed Supplemental Quarry Site is located approximately one (1) to two (2) miles east-southeast of the Maui Veterans Highway and Kamaʻāina Road intersection. As previously noted, a majority of the surrounding lands to the north, east, and south were formely utilized for sugar cane cultivation by Hawaiian Commercial & Sugar Company (HC&S). Many of the lands to the north and east are in active agricultural use by the current landowner, MP Central A, LLC. The lands to the south are generally fallow, but will likely be utilized for agricultural propose in the future.

The State of Hawaiʻi, Department of Land and Natural Resources (DLNR) owns a significant amount of land to the west of the project area, on which it, along with the Department of Hawaiian Home Lands (DHHL), Department of Accounting and General Services (DAGS), and the Department of Corrections and Rehabilitation (DCR), has proposed a master planning effort. Industrial and commercial uses, agricultural uses, and the future location of the Maui Regional Public Safety Complex are being considered in the master plan, though the State lands are currently vacant.

The Maui Raceway Park, owned by the County of Maui and used for recreational car racing as well as for Fire and Police Department training exercises, is also located west of the proposed Supplemental Quarry site. The Pulehunui Industrial Park is adjacent to the quarry's existing processing facility to the west, and houses many industrial lots owned by the individual businesses. Additionally, the Maui Humane Society has its offices located west of the proposed project area, immediately adjacent to the Maui Veterans Highway/Kamaʻāina Road intersection. Refer to **Figure 3**.

2. Potential Impacts and Mitigation Measures

The Applicant's Puʻunēnē Quarry has been in operation in the project area since 1992. As previously noted, the surrounding lands are largely vacant, having been formerly used for sugar cane cultivation, or characterized by other industrial uses. Furthermore, the Applicant has the existing infrastructure and equipment to support the quarry and aggregate operation in its existing processing facility, to

which no changes are proposed. The proposed Supplemental Quarry site is adjacent to the processing facility at its southwest corner. No external roadways or access points will need to be constructed.

Additionally, as a condition of Hawaiian Cement's prior lease agreement with A&B, which has been taken over by AB Maui Quarries LLC, the Applicant is required to restore the land for agricultural use upon completion of quarrying activities in the current quarry area. As such, the move to the Supplemental Quarry site will not impose adverse impacts to the former Extraction Sites 1 to 5. Likewise, with the implementation of stormwater management and erosion control precautions, as further discussed later in this Chapter, no impact to surrounding agricultural activity is expected.

B. SOIL CONDITIONS AND AGRICULTURAL PRODUCTIVITY

1. Existing Conditions

The U.S. Department of Agriculture, Soil Conservation Service designates various soil associations on the island of Maui and classifies the soils within each association in its 1972 *Soil Survey of Islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lāna'i.* The soils of the Supplemental Quarry site and surrounding lands belong to the Pulehu-Ewa-Jaucas and Waiakoa-Keahua-Molokai associations. See **Figure 8**. The specific soil types found on the proposed quarry site are Pulehu silt loam, 0 to 3 percent slopes; Pulehu silt loam, 3 to 7 percent slopes; Pulehu cobbly silt loam, 3 to 7 percent slopes; Waiakoa silty clay loam, 3 to 7 percent slopes; Waiakoa very stony silty clay loam, 3 to 7 percent slopes; and Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes. See **Figure 9**. The majority of the soil types found on the proposed site are characterized by moderate to high permeability, slow runoff, and low erosion hazard.

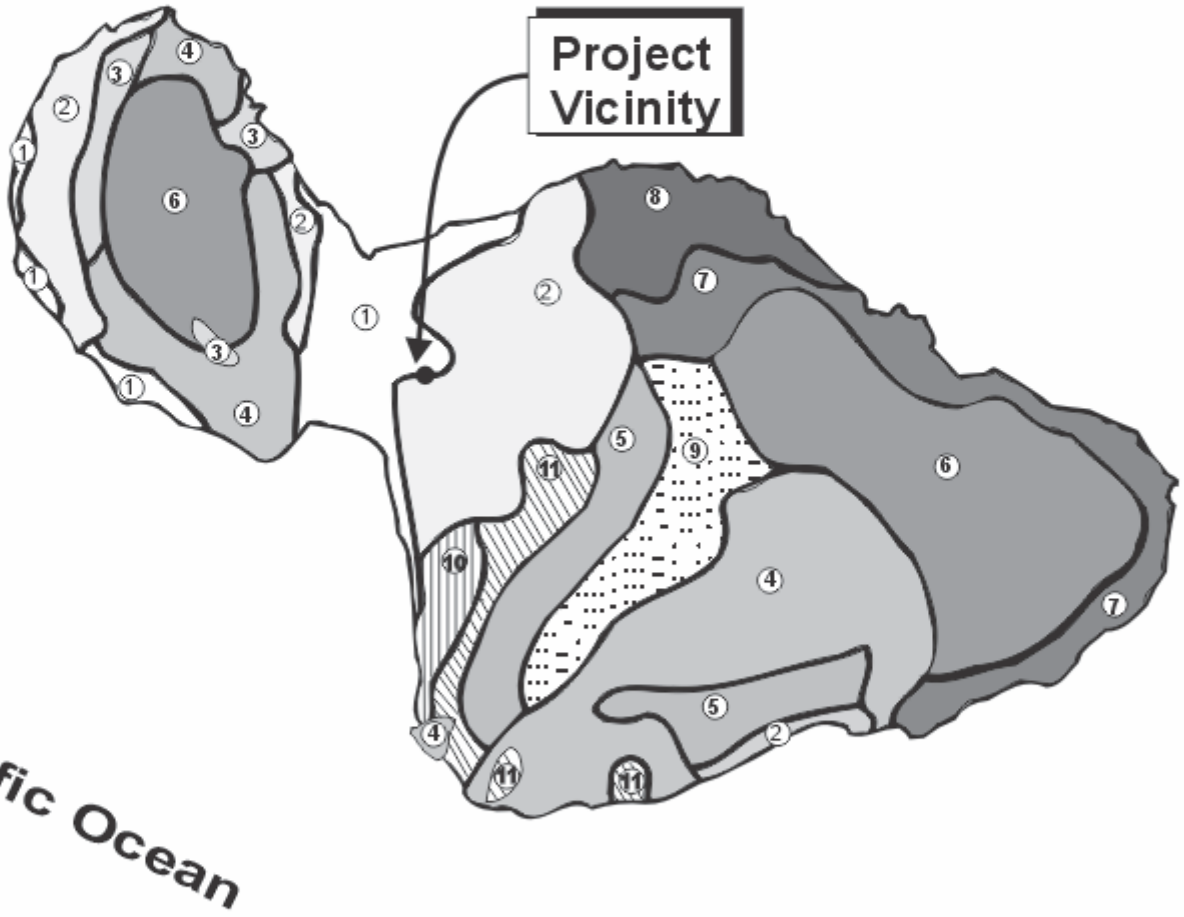
The Pulehu soil series is characterized by well-drained soils found on nearly level to moderately sloping terrain, which developed from basic igneous rock. Typical elevations range from sea level to 300 feet above mean sea level (amsl). Soils from this series are generally used for agricultural use or grazing.

Similarly, the Waiakoa series also consists of well-drained soils that developed from basic igneous rock. However, Waiakoa soils tend to be found on steeper grades, from gently sloping to moderately steep, and higher elevations, from 100 to 1,000 feet amsl. Like those of the Pulehu series, these soils are often used for agricultural production and grazing.

The State Department of Agriculture has established three (3) categories of Agricultural Lands of Importance to the State of Hawai'i (ALISH): "Prime", "Unique", and "Other". "Prime" lands are those lands which possess the soil quality, growing

LEGEND

- ① Pulehu-Ewa-Jaucas association
- ② Waiakoa-Keahua-Molokai association
- ③ Honolua-Olelo association
- ④ Rock land-Rough mountainous land association
- ⑤ Puu Pa-Kula-Pane association
- ⑥ Hydrandepts-Tropaquods association
- ⑦ Hana-Makaalae-Kailua association
- ⑧ Pauwela-Haiku association
- ⑨ Laumaia-Kaipoipoi-Olinda association
- ⑩ Keawakapu-Makena association
- ⑪ Kamaole-Oanapuka association



Source: USDA, Soil Conservation Service

Figure 8 Hawaiian Cement Proposed Pu'unēnē Supplemental Quarry Soil Association Map

NOT TO SCALE

Prepared for: Hawaiian Cement

MUNEKIYO HIRAGA

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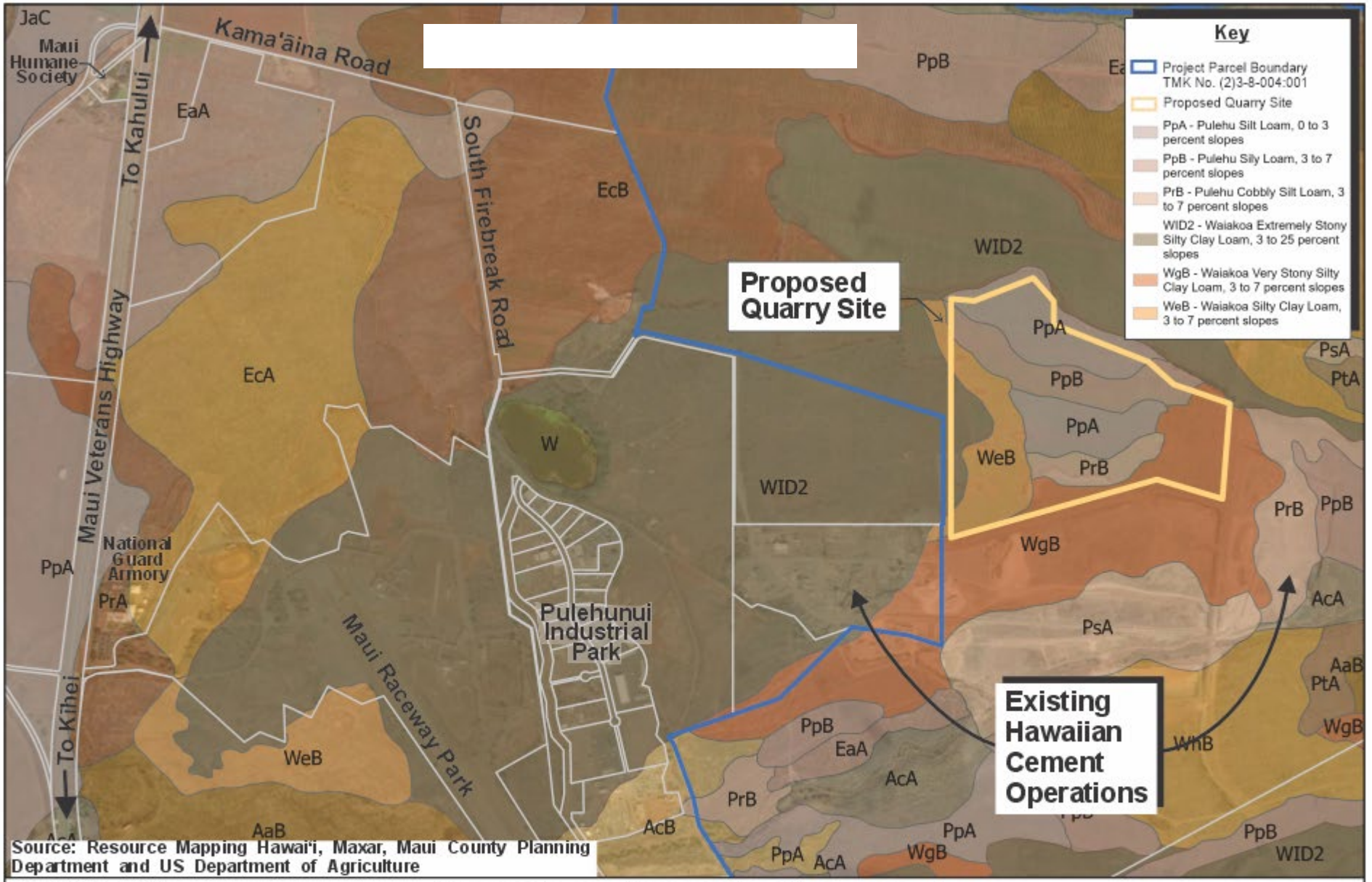


Figure 9

Hawaiian Cement Proposed Pu'unēnē Supplemental Quarry Soil Classification Map

0 750 1,500
Feet

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Prepared for: Hawaiian Cement

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season, and moisture supply needed to produce high yields of crops economically and when treated and managed according to modern farming techniques. “Unique” lands have similar characteristics, but only for specific crops, while lands designated “Other” are not classified as “Prime” or “Unique”, but are of Statewide or local agricultural importance for a different reason. Lands not rated “Prime”, “Unique”, or “Other” are “Unclassified”. The ALISH map designates the lands underlying the Supplemental Quarry site as “Prime” and “Other”, indicating significant agricultural potential. See **Figure 10**.

In June 2009, A&B received approval for the designation of approximately 27,000 acres of its lands in Central and Upcountry Maui as “Important Agricultural Lands” (IAL) by the SLUC. The Supplemental Quarry expansion area is located within one (1) of the designated IAL areas. See **Figure 11**.

The Land Study Bureau classifies the agricultural productivity of Hawai‘i’s soils with a rating of “A” through “E”, with “A” reflecting lands with the highest productivity and “E” the lowest. The soil underlying the project site is characterized by productivity ratings of “A”, “B”, and “E”. See **Figure 12**.

The proposed quarry site is currently being used as a citrus orchard by MPL.

2. Potential Impacts and Mitigation Measures

The soil and topography characteristics of the Supplemental Quarry site are appropriate for the proposed use. The ground is relatively flat and significant erosion risk is not a concern. However, removal of soil will increase potential drainage runoff. Appropriate Best Management Practices (BMPs) will be implemented to ensure that erosion and sedimentation do not have any adverse impact on downstream properties.

Quarry operations will alter the existing topography of the proposed quarry site, as soil and subsurface stone are removed during mining. During active quarry operations, agricultural uses will be halted. However, mining will be undertaken in stages, with only at most 30 of the 125 acres being actively used at any time, and the existing agricultural activity will be allowed to continue in non-quarry operation areas. Furthermore, soil will be returned to each 30-acre active site as mining is completed, making land available for agricultural use. The current quarry areas will similarly be restored to agricultural use in compliance with a condition of the Applicant’s lease with AB Maui Quarries LLC.

Despite the high soil quality of the Supplemnetal Quarry site, the mining use has been determined an appropriate temporary use for the land. Quarrying requires a rock source, and open, relatively flat terrain, which are both qualities held by the

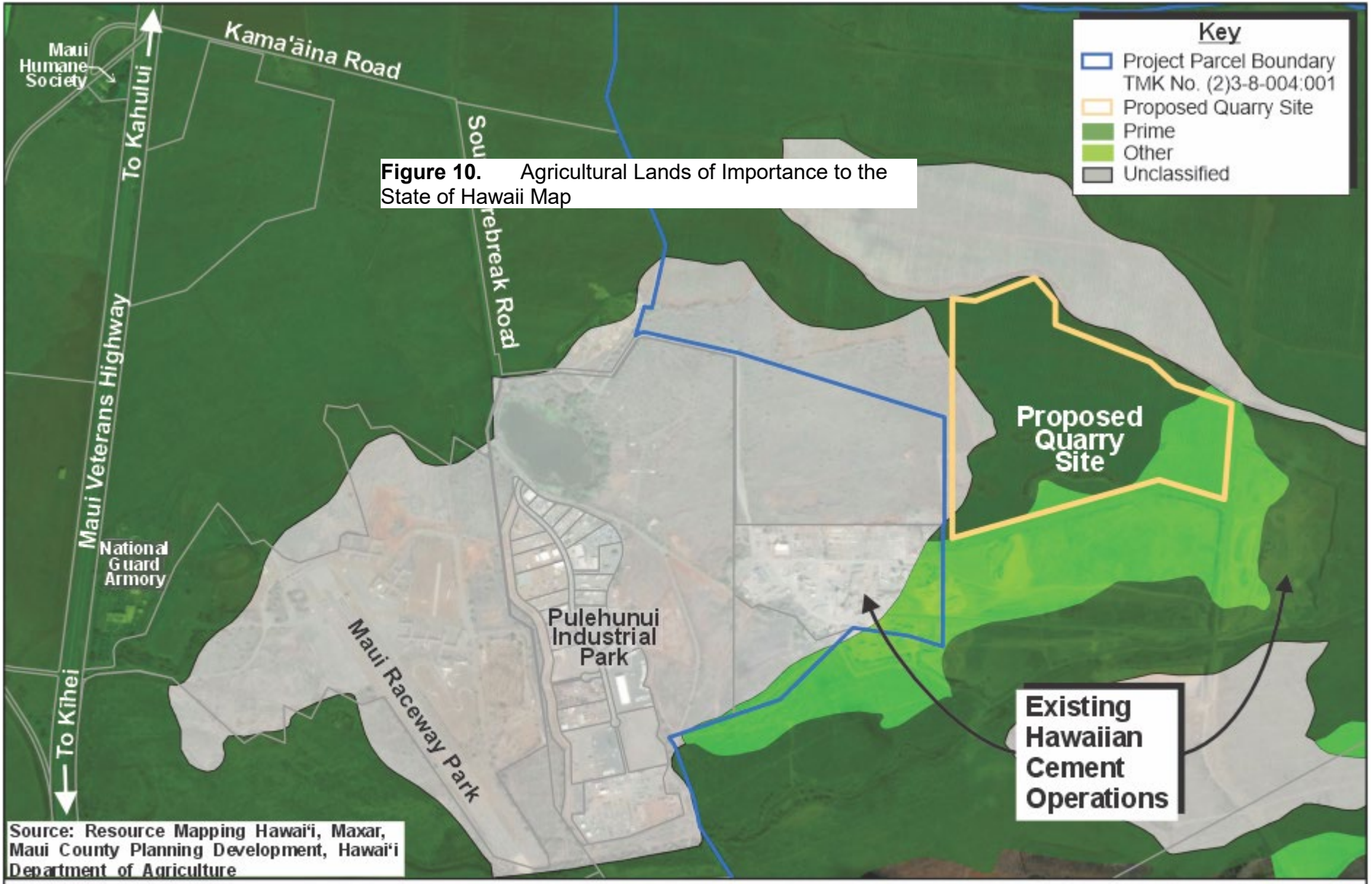


Figure 10. Agricultural Lands of Importance to the State of Hawaii Map

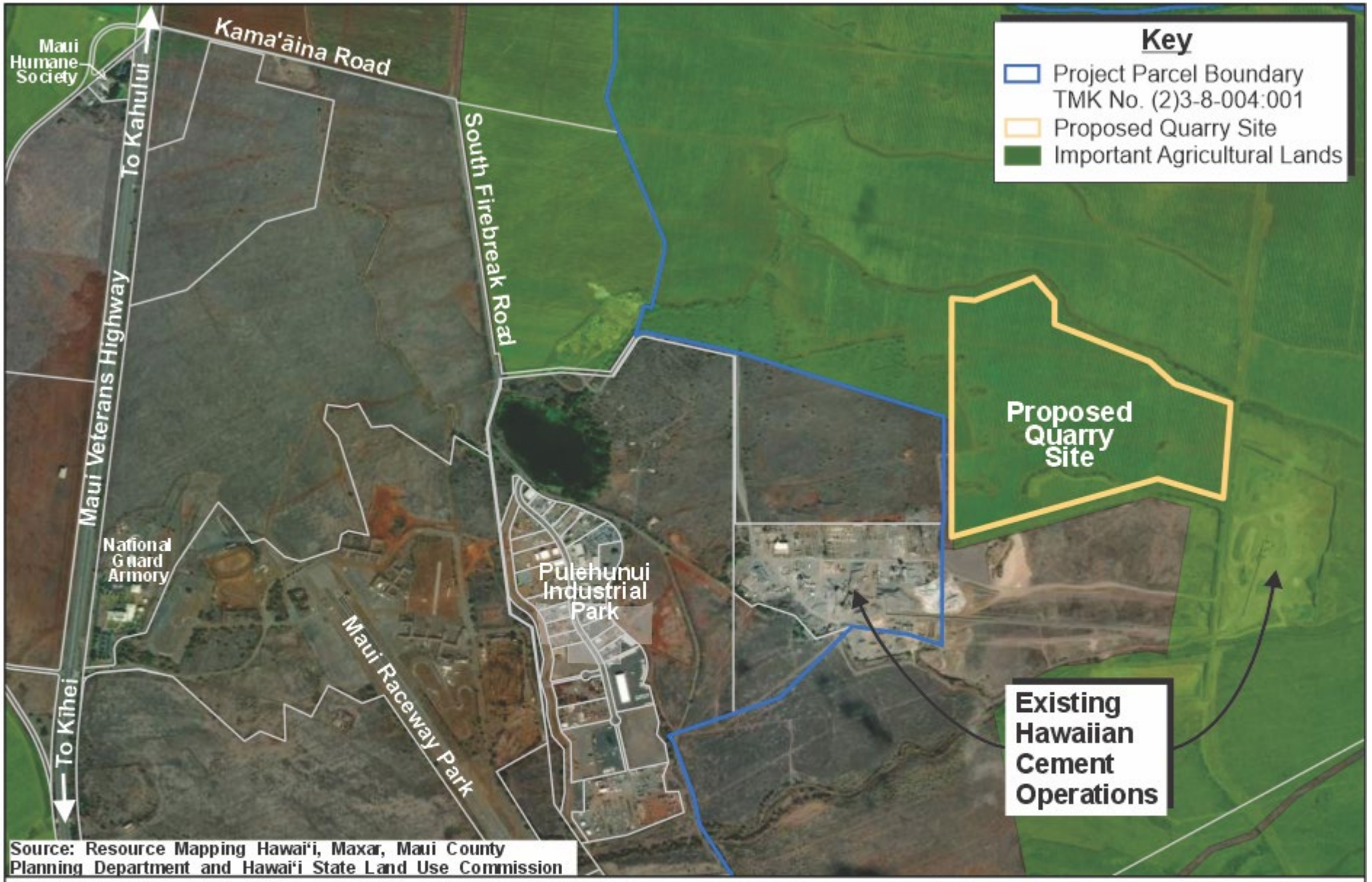


Figure 11

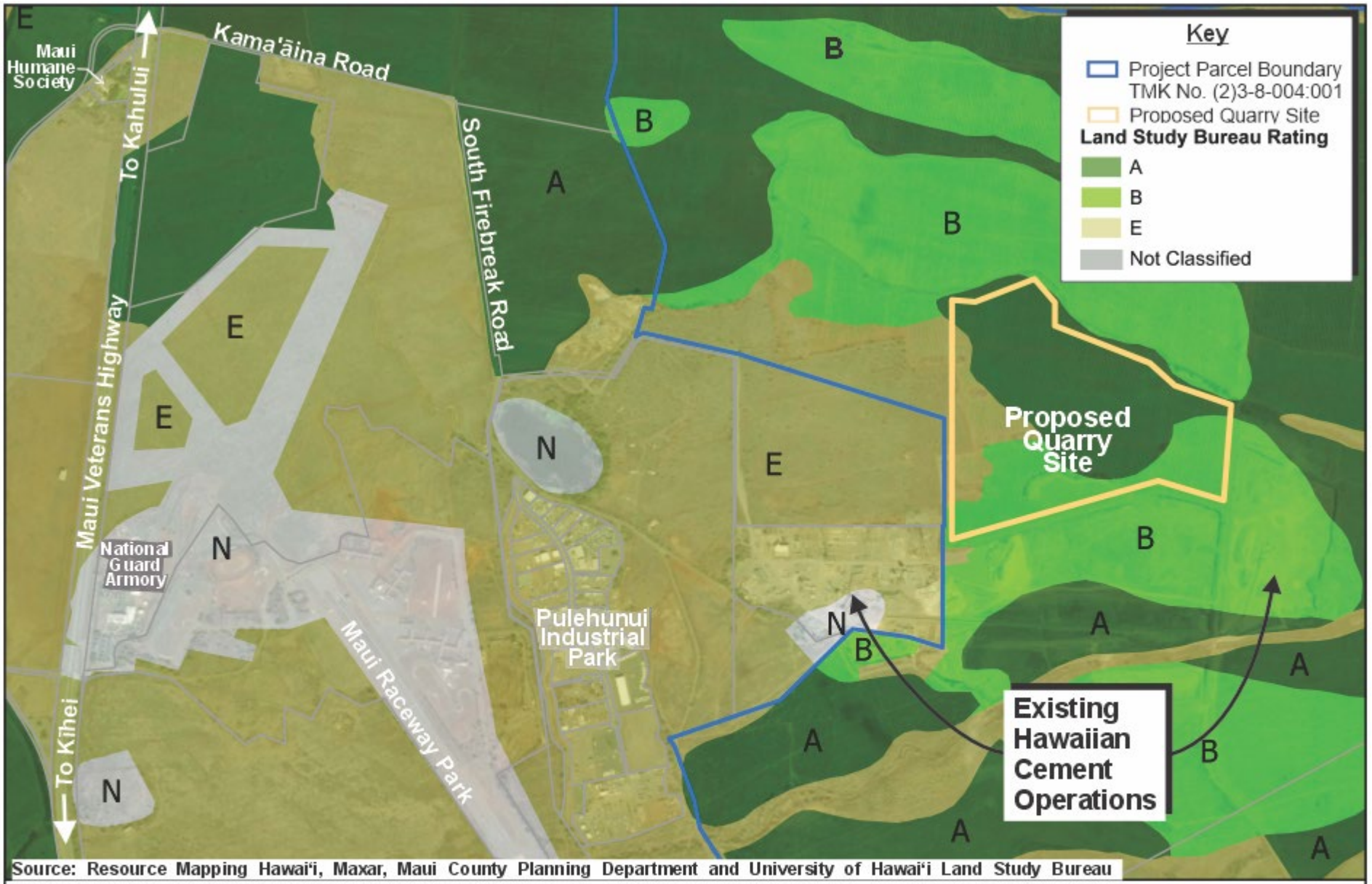
Hawaiian Cement Proposed Pu'unēnē Supplemental Quarry
Important Agricultural Lands Map

0 750 1,500
Feet

MUNEKIYO HIRAGA

Prepared for: Hawaiian Cement

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Key
Project Parcel Boundary
TMK No. (2)3-8-004:001
Proposed Quarry Site
Land Study Bureau Rating
A
B
E
Not Classified
Maui Humane Society
To Kahului
Kama'āina Road
South Firebreak Road
Maui Veterans Highway
National Guard Armory
Maui Raceway Park
Pulehunui Industrial Park
To Kīhei
Proposed Quarry Site
Existing Hawaiian Cement Operations
Source: Resource Mapping Hawai'i, Maxar, Maui County Planning Department and University of Hawai'i Land Study Bureau
Figure 12
Hawaiian Cement Proposed
Pu'unēnē Supplemental Quarry
Land Study Bureau Map
0 750 1,500
Feet
MUNEKIYO HIRAGA
Prepared for: Hawaiian Cement
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proposed site, and tend to be characteristics of agricultural land. Furthermore, the site has enough subgrade stone resources to support quarry operations for an estimated 20 years as well as its location adjacent to the Applicant's existing operations, making it an ideal candidate. The Applicant explored the possibility of using other alternative sites, but the need for high-quality stone deposits, as well as proximity to the existing processing facility, were uniquely satisfied by the proposed site.

It is also noted that the Supplemental Quarry site is not unique among Maui's Important Agricultural Land or "Prime" ALISH Lands, and that it constitutes only a small portion of such lands. More generally, the total land area actively used for crops and grazing on Maui was approximately 123,000 acres in 2020. This constituted roughly 53 percent of the total State Agricultural district lands on Maui, leaving approximately 111,000 acres of State Agricultural land unused as of 2020. The proposed quarry site thus constitutes approximately 0.1 percent of available agricultural land on Maui. Likewise, at 125 acres, the Supplemental Quarry area represents only a small portion of MPL's usable agricultural land.

C. AIR AND NOISE QUALITY

1. Existing Conditions

Air quality in Central Maui is generally considered to be good, in part thanks to the strong prevailing trade winds that are tunneled between the West Maui Mountains and Haleakalā. In the vicinity of the Supplemental Quarry site, air quality may be affected by the nearby industrial uses, including the Pulehunui Industrial Park and the current quarry area.

Similarly, noise conditions are generally good on the project site, as there is significant distance to Maui Veterans Highway, the nearest major road. However, farming equipment and industrial uses, including the quarry itself, may contribute to elevated noise levels during working hours.

2. Potential Impacts and Mitigation Measures

Mining operations may release particulates into the air, affecting localized air quality. BMPs will be employed to minimize these negative effects, including use of water wagons to prevent dust from becoming airborne. The Applicant is required to secure an Air Permit from the Department of Health (DOH) for its quarry operation. Any conditions required by the DOH will be complied with at the Supplemental Quarry site.

Likewise, noise will be produced by mining and processing operations on the new quarry site. However, the noise impacts are not expected to be significantly greater

for the Supplemental Quarry site compared to those of the current operations. There are no sensitive noise receptors as the area is generally surrounded by lands used for agricultural operations or other industrial uses, within close proximity of the Supplemental Quarry site.

D. FLORA AND FAUNA

1. Existing Conditions

A Flora and Fauna Survey Report was prepared for the proposed project by AECOS, Inc. in order to assess its effect on plant and animal life in the vicinity of the project site. See **Appendix "A"**. The report documents the results of botanical, avian, and mammalian surveys undertaken by biologists on October 28th and 29th, 2024.

During the botanical survey, biologists covered the entirety of the project area on foot to thoroughly document plant life. Species were noted as they were discovered, and plants that could not be identified onsite were either photographed or sampled for further analysis. The proposed quarry site is currently being used as a citrus orchard by MPL. As a result, the site is mainly occupied by lime trees. In order to maximize agricultural production, little other vegetation is present on the site. However, the botanical survey also noted the presence of typical savannah vegetation, dominated by kiawe trees and buffelgrass. In addition to these typical introduced species, a total of three (3) native species (paʻūohiʻiaka, ʻilima, and ʻuhaloa) and one (1) canoe plant (pōpolo) were found. Canoe plants are those introduced to the Hawaiian Islands before the arrival of European colonialism. No endangered or endemic plants were located.

The avian survey was conducted in the morning hours in ideal weather conditions. Biologists documented birds through visual observations with the aid of binoculars as well as by listening for calls. A total of 20 species were documented, including the Nēnē, or Hawaiian Goose. The Nēnē is listed as "threatened" under Federal law and "endangered" under Hawaiʻi State law. The remaining 19 species were introduced to Hawaiʻi and are not listed at the Federal or State level.

Finally, the mammalian survey was undertaken by visual inspection of animals themselves and other signs such as scat and tracks. Four (4) mammalian species were listed: Asian Mongoose, pig, Axis Deer, and stray cats. No threatened or endangered species were found.

2. Potential Impacts and Mitigation Measures

The Flora and Fauna Survey Report lists recommendations that, if implemented with care, would minimize potential adverse impacts to biological resources.

Though no tree tobacco was observed on the project site, this common habitat for the Federally and State listed Blackburn's Sphinx Moth is found nearby and may spread to the property. In order to prevent adverse impact to this endangered insect, any observed tree tobacco plants should be removed before they reach three (3) feet in height. The project area should be surveyed for any new growth of tree tobacco every four (4) to six (6) weeks. If any plants are found that have already exceeded three (3) feet in height, a qualified biologist must inspect them before they can be removed, in order to ensure that there is no presence of eggs or larvae.

As mentioned above, Nēnē were observed on the project site. If any Nēnē are observed during work, they should not be fed, approached, or disturbed. All work on the quarry site must cease if a Nēnē nest is discovered within 150 feet of human activity. During the breeding season, which lasts from September to April, a qualified biologist should be consulted if Nēnē are observed onsite in order to conduct a nesting survey. Repeat surveys should be conducted each time work ceases for three (3) or more days, during which time the birds may have sufficient time to nest.

In addition to the above recommendations related to Nēnē, the Flora and Fauna report notes additional guidelines for protecting listed seabirds. Though no such species were observed during the avian survey, they may traverse the project area when flying to and from the ocean. To protect these birds, work on the project site should be limited to daylight hours when possible, as nighttime lighting can be disorienting and cause fatal collisions. If night time work must occur, all lighting should be shielded downwards and downward facing. Finally, any standing water pooling in excavation sites should be filled or removed at the end of each work day to avoid attracting the endangered Aeʻo, or Hawaiian Stilt, which forage in marshy areas.

Though none were observed during the survey, the Opeʻapeʻa, or Hawaiian Hoary Bat, may be present on the project site, as suitable trees for roosting are present. To avoid adverse impacts to the Opeʻapeʻa, woody vegetation taller than 15 feet should not be removed during the pupping season, which lasts from June 1st to September 15th each year. In addition, any existing barbed wire should be removed from the project site and no new barbed wire should be installed, as bats frequently become snared and injured in fences.

Through implementation of the above summarized mitigation measures, the proposed project's adverse impacts on biological resources will be minimized to the greatest extent possible.

E. ARCHAEOLOGICAL AND CULTURAL RESOURCES

1. Existing Conditions

Hawaiian Cement's proposed Supplemental Quarry site is located on lands which have been heavily altered over the years. The lands underlying the property have been extensively disturbed in the past and present as a result of commercial agriculture activity, especially sugar cane cultivation.

Consultation with the State Historic Preservation Division (SHPD) was initiated as part of the review of the project site pursuant to HRS 6E-42. The SHPD responded that an Archaeological Inventory Survey (AIS) should be prepared for the proposed project to determine the potential presence of archaeological resources and to assist in determining mitigation measures, as may be needed. See **Appendix "B"**.

In addition, a Cultural Impact Assessment (CIA) report was prepared by Cultural Surveys Hawai'i for the proposed Supplemental Quarry site in order to analyze the effects of the proposed action on cultural resources and activity in the area. The CIA report included historical background information for the project area as well as input from people with historical knowledge of the area, cultural practioners or long-time residents with knowledge of the area. Based on the results of community consultation and background research conducted as part of this CIA, the following cultural resources and practices were identified within Pūlehunui Ahupua'a where the Supplemental Quarry site is located: 1. Agricultural and gathering practices, 2. Plant resources, 3. Coastal and marine resources, and 4. Mo'olelo (stories) and wahi pana (storied places). **See Appendix "C"**.

2. Potential Impacts and Mitigation Measures

The proposed project is proceeding with the preparation of an AIS. In preparation of the AIS, a testing strategy was prepared and submitted to the SHPD for review and approval. Refer to **Appendix "B"**. The SHPD approved the AIS testing strategy and the Applicant's archaeological consultant has completed the field work for the site. During field work, no significant archaeological features were found. A draft AIS report is currently being prepared for review and approval by the SHPD. In accordance with the favorable findings of the field investigations, the AIS will recommend that no further archaeological work be undertaken. Operation of the Supplemental Quarry site will not commence until HRS 6E-42 consultation with the SHPD is complete.

The CIA prepared for the proposed project did not identify any adverse impacts to cultural resources that were likely to result from the proposed project. However, the report noted that the site was relevant to past agricultural and gathering practices, coastal and marine resources, and mo'olelo and wahi pana. Potential

adverse impacts to these past cultural activities and relevance can be avoided or minimized by informing all workers on the site of the possibility of inadvertent discovery of cultural artifacts, including human remains. If such a find occurs, all work in the area will cease and the SHPD will be contacted for assistance. In addition, cultural or lineal descendents to the area should be notified to be involved in the preparation of reintegration and cultural preservation plans. Refer to **Appendix "C"**.

F. ROADWAYS AND ACCESS

1. Existing Conditions

The proposed Supplemental Quarry site is primarily serviced from the west by the State of Hawai'i's Maui Veterans Highway and Kama'āina Road.

In the vicinity of the project area, Maui Veterans Highway (formerly Mokulele Highway) is a four-lane divided highway with a north-south orientation. Maui Veterans Highway is a State of Hawai'i roadway. A traffic signal is provided at its intersection with Kama'āina Road, where the speed limit on Maui Veterans Highway is 45 miles per hour (mph). Access to the Hawaiian Cement Pu'unēnē quarry is provided by Kama'āina Road. The road terminates at the quarry to the east and is privately owned. The roadway is a two-lane, two-way road and also provides access to the Pulehunui Industrial Park.

2. Potential Impacts and Mitigation Measures

The existing quarry site and processing facility have been in operation since 1992 and constitute an established use within the area. Access to the quarry and processing facility will continue to be provided via the existing access off of Kama'āina Road via Maui Veterans Highway. Access to the Supplemental Quarry site itself will be provided from the existing processing facility. A secondary legal access is also present on the site which may also be used as necessary. The proposed change in quarry location will not lead to an increase in intensity of use. As such, no adverse impacts to traffic conditions or roadways are anticipated as a result of relocating quarry operations to the proposed supplemental area.

G. WATER AND WASTEWATER SYSTEMS

1. Existing Conditions

Domestic water for the Wailuku-Kahului region is provided by the Department of Water Supply's (DWS) Central Maui Water System. The Central Maui System is sourced by groundwater deposits located on the windward slope of the West Maui Mountains, namely 'Īao Aquifer and the Waihe'e Aquifer. Approximately 75 percent

of Central Maui's water supply is withdrawn from the ʻĪao Aquifer, located in the vicinity of the ʻĪao Stream and Waiʻehu Stream, with the remaining 25 percent being withdrawn from Waiheʻe Aquifer to the northwest.

The regulatory sustainable yield of a groundwater source is defined as the maximum rate at which water can be extracted without causing lasting effects to the aquifer or the hydrologic cycle. For the ʻĪao Aquifer, the sustainable yield is 20 million gallons per day (MGD) while for the Waiheʻe Aquifer can provide at most 8 MGD.

The DWS does not supply potable water to the proposed quarry site or the existing processing facility. Non-potable water for the quarry is provided through a private well that Hawaiian Cement constructed within the processing facility, and is utilized for concrete batching, dust control and cleaning equipment. Potable water for employees is provided on site through private bottled water vendors.

There is no existing County wastewater service to the existing or proposed Supplemental Quarry sites or the processing facility. Wastewater service for the existing operations is provided via portable toilet units, a service contracted by the Applicant through a private vendor.

2. Potential Impacts and Mitigation Measures

Hawaiian Cement's Puʻunēnē quarry is currently in operation, and the proposed change in location of the quarry will not require construction of additional water or wastewater infrastrucure. Existing water and restroom services will continue to be maintained in the processing facility and in active quarrying areas of the proposed quarry site. As such, no adverse impacts to existing water or wastewater systems are anticipated.

H. DRAINAGE

1. Existing Conditions

In October 2024, R.T. Tanaka Engineers, Inc. prepared a Preliminary Drainage and Soil Erosion Control Study for the proposed quarry site. See **Appendix "D"**. According to the report, the elevation at the proposed Supplemental Quarry site ranges from 220 to 290 feet above mean sea level (amsl). The highest points are found on the eastern side of the site, and the terrain gently slopes down to the west at an average grade of two (2) percent. No significant topographical features are found on the site itself, though an unnamed drainageway borders the site to the north. Kolaloa Gulch is also located near the proposed site to the south. See **Figure 13**.

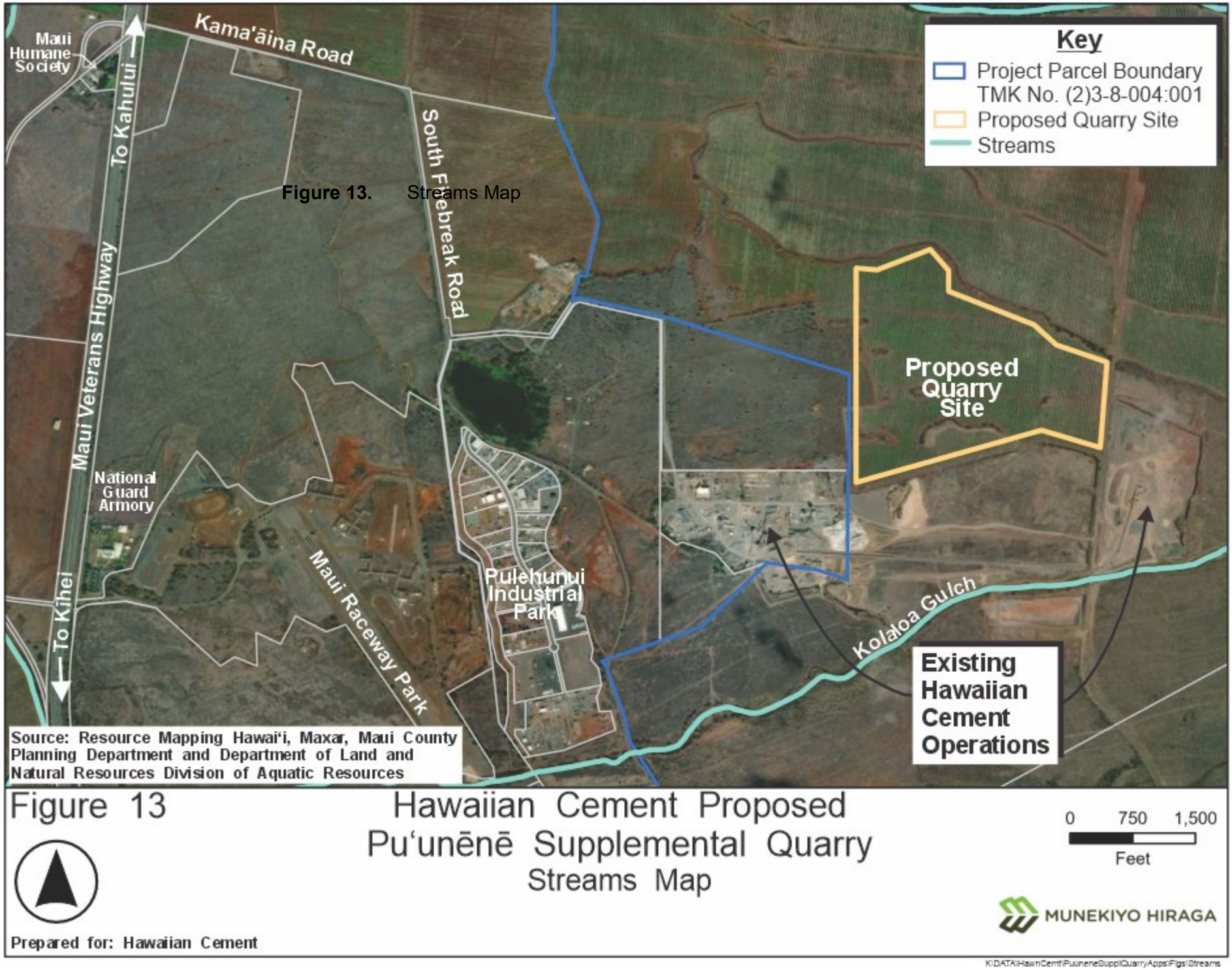


Figure 13. Streams Map

As mentioned above, the proposed site is currently occupied by an MPL citrus orchard. Existing runoff generally sheet flows from the eastern end of the proposed quarry site to the west, following the gentle slope of the property. Drainage water from the southern portion of the site then flows into the processing facility, while runoff from the northern portion of the site flows into the aforementioned drainageway. Runoff from the land to the mauka (east) and north sides of the site is diverted into the northern drainage ditch and does not affect the proposed quarry area. The lands to the south and west of the site are at lower elevation and, therefore, also do not contribute to runoff volumes on the proposed Supplemental Quarry site. The proposed site has no existing drainage infrastructure systems.

The proposed quarry site is located within Flood Zone X according to the Federal Emergency Management Agency's Flood Insurance Rate Map for the area. See **Figure 14**. Flood Zone X is characterized by minimal flood risk.

2. Potential Impacts and Mitigation Measures

Runoff volume and velocity will increase in active excavation and mining areas due to removal of soil. The extent of the increase was calculated based on a 30-acre area of mining activity with an overland flow length of 1,600 feet, according to the incremental mining plan proposed by Hawaiian Cement. Since areas in which mining has been completed will be backfilled with soil, and areas yet to be mined will remain as citrus orchards, it is assumed that past and future mining areas will behave according to the existing drainage conditions described above.

With the above described parameters, the rational method was used to calculate the increased runoff rate and volume according to the 10-year and 50-year 1-hour design storm intensities, respectively. It was calculated that 10-year storm runoff rate will increase by 21.9 cubic feet per second (cfs), from 26.1 cfs to 48.0 cfs. Likewise, the 50-year design storm will lead to an increase in runoff volume of 797 cubic feet (cf) per acre of graded area, or 23,898 cf in total. Drainage improvements on the proposed quarry site will be designed to hold the entirety of the increased volume due to the 50-year storm. Refer to **Appendix "D"**.

To account for the increased drainage volume, retention ponds will be constructed on the western, downhill side of the proposed Supplemental Quarry site. These ponds will be designed to hold the entire volume of additional runoff from mining activities as discussed above. In addition, the ponds will capture sediment contained in drainage flows, preventing it from entering downstream properties and Kolaloa Gulch. Quarrying operations will also leave large depressions in the ground, even after completed mining increments are backfilled with soil, adding to the capacity of the proposed quarry area to hold runoff onsite.

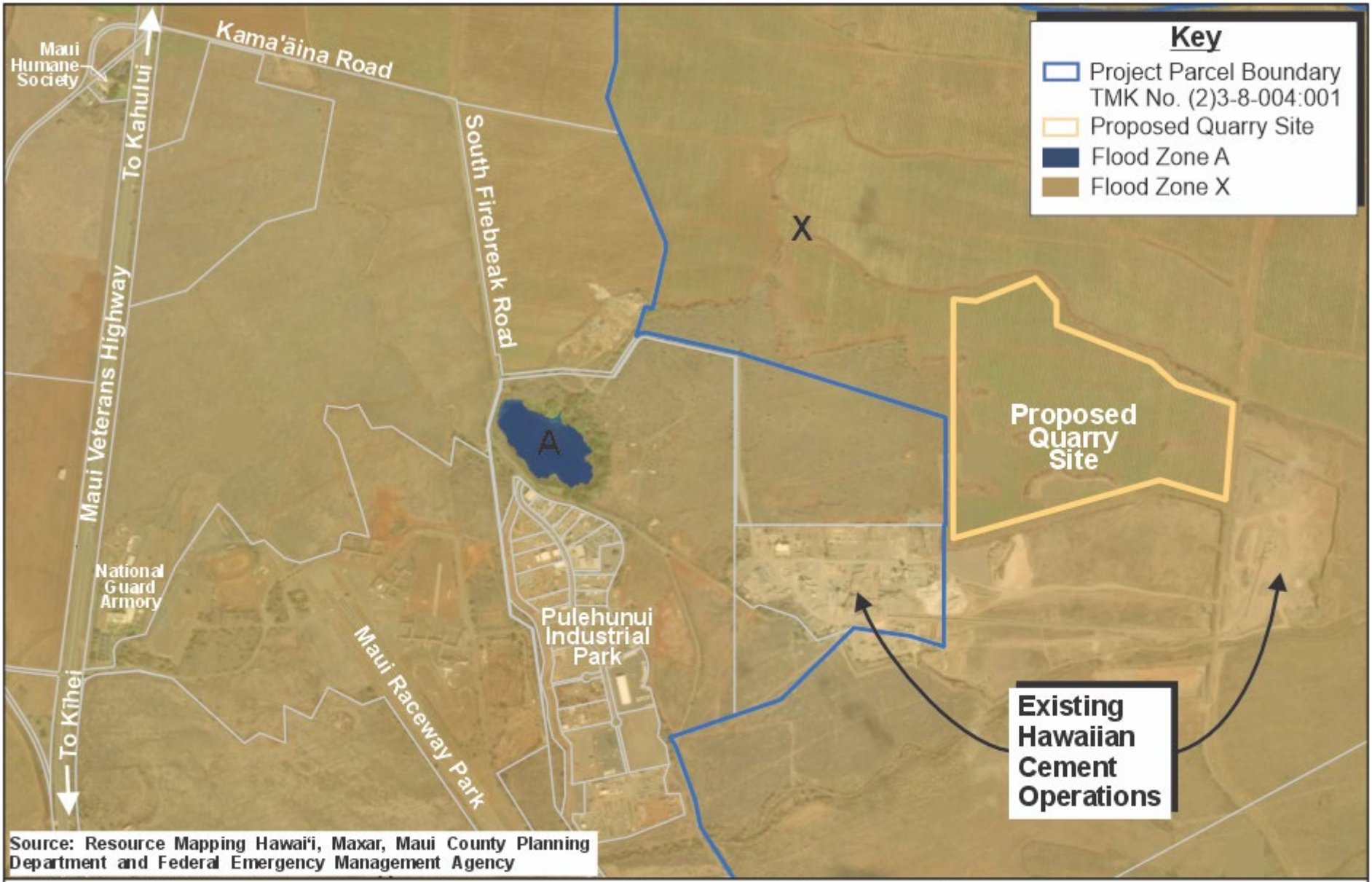


Figure 14

Hawaiian Cement Proposed Pu'unēnē Supplemental Quarry
Flood Hazard Zones Map

0 750 1,500
Feet

MUNEKIYO HIRAGA

Prepared for: Hawaiian Cement

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In addition to the retention ponds, BMPs will be implemented by the Applicant as part of mining operations, in conformance with County regulations. Specific BMPs include the following:

- Incremental mining to the extent possible. The exposed area at any given time will not be larger than 30 acres.
- Stabilization of areas where mining is completed through the use of soil backfill and replanting.
- Control of dust through the use of water wagons as necessary, including on weekends and holidays.

With the above improvements and BMPs, the proposed project is not anticipated to have adverse drainage effects on Kolaloa Gulch and downstream properties.

As discussed above, there will be no appreciable offsite runoff from areas mauka of the proposed Supplemental Quarry area flowing into the proposed quarry site, as these flows will be intercepted at Upper Kīhei Road and diverted to the northern drainageway outside of the project area.

I. SOCIO-ECONOMIC RESOURCES

1. Existing Conditions

According to the 2020 U.S. Census, the population of Maui County was 164,754 in that year, an increase of 6.4 percent since 2010, when the County had a population of 154,834 (U.S. Census Bureau, 2020). It is noted, however, that population growth over the past decade has been uneven, with stronger growth in the early part of the decade. The U.S. Census Bureau's annual population estimate data indicates that the Maui County population grew steadily between 2010 and 2014, when annual population growth rates ranged from 1.2 percent to 1.3 percent. On the other hand, the estimated population in 2014 was 163,036, showcasing slower growth between 2014 and 2020. Furthermore, the American Community Survey 2023 population estimate for Maui County was 164,244, a slight decrease from 2020. Possible explanations for the decline in population growth include the effects of the Covid-19 pandemic and the August 2023 wildfire in Lahaina.

The State of Hawai'i, Department of Business, Economic Development and Tourism (DBEDT) publishes population projections through 2050. According to the latest forecast, which was published in 2024, Maui County's population is expected to grow to 184,870 by 2040 (State of Hawai'i, DBEDT, 2024).

Hawai‘i’s economy through 2019 was strong, with record-setting visitor arrivals and low unemployment. However, the COVID-19 pandemic had far reaching impacts on the economy on Maui, in Hawai‘i, and across the nation. Stay-at-home regulations and travel quarantines aimed to curb the spread of the COVID-19 virus in Hawai‘i caused many businesses to shut down or drastically reduce their operations.

With the end of the pandemic and return of the visitor industry, Maui’s economy was growing through the first half of 2023. However, the tragic wildfires in August 2023 brought significant economic effects along with tragic destruction. Although the project area was not directly impacted by the fires, the entire Maui community continues to experience economic disruption. For example, the unemployment rate in Maui County was 2.8 percent in July 2023, but rose to 8.4 percent by September 2023. As was the case with the pandemic, however, the economy is beginning to improve again: as of the end of 2024, the unemployment rate for Maui County dropped to 3.6 percent (State of Hawai‘i, Department of Business, Economic Development and Tourism, 2025).

2. Potential Impacts and Mitigation Measures

The relocation of quarry operations to the proposed site is not expected to have significant impact on social conditions in Maui. The population of the island will not change as a result, since the relocation will not create jobs or result in loss of jobs. However, Maui’s projected population growth means that demand for housing, and hence building materials produced by the Applicant, is expected to grow in coming years. Further, the anticipated rebuilding of Lahaina Town and the surrounding area that were destroyed by the August 2023 wildfire, has been initiated. Construction activity related to the rebuilding is anticipated to take several years. The importance of its products renders the Applicant an essential component of Maui’s construction industry. The proposed quarry will allow Hawaiian Cement to continue production, providing the island with a key component of economic development. The Supplemental Quarry will also allow Hawaiian Cement to retain its employee base, providing living-wage jobs to members of the Maui community.

The Applicant is one of the largest producers of aggregate and other similar materials on the island of Maui and in the State of Hawai‘i. Aggregate refers collectively to sand, gravel, and crushed stone. It is widely used in the construction of buildings and roads as structural fill or as an ingredient in asphalt or concrete. The Applicant also facilitates the import of cement for the County of Maui. Cement, which is a key ingredient in concrete, is used for several applications in nearly all forms of construction from single family to commercial.

JUSTIFICATION FOR REQUESTS

IV

IV. JUSTIFICATION FOR REQUESTS

A. STATE LAND USE COMMISSION SPECIAL USE PERMIT BOUNDARY AMENDMENT REQUEST

The Hawaiian Cement Puʻunēnē Quarry has been used for quarrying and mining related activities since 1992 and is an established use within the area. The current boundaries of SP92-380 are shown in **Figure 1**. Hawaiian Cement seeks an amendment to SP92-380 to incorporate the proposed quarry site of 125 acres, while removing the entirety of the current quarry area (Extraction Sites 1 to 5), effective starting in January 31, 2027. Refer to **Figure 2** and **Figure 3**.

Pursuant to Section 15-15-95, Hawaiʻi Administrative Rules (HAR), certain *"reasonable and unusual"* uses may be permitted within the Agricultural District. The proposed amendment to SP92-380 to permit the Supplemental Quarry sites and remove the previously permitted quarry areas has been assessed pursuant to Section 15-15-95 HAR as follows:

(1) The use shall not be contrary to the objectives sought to be accomplished by chapters 205 and 205A, HRS, and the rules of the commission;

The purpose of the Land Use Law, Chapter 205, is to preserve, protect, and encourage the development of lands in the State for those uses to which these lands are best suited in the interest of public health and welfare of the people of the State of Hawaiʻi. The request to allow the unusual use of quarrying on the project site has been undertaken in recognition of the need to provide a source of aggregate and base course products, as well as the proximity of the location in relation to associated operations. The proposed project will provide a local source for materials that are essential to sustaining the local construction industry.

The use of the property for quarrying and related operations is considered important to the welfare interests of the island's residents. This is especially true in the context of recovery from the Lahaina wildfires of August 2023, which destroyed a large number of buildings and significantly damaged infrastructure systems and public services. In addition, Maui's population is anticipated to grow in the coming years, necessitating expansion of infrastructure and housing. Rebuilding Lahaina and providing affordable housing for Maui's future growth will require the rock material that can be provided at the project site.

The proposed unusual use is that which is best suited to the proposed site despite not being directly related to agricultural use. Quarrying requires a source of rock material as well as open, relatively flat land, which are both qualities held by the

proposed site, and tend to be characteristics of the agricultural district more than any of the others. Furthermore, the site has subgrade stone resources anticipated to support quarry operations for 20 years, making it an ideal candidate. Alternative sites near the existing processing facility were assessed as well, as land was available which had lower soil quality and agricultural production potential. However, no alternative site identified had sufficient subgrade stone resources to support quarrying operations. Further, the Supplemental Quarry area will be made available for agricultural uses, following the completion of removal of rock. Combined with the expected benefit of the proposed use, these factors demonstrate substantial compliance with Chapter 205.

(2) The desired use would not adversely affect surrounding property;

The proposed use would not adversely affect the surrounding property, which is currently occupied by the current Hawaiian Cement quarry sites and agricultural land owned by MP Central A, LLC. With the implementation of the proposed drainage improvements and other BMPs, the quarry activity is not anticipated to contribute runoff or pollutants that could affect downstream agricultural uses or industrial uses. Further, while there may be some impacts related to air quality and noise during the quarrying operations, implementation of BMPs, and lack of sensitive surrounding land uses adjacent to the Supplemental Quarry site will ensure that adverse effects are minimized. As such, the proposed quarry area is not anticipated to have any detrimental impact on surrounding industrial operations.

(3) The use would not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage and school improvements, and police and fire protection;

Access to the proposed Supplemental Quarry area will be provided by Kamaʻāina Road as is the case with the current quarry. The Applicant plans to access the proposed site via a new entrance from the processing facility. While a portion of the access point will be located within the State-owned parcel containing the processing facility, the Applicant will provide the funding and maintenance for this element of the proposed project, so no additional burden will be placed on the State or County. An alternative access point is also located on the site, which may be used as necessary. As the proposed action largely constitutes a replacement of the current quarry, it will not increase the population in the area by virtue of attracting additional workers. The new quarry site will not require water or wastewater service from the County of Maui nor expand the service area for police and fire protection. Therefore, the project will have minimal impact on public services.

(4) Unusual conditions, trends, and needs have arisen since the district boundaries and rules were established; and

As previously noted, the Applicant has initially applied for an amendment to its existing SUP and CUP in 2021 for the Pu‘unene Quarry. However, during the review and processing of said amendment requests, the land where the existing quarry is located was sold to a new owner. The new owner informed Hawaiian Cement that it would be terminating the lease for the property in January 2027. As such, the Applicant sought a new quarry location, in order to provide an uninterrupted supply of aggregate. Additionally, demand due to the rebuilding following the Lahaina wildfires of August 2023 have created an urgent need for reconstruction of homes, commercial buildings, and infrastructure. The new quarry will enable Hawaiian Cement to meet the increased demand and continue to provide the island with essential building materials.

(5) The land upon which the proposed use is sought is unsuited for the uses permitted within the district.

The proposed quarry site is surrounded to the southeast, south, and southwest by the active Hawaiian Cement quarrying operation. At 125 acres, the Supplemental Quarry area represents only a small portion of Mahi Pono, LLC’s usable agricultural land. Furthermore, the site contains stone deposits for approximately 20 years of quarry operations, rendering it ideal for the proposed use. Additionally, the Applicant intends to return the land to agricultural use, following the completion of quarrying activities. Therefore, the quarry operation is temporary and would allow for the land to continue to be utilized for agricultural operations.

B. COUNTY SPECIAL USE PERMIT BOUNDARY AMENDMENT REQUEST

The Applicant’s proposed amendment to exchange the proposed Supplemental Quarry area for the existing quarry area does not adversely impact public services or infrastructure, and is consistent with surrounding land uses as has been previously assessed in regards to CUP 2006/0002. The proposed amendment has also been assessed with respect to the County Special Use Permit criteria contained in Maui County Code (MCC) Section 19.510.070:

(1) The proposed request meets the intent of the general plan and the objectives and policies of the applicable community plan of the county;

The purpose of the General Plan of the County of Maui is to:

> *“...indicate desired population and physical development patterns for each island and region within the county; shall address the*

unique problems and needs of each island and region; shall explain opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density, land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development"

The proposed project supports the goals outlined in the Countywide Policy Plan and Maui Island Plan related to strengthening Maui's economy by virtue of providing essential building materials locally. This service is especially important in the context of rebuilding efforts in Lahaina, which will require the products produced by the Applicant. Likewise, the proposed project does not contravene objectives related to protecting the natural environment and cultural and historic resources.

The proposed Supplemental Quarry site is located within the Kihei-Makena Community Plan area. The Kihei-Makena Community Plan outlines several goals, policies, and objectives that are meant to guide development some of which have been use to evaluate the proposed project below:

Economic Activity:

Goal:

A diversified and stable economic base which serves resident and visitor needs while providing long-term resident employment.

Objectives and Policies:

d. Establish balance between visitor industry employment and non-visitor industry employment.

e. Provide for the preservation and enhancement of important agricultural lands for a variety of agricultural activities, including sugar cane, diversified agriculture and aquaculture.

Response:

As mentioned above, the proposed project will provide economic benefit to the South Maui area and Maui island as a whole by virtue of providing essential building materials for use in residential, commercial, and infrastructure construction. These materials are especially important in the context of the rebuilding efforts in Lahaina, which will entail reconstruction of single-family homes, small businesses, and damaged infrastructure systems. In addition, the continued existence of the Applicant's quarry will continue to provide local jobs. The proposed project will also have minimal effects on agricultural lands due to the use of incremental mining. Mined areas will have their soil returned and stabilized following completion of quarry activities.

Environment:

Goal:

Preservation, protection, and enhancement of Kihei-Makena's unique and fragile environmental resources.

Response:

The proposed project is intended to provide aggregate and cement products while causing the minimum possible environmental effects. To that end, mined areas will have soil replaced and stabilized following completion of mining activity. In addition, sedimentation and runoff effects will be mitigated through the use of retention basins designed to capture the full increase in runoff caused by removal of soil in active mining areas. Additional BMPs will prevent environmental effects related to air and noise quality as well. Refer to **Appendix "D"**.

Cultural Resources:

Goal:

Identification, preservation, enhancement, and appropriate use of cultural resources, cultural practices, and historic sites that:

1. *Provides a sense of history and defines a sense of place for the Kihei-Makena region; and*

2. *Preserves and protects native Hawaiian rights customarily and traditionally exercised for subsistence, cultural and religious*

purposes in accordance with Article XII, Section 7, of the Hawaii State Constitution, and the Hawaii Supreme Court's PASH opinion, 79 HAW. 425 (1995).

***Implementing Actions*:**

b. Require development projects to identify all cultural resources located within or adjacent to the project area, prior to application, as part of the County development review process. Further require that all proposed activity include recommendations to mitigate potential adverse impacts on cultural resources, including site avoidance, adequate buffer areas and interpretation. Particular attention should be directed toward the southern areas of the planning region.

Response:

A Cultural Impact Assessment (CIA) was prepared for the proposed project in order to document any cultural resources or practices on the proposed site and suggest mitigation measures. The CIA did not identify any such resources or practices, though it did note that inadvertent discovery of subgrade archaeological resources is possible during mining activities. If such a finding occurs, all work will cease in the area and the SHPD will be contacted in order to ensure that proper care is taken. Refer to **Appendix "C"**.

(2) The proposed request is consistent with the applicable community plan land use map of the county;

The proposed project site is designated as agricultural land by the Kihei-Makena Community Plan. Refer to **Figure 5**. As discussed above, despite the fact that quarry operation is not permitted outright on agricultural lands, the proposed project is in alignment with the goals and objectives of the Community Plan.

(3) The proposed request meets the intent and purpose of the applicable district;

The proposed project site is designated as Agricultural land by the State Land Use Commission and Maui County zoning. According to MCC Section 19.30A.010, the purpose of the County Agricultural district is to:

1. *Implement chapter 205, Hawai'i Revised Statutes, and the goals and policies of the Maui County general plan and community plans;*
2. *Promote agricultural development;*
3. *Preserve and protect agricultural resources; and*
4. *Support the agricultural charater and components of the County's economy and lifestyle.*

As discussed in the above analysis of the SSP criteria, the proposed project meets the intent and purpose of the State Agriculture district, pursuant to HRS Chapter 205. The proposed project also does not contradict the goals and objectives of the Maui County General Plan and Kihei-Makena Community Plan.

Mining will be undertaken in stages, with at most 30 of the 125 acres being actively used at any time. Existing agricultural activity will be allowed to continue outside of active quarry areas. When quarrying is completed on each 30-acre area, soil will be returned and stabilized, allowing for potential future agricultural use. It is also noted that the 125-acre Supplemental Quarry site constitutes only approximately 0.1 percent of the unused agricultural land on Maui.

Furthermore, the quarry use has been determined to be an appropriate use of the subject lands given the importance of the resources it will produce, particularly in the context of rebuilding efforts in Lahaina; the location of the site adjacent to the established processing facility; and the ideal supply of rock resources on the site.

(4) The proposed development will not adversely affect or interfere with public or private schools, parks, playgrounds, water systems, sewage and solid waste disposal, drainage, roadway and transportation systems, or other public requirements, conveniences, and improvements;

The proposed Supplemental Quarry site is surrounded by agricultural and industrial uses. No parks, schools, or playgrounds are located nearby. As is the case for the existing quarry site, water and wastewater services will be handled by the Applicant through private services. Wastewater is taken care of with portable toilets, and potable water is provided through bottled water vendors. The existing processing facility is equipped with a well for non-potable water, which is used in concrete production, dust control, and cleaning equipment.

In active quarry areas, runoff volume and velocity will increase due to removal of soil. These effects will be mitigated through construction of retention ponds designed to contain the entire volume of additional runoff. Retention ponds will also assist with preventing sedimentation from traveling offsite. Refer to **Appendix "D"**.

As the Supplemental Quarry site is located adjacent to the existing site, no new roadway improvements are anticipated to be needed. Traffic impacts from the proposed project are likewise expected to be minimal since employment at the site will not change.

(5) The proposed development will not adversely impact the social, cultural, economic, environmental, and ecological character and quality of the area;

The proposed project is not expected to have any effect on the social fabric of the South Maui area or the island as a whole. The quarry use is already established, and no jobs will be created or lost as a result of the change in location. Economically, the proposed project will be beneficial by enabling Hawaiian Cement to continue to produce essential building materials locally, providing resources without requiring customers to rely on imported goods.

As discussed earlier in this report, the project is not expected to have adverse effects on archaeological resources or cultural practices. Though the Archaeological Inventory Survey (AIS) for the Supplemental Quarry has not been formally published at the time of writing, completed fieldwork yielded no significant archaeological findings. Refer to **Appendix "B"**. Likewise, the CIA prepared for the proposed project did not identify any cultural practices that would be adversely affected by the proposed use. Refer to **Appendix "C"**.

The potential environmental and ecological effects of the proposed project are detailed in Chapter 3 of this report. No adverse effects are expected to occur with regard to nearby streams, biological resources, or air and water quality. Refer to **Appendix "A"** and **Appendix "D"**.

(6) That the public shall be protected from the deleterious effects of the proposed use;

Potential deleterious effects of the proposed project include increase runoff, sedimentation, and fugitive dust related to the quarrying use. However, these effects will be mitigated with drainage improvements and other BMPs. Refer to **Appendix "D"**. No adverse effects are expected with regard to public services, infrastructure, or the environment.

(7) That the need for public service demands created by the proposed use shall be fulfilled; and

The proposed project is not expected to create any additional public service demands. Water and wastewater services will continue to be handled privately by the Applicant, ensuring that no additional strain is placed upon County systems. Likewise, the quarry use is currently active on the adjacent existing site, so additional fire and public safety service needs are not anticipated.

(8) If the use is located in the state agricultural and rural district, the commission shall review whether the use complies with the guidelines established in section 15-15-95 of the rules of the land use commission of the State.

The guidelines established in item c) of Hawai‘i Administrative Rules (HAR) section 15-15-95 have been analyzed above in relation to the proposed project. This application has been prepared in accordance with section 15-15-95, and the Application will comply with conditions set forth by the Maui Planning Commission regarding the proposed quarry use.

A current compliance report for the CUP application is included as **Appendix “E”**.

REFERENCES V

V. REFERENCES

Munekiyo & Hiraga, Inc., Project Assessment Report for an Amendment to State Land Use Commission Special Use Permit and an Amendment to County Special Use Permit (SP 92-380 and CUP 2006/0002), Hawaiian Cement Puunene Quarry at Puunene, Maui, February 2013.

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APPENDICES

FLORA AND FAUNA SURVEY REPORT

A

AECOS No. 1848

Natural resources survey for Puʻunēnē Quarry Puʻunēnē, Maui



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December 31, 2024

Natural resources survey for Puʻunēnē Quarry Puʻunēnē, Maui

December 31, 2024 *AECOS* No. 1848

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Introduction

Hawaiian Cement proposes to expand an active quarry in Puʻunēnē, Maui onto adjacent land (the "Project"; Figures 1 and 2) and has tasked *AECOS* with an assessment of natural resources on the Project site. This report presents results of those efforts[1].

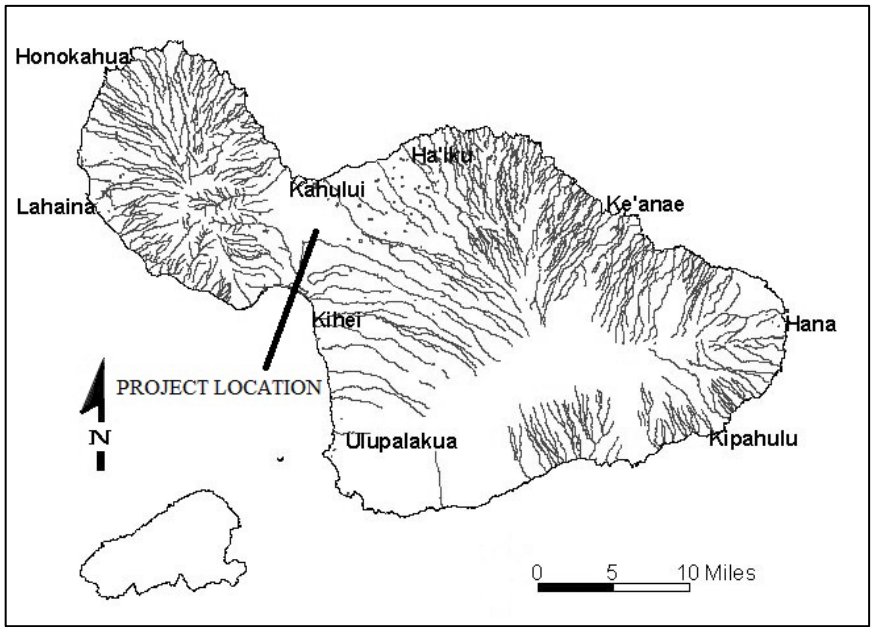


Figure 1. Project location on the Island of Maui.

[1] This report was prepared for Hawaiian Cement and is intended to become part of the public record by incorporation into an EA or EIS for the subject project.

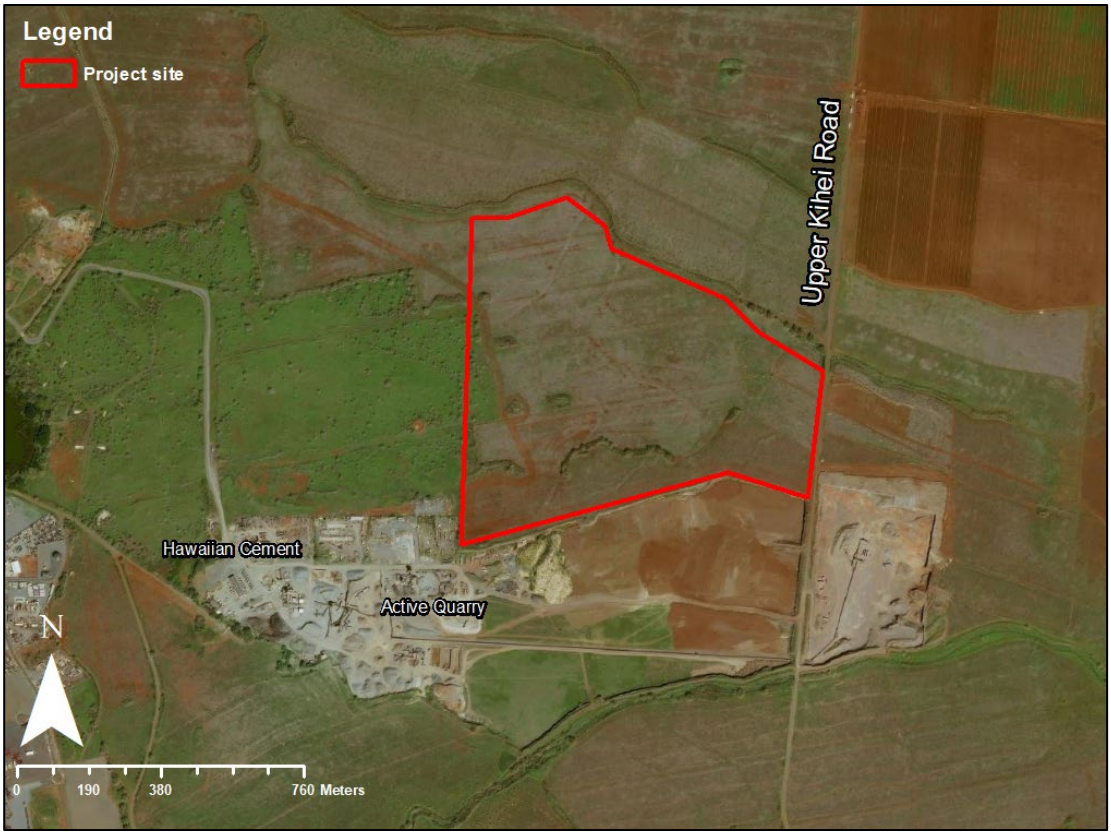


Figure 2. Project site (outlined in red).

Site Description

The Project site is located in central Maui (Fig. 1) on the west side of Upper Kihei Road and northeast of thew current active quarry. The Project area comprises former sugarcane fields now cultivated by Mahi Pono LLC as part of an extensive lime plantation north of the active quarry.

Methods

Botanical Surveys

AECOS biologists surveyed the Project area on October 28 and 29, 2024. Plant species were identified as they were encountered during wandering transects that covered the Project area. Any plant not immediately recognized during the surveys was photographed and/or a representative feature (fruit, flower, branch) collected for later identification at the laboratory. Species names follow *Manual of the Flowering plants of Hawai'i* (Wagner, Herbst, & Sohmer, 1990;

Wagner & Herbst, 1999) for native and naturalized flowering plants and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental and agricultural plants. More recent name changes for naturalized plant species follow Imada (2019).

Fauna Surveys

Avian Survey

An avian survey was conducted by *AECOS* biologists in the morning hours of October 28 and 29, 2024. Birds were identified by visual observations aided by Leica 8 X 42 binoculars, and by listening for vocalizations. Weather conditions were ideal with unlimited visibility, no precipitation, and winds between 10 and 15 kilometers per hour. The avian phylogenetic order and nomenclature used in this report follows the AOU Check-List of North and Middle American Birds (Chesser et al., 2024).

Mammalian Surveys

A list was made of all mammals encountered during the surveys. Indicators of mammalian presence, such as tracks, scat, and other sign were noted. Mammalian phylogenetic order and nomenclature follow *Mammal Species of the World* (Wilson and Reeder, 2005). For Hawaiian hoary bat we follow Pinzari et al. (2020).

Results

Vegetation

The vegetation in the Project area is primarily lime trees (Figure 3A), along with remnant patches of savannah. The savannah is dominated by buffelgrass (*Cenchrus ciliaris*) and *kiawe* (*Prosopis pallida*).

The vegetation on the lime plantation is dominated by Tahitian lime (*Citrus × latifolia*) and herbaceous species that thrive due to the irrigation provided for the lime trees. Notably, two native species, *ʻilima* (*Sida fallax)* and *ʻuhaloa* (*Waltheria indica*), are abundant across this site and showing verdant growth (Figure 3B)[2].

[2] These plants are common throughout the area as recently reported in a plant survey conducted nearby (*AECOS*, 2024).



Figure 3. Views of the survey area: A) Lime plantation and *kiawe*-buffelgrass savannah in the distance. B) *ʻIlima* plants thriving within the lime plantation.

Flora

A botanical listing (flora) with estimated relative abundances for all plant taxa recorded during the October 2024 survey is presented in Table 1. Entries are arranged alphabetically under family names and include scientific name, common name, status (i.e., native or non-native; see key at end of table), and a

relative abundance value. "Status" reflects the state-wide distribution of the species.

We recorded a total of 49 species of vascular plants, all angiosperms (flowering plants). Native plant taxa comprise three indigenous species (native, but also distributed elsewhere in the Pacific) and represent 6% of the total species observed*;* no native endemic plants were recorded. One (2%) Polynesian introduction (so-called "canoe plant") was recorded. The remaining 45 species (92%) are plants introduced to the Hawaiian Islands after 1778, including 44 naturalized species (i.e., grow naturally in the wild) and one ornamental.

Among the native species are: *paʻūohiʻiaka* (*Jacquemontia sandwicensis*), *ʻilima,* and *ʻuhaloa*. The early Polynesian introduction recorded is *pōpolo* (*Solanum americanum*) These species are all common plants across the Hawaiian Islands.

Table 1. Listing of plants observed at the Project area, Maui Island.

Species listed by family	Common name	Status	Abundance	Notes
	FLOWERING PLANTS			
	MONOCOTS			
ARECACEAE				
Livistona chinensis (Jacq.) R.Br. ex Mart.	Chinese fan palm	Nat	R	
POACEAE (GRAMINEAE)				
Cenchrus ciliaris L.	buffelgrass	Nat	A	<2>
Cenchrus echinatus L.	sand bur	Nat	U	
Chloris barbata (L.) Sw.	swollen fingergrass	Nat	A	
Digitaria insularis (L.) Mez ex Ekman	sourgrass	Nat	O	
Eleusine indica (L.) Gaertn.	wiregrass	Nat	U	
Eragrostis pectinacea (Michx.) Nees	Carolina lovegrass	Nat	U	
Megathyrsus maximus (Jacq.) B.K. Simon & W.L. Jacobs	Guinea grass	Nat	O	
Melinus repens (Willd.) Zizka	Natal redtop	Nat	U	
Setaria parviflora (Poir.) Kerguélen	yellow foxtail	Nat	R	
Urochloa distachya (L.) T.Q.Nguyen	---	Nat	C	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
	FLOWERING PLANTS			
	EUDICOTS			
APOCYNACEAE				
Calotropis procera (Aiton) W.T.Aiton	small crownflower	Nat	U	
ASTERACEAE (COMPOSITAE)				
Conyza canadensis (L.) Cronq.	horseweed	Nat	R	
Senecio madagascariensis Poir.	fireweed	Nat	R	
Tridax procumbens L.	coat buttons	Nat	O	
Verbesina encelioides (Cav.) Benth. & Hook.	golden crown-beard	Nat	O	
BORAGINACEAE				
Heliotropum procumbens Mill.	---	Nat	U	
BRASSICACEAE				
Lepidium virginicum L.	Virginia pepperweed	Nat	U	
CHENOPODIACEAE				
Atriplex suberecta Verd.	---	Nat	R	
Salsola tragus L.	tumbleweed	Nat	U	<2>
CONVOLVULACEAE				
Ipomoea obscura (L.) Ker-Gawl.	---	Nat	U	
Ipomoea triloba L.	little bell	Nat	U	
Jacquemontia sandwicensis A. Gray	*paʻūohiʻiaka*	**Ind**	U	
Merremia aegyptia (L.) Urb.	hairy merremia	Nat	U	
CUCURBITACEAE				
Cucumis dipsaceus Ehrenb. ex Spach	teasel gourd	Nat	R	
Momordica charantia L.	wild bitter melon	Nat	U	
EUPHORBIACEAE				
Ricinus communis L.	castor bean	Nat	C	
FABACEAE				
Chamaecrista nictitans (L.) Moench	partridge pea	Nat	U	
Crotalaria assamica Benth.	rattlepod	Nat	O	
Crotalaria incana L.	fuzzy rattlepod	Nat	O	
Crotalaria pallida Aiton	smooth rattlepod	Nat	U	
Desmanthus virgatus (L.) Willd.	virgate mimosa	Nat	R	
Indigofera hendicaphyla Jacq.	creeping indigo	Nat	C	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
FABACEAE (cont .)				
Leucaena leucocephala (Lam.) deWit	*koa haole*	Nat	C	<2>
Macroptilium lathyroides (L.) Urb.	wild bean, cow pea	Nat	C	
Prosopis pallida (Humb. & Bonpl. ex Willd.) Kunth	*kiawe*	Nat	C	<2>
Senna occidentallis (L.) Link	coffee senna	Nat	O	
Vachellia farnesiana (L.) Wight & Arnott	*klu*	Nat	U	
LAMIACEAE				
Leonotis nepetifolia (L.) R. Br.	lion's ear	Nat	U	<2>
MALVACEAE				
Malva parviflora L.	cheese weed	Nat	U	
Malvastrum coromandelianum (L.) Garcke	false mallow	Nat	O	
Sida fallax Walp.	*ʻilima*	**Ind**	C	
Sida rhombifolia L.	---	Nat	O	
Waltheria indica L.	*ʻuhaloa*	**Ind**	A	
PAPAVERACEAE				
Argemone mexicana L.	Mexican poppy	Nat	U	
RUTACEAE				
Citrus × latifolia (Yu.Tanaka) Yu.Tanaka	Tahitian lime	Orn	AA	
SOLANACEAE				
Nicandra physalodes (L.) Gaertn.	apple of Peru	Nat	R	
Solanum americanum Mill.	*pōpolo*	**Pol**	R	
Solanum lycopersicum var. *cerasiforme* (Dunal) Spooner, G. Anderson, & Jansen	cherry tomato	Nat	R	

Legend to Table 1

STATUS = distributional status for the Hawaiian Islands:

Ind - indigenous; native to Hawaiʻi, but not unique to the Hawaiian Islands.

Nat - naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of the Cook Expedition in 1778, and well-established outside of cultivation.

Orn - exotic, ornamental or cultivated; plant not naturalized (not well established outside of cultivation).

Pol - An early Polynesian introduction; introduced before 1778.

Table 1 (continued).

ABUNDANCE = occurrence ratings for plants by area:

R – Rare	seen in only one or perhaps two locations.
U - Uncommon	seen at most in several locations
O - Occasional	seen with some regularity
C - Common	observed numerous times during the survey
A - Abundant	found in large numbers; may be locally dominant.
AA - Very abundant	abundant and dominant; defining vegetation type.

NOTES:

<1> - Plant observed lacking fruit or flowers; identification uncertain.

<2> - Species recorded in the savannah vegetation

Avian Fauna

A total of 20 species, representing 13 separate families, were recorded across the Project area. All species recorded except *Nēnē*, the Hawaiian Goose, are non-native (alien) species established in the Hawaiian Islands. *Nēnē* is an endemic goose species listed as threatened under federal statute and as endangered under State of Hawaii statute (USFWS, 2004).

Table 2. Avian species detected at the Project area, Maui Island.

Common Name	ORDER FAMILY *Species*	Status
	ANSERIFORMES	
	ANATIDAE	
Hawaiian Goose, *Nēnē*	*Branta sandvicensis*	**E**
	PHASIANIDAE	
	PHASIANINAE	
Gray Francolin	*Ortygornis pondicerianus*	NN
Black Francolin	*Francolinus francolinus*	NN
	COLUMBIFORMES	
	COLUMBIDAE	
Rock Pigeon	*Columba livia*	NN
Spotted Dove	*Streptopelia chinensis*	NN
Zebra Dove	*Geopelia striata*	NN

Table 2 (continued).

Common Name	ORDER FAMILY *Species*	Status
	PELECANIFORMES	
	ARDEIDAE	
Cattle Egret	*Bubulcus ibis*	NN
	PASSERIFORMES	
	ALAUDIDAE	
Eurasian Skylark	*Alauda arvensis*	NN
	ZOSTEROPIDAE	
Warbling White-eye	*Zosterops japonicus*	NN
	MIMIDAE	
Northern Mockingbird	*Mimus polyglottos*	NN
	STURNIDAE	
Common Myna	*Acridotheres tristis*	NN
	ESTRILDIDAE	
African Silverbill	*Euodice cantans*	NN
Java Sparrow	*Padda oryzivora*	NN
Scaly-breasted Munia	*Lonchura punctulate*	NN
Chestnut Munia	*Lonchura atricapilla*	NN
Common Waxbill	*Estrilda astrild*	NN
	THRAUPIDAE	
Red-crested Cardinal	*Paroaria coronata*	NN
	PASSERIDAE	
House Sparrow	*Passer domesticus*	NN
	FRINGILLIDAE	
House Finch	*Haemorhous mexicanus*	NN
	CARDINALIDAE	
Northern Cardinal	*Cardinalis cardinalis*	NN

Legend to Table 2.

STATUS = distributional status for the Hawaiian Islands:

NN = Non-native; naturalized, introduced to the Hawaiian Islands.

E = Endemic to the Hawaiian Islands

Mammals

Four terrestrial mammalian species were detected during the surveys. Asian mongoose (*Herpestes javanicus*) was seen throughout the area, as was pig (*Sus scrofa*); we also encountered scat, tracks, and other sign of pig. Axis deer (*Axis axis*) trails, tracks, scat, beds, bones, and tree rubbings were seen across the survey area. Scat of domestic cat (*Felis catus*) was encountered on the expansion portion, although unlikely that cats are limited to just this area.

Discussion and Recommendations

Recommendations are partly based on U.S. Fish and Wildlife Service, Animal Avoidance and Minimization Measures (USFWS-PIFWO, 2023). Implementation of the recommendations (provided below as bulleted items) by the Project contractor will minimize impacts to listed species to the maximum extent practicable.

Floral Resources

Although scattered and sparse, occurrences of native flora are present within the Project area, these plants are all common species, and their respective populations extend well outside of the survey area. No plant species proposed for listing or listed as endangered or threatened under either federal or state of Hawaiʻi endangered species statutes (HDLNR, 1998; USFWS, nd-a) were recorded during the course of our survey.

Invertebrate Resources

Blackburn's sphinx moth (*Manduca blackburnii*) is a federal and state listed insect found in Hawaiʻi (USFWS, 2000) and a known population of this moth occurs in central Maui. The caterpillar of this species feeds exclusively on plants in the Family Solanaceae (USFWS, 2003; HDLNR, 2005) and are often found feeding on the widely distributed, non-native tree tobacco (*Nicotiana glauca*) plant. No tree tobacco was observed on the Project site during the survey.

- Measures should be taken to prevent attracting the moth to the Project area by proactively removing any young tree tobacco plant before it reaches 3 ft (1 m) in height.

- Check the Project site every 4 to 6 weeks for new tree tobacco growth before, during, and after any ground-disturbing work to prevent tree tobacco from becoming established.

- Tree tobacco plants 3 ft (1 m) or more in height must be inspected by a qualified biologist before they can be removed, to ensure Blackburn's sphinx moth eggs, larvae, or evidence of feeding is not present on the plant.

Avian Resources

Nēnē were observed overflying the Project area. They are observed in a variety of habitats, but prefer open areas, such as pastures, golf courses, wetlands, grasslands and shrublands, and lava flows. Threats to this species include introduced mammalian and avian predators, wind facilities, and vehicle strikes (USFWS-PIFWO, 2023).

- Do not approach, feed, or disturb *nēnē*.

- If *nēnē* are observed loafing or foraging within the project area during the breeding season (September through April), have a biologist familiar with *nēnē* nesting behavior survey for nests in and around the project area prior to the resumption of any work. Repeat surveys after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).

- Cease all work immediately and contact the Service for further guidance if a nest is discovered within a radius of 150 ft (46 m) of proposed project, or a previously undiscovered nest is found within the 150-foot radius after work begins.

The *Aeʻo*, or Hawaiian Stilt, is an endangered subspecies of the black-necked stilt endemic to the Hawaiian Islands. *Aeʻo* typically nest on the ground near bodies of waters and utilize shallow wetlands for foraging (USFWS, 2011). An excavated quarry bottom can form isolated pools of water during the rainy season and may constitute an attractive nuisance for *Aeʻo.*

- Any standing water should be filled or covered at the end of each work day.

It is possible that Hawaiian Petrel (*Puffinus sandwichesis*), Band-rumped Storm-Petrel (*Hydrobates castro*), and Newell's Shearwater (*Puffinus newelli*) over-fly the Project area between April and the middle of December each year in small

numbers. The primary cause of mortality to these three listed seabird species in Hawaiʻi is thought to be predation by alien mammalian species at the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered the second most significant cause of mortality. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. Disoriented birds may collide with man-made structures and, if not killed outright, become easy targets of opportunity for feral mammals (Hadley, 1961; Telfer, 1979; Sincock, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1998; Podolsky et al., 1998; Ainley et al., 2001; Hue et al., 2001; Day et al., 2003). No suitable nesting habitat exists within or close to the Project area for any of these three seabird species.

The potential impact that the Project poses to protected seabirds is an increased threat that birds will be downed after becoming disoriented by lights associated with night-time operation activities or site security lighting.

- If night-time operations, including equipment maintenance, is conducted, all associated lights should be shielded. When large flood/work lights are used, they should be placed on poles that are high enough to allow the lights to be pointed directly at the ground (Reed et al., 1985; Telfer et al., 1987). Deleterious impacts to transiting seabirds can be avoided if operations are limited to daylight hours or all outdoor lighting installed is fully "dark sky compliant" (HDLNR-DOFAW, 2016). DLNR recommends minimizing night-time lighting between September 15 and December 15 (DLNR, 2016).

Mammalian Resources

No mammalian species currently proposed for listing or listed under either federal or state endangered species statutes (HDLNR 1998, 2015; USFWS, nd-a) were recorded on the Project site. Mammalian species observed during this survey are alien to the Hawaiian Islands and are deleterious to the native biota.

It is possible that the endangered Hawaiian hoary bat (*Lasiurus semotus*) uses resources within the Project vicinity. Tall trees suitable for roosting of Hawaiian hoary bat are present. This bat species is solitary and rare but with a potentially widespread distribution across the state. Hawaiian hoary bat uses multiple roosts within a home territory (Bonaccorso, 2015), so the disturbance associated with removal of any particular tree would be minimal. An exception would be during the bat pupping season when a female bat carrying a pup, or an unattended pup, are in a tree being felled. These individuals might be unable to flee the tree and become physically harmed or killed.

- Potential adverse impacts to Hawaiian hoary bat can be avoided or minimized by not clearing woody vegetation taller than 15 ft (4.6 m) between June 1 and September 15, the bat pupping season.

- The presence of barbed wire fence at the northern edge of the Project poses a potential entrapment risk for the Hawaiian hoary bat. Any barbed wire should be removed from fences in and along the Project area, as these bats forage for insects near the ground and can become entangled.

Other Resources of Potential Concern

Critical Habitat

No federally designated Critical Habitat occurs within the Project area or in the Project vicinity (USFWS, nd-a). Thus, modification of habitats on any part of the area will not result in an impact to federally designated Critical Habitat. No equivalent designation exists under state law.

Runoff and Stormwater Pollution Prevention

Best Management Practices (BMPs) should be implemented to reduce stormwater pollution during quarry construction.

- Minimize turbidity and siltation from project-related work. Use effective silt containment devices and curtail work during adverse weather conditions.

- Prevent contamination (trash or debris disposal, non-native species introductions, attraction of non-native pests, etc.) of aquatic habitats from project-related activities. Implement a litter-control plan and develop a hazard analysis and critical control point plan to prevent attraction and introduction of non-native species.

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ARCHAEOLOGICAL INVENTORY SURVEY TESTING STRATEGY PROPOSAL

B

Submitted By
Trevor Yucha

Closed By
Kaualilehuaopanaewa Soares

GO TO PROJECT

SHPD Requests

Process	Status	Type	Submission	Description	Requested By
	Information Requested	New Survey	27340	SHPD has reviewed and approved the AIS Testing Strategy. Please refer to the SHPD's email in the attachments section. SHPD looks forward to receiving the AIS.	Kaualilehuaopanaewa Soares

SHPD Requests: 1

SHPD Responses

Status	Reviewer	Type	Decision	Assigned	Assigned By	Completed	Lead
Complete	Kaualilehuaopanaewa Soares	Archaeology Branch	More Information Requested	01/28/2025	Phyllis Cayan	04/10/2025	No

Reviews: 1

Finn Gibson

From: Lebo, Susan A <susan.a.lebo@hawaii.gov>
Sent: Wednesday, April 9, 2025 1:18 PM
To: planning@mauicounty.gov; Janet Six; Trevor Yucha; Noelani Hessler; david.gomes@hawaiiancemet.com; Karlynn Fukuda; Finn Gibson
Cc: Kodama, Mary ML; Soares, Lehua
Subject: HICRIS 2025PR00133.001, AIS Testing Strategy

This is an EXTERNAL e mail.
Only open links and attachments from a Trusted Sender.

Hello,

SHPD has reviewed the proposed AIS Testing Strategy (Submission No. 2025PR00133.001) received on January 28, 2025. SHPD approves the AIS Testing Strategy w/respect to the proposed surface survey and testing methods with the stipulation that if possible architectural historic properties are identified, CSH must consult with the SHPD Architecture Branch Chief, Mary Kodama, regarding appropriate documentation methods (which may include a qualified Architectural Historian or Historic Architect being employed to complete field documentation and to make HRS 6E integrity and site significance assessments).

Sincerely,

Susan

Susan A. Lebo, PhD
SHPD Archaeology Branch Chief
(808) 321-9000 cell

TO BE FINALIZED ON COUNTY LETTERHEAD

Jessica Puff, Administrator
Department of Land and Natural Resources
State Historic Preservation Division
Kakuhihewa Bldg., Suite 555
601 Kamokila Boulevard
Kapolei, HI 96707

Subject: Request for State Historic Preservation Division Initial Hawai‘i Revised Statutes 6E-42 Historic Preservation Review for the Hawaiian Cement New Mining Area Project, Pulehunui Ahupua‘a, Wailuku District (Pū‘ali Komohana Moku), Maui Island, TMK: [2] 3-8-004:001-002 por.

Aloha:

The County of Maui Department of Planning is submitting the subject project to the State Historic Preservation Division (SHPD) for review under Hawai‘i Revised Statutes (HRS) 6E-42.

Scope of Work

Hawaiian Cement currently operates its quarry, concrete batching, asphalt production, and concrete casting operations at its Pu‘unēnē Quarry within a portion of the existing permitted area of 167.7 acres. Hawaiian Cement is requesting an expansion of 125 acres to their permit area. The proposed 125-acre expansion area (defined in this letter as the “project area”) consists primarily of former commercial sugarcane fields. The change in mining progression was prompted by the unexpected change in the geology of the rock source and rock product requirements at the time. The entire 125-acre expansion area is proposed for project related ground disturbance that will include the removal of the soil deposits overlying bedrock.

Summary of Identification Efforts

In 1990, Archaeological Consultants Hawai‘i (ACH) completed a walk-through reconnaissance survey of the Hawaiian Cement Quarry expansion areas including Increments 2 and 4 (Kennedy 1990). At the time of the survey, the entire property was within active commercial sugarcane fields. No historic properties were identified during the survey, and no further work was recommended.

In 2010, Archaeological Services Hawai‘i (ASH) conducted an archaeological inventory survey (AIS) of 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an “archaeological assessment” in accordance with Hawai‘i Administrative Rules (HAR) §13-284-5(5)(A). The study recommended no further work. The study was reviewed and accepted by the SHPD on 8 August 2012 (SHPD Log No.: 2011.0298 and 2011.0340; Doc. No.: 1208JP01).

In 2014, ASH returned to the area to conduct an AIS of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2020). The study included 17 backhoe-assisted test excavations with no

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historic properties identified. As such, the study was termed an "archaeological assessment" in accordance with HAR §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No: 1505MD19). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017 with no response. Quarrying work in Increment 3 began and has continued without SHPD acceptance of the AIS.

In 2023, CSH conducted an AIS for the 45.35-acre Increment 4 expansion project at the Hawaiian Cement Quarry (Yucha et al. 2023). The study included 20 backhoe-assisted test excavations that documented the agricultural plow zone overlying natural alluvial soil and bedrock throughout most of the project area. Volcanic cinder was also observed below the plow zone along the southern and eastern edges of the project area. No historic properties were identified and as such, the study was termed an "archaeological assessment" in accordance with HAR §13-284-5(5)(A). The study recommended no further work. The study was reviewed and accepted by the SHPD on 22 June 2023 (SHPD Project No.: 2022PR01184; Doc. No.: 2306AM06).

Evaluation of Project's Effects

The current project area has not been subject to a previous AIS investigation. As such, there is currently insufficient information to determine whether the proposed project will impact historic properties.

Request for Concurrence

In accordance with HAR §13-284-5(b)(5), the County of Maui requests SHPD concurrence with the completion of an AIS with a subsurface testing component for the subject project. As part of this initial submittal, CSH has prepared an AIS fieldwork strategy letter for the review and acceptance of the SHPD.

Sincerely,

Cc:
Trevor Yucha, Cultural Surveys Hawai'i, Inc.

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State Historic Preservation Division
HRS 6E Submittal Form

Per §6E, Hawai‘i Revised Statutes, if the Project requires review by the State Historic Preservation Division (SHPD), please review and fill out this form and submit all requested information to SHPD. All forms and project documentation must be submitted **electronically** via HICRIS. Please visit our website.

https://shpd.hawaii.gov/hicris

If you are unable to submit electronically, please contact SHPD at (808) 692-8015. Mahalo.

The submission date of this form is:

1. APPLICANT (select one)

☐ Property Owner ☑ Government Agency

2. AGENCY (select one)

☑ Planning Department ☐ Department of Public Works ☐ Other (specify):

Type of Permit Applied For:

3. APPLICANT CONTACT

3.1) Name: Kate Blystone 3.2) Title: Director

3.3) Street Address: 2200 Main Street; Suite 619

3.4) County: Maui 3.5) State: Hawai'i 3.6) Zip Code: 96793

3.7) Phone: 808-270-7735 3.8) Email: planning@mauicounty.gov

4. PROJECT DATA

4.1) Permit Number (if applicable):

4.2) TMK [e.g. (3) 1-2-003:004]: [2] 3-8-004:001-0002 por.

4.3) Street Address: N/A

4.4) County: Maui 4.5) State: Hawai'i 4.6) Zip Code: 96732

4.7) Total Property Acreage: 125 acres

4.8) Project Area (acreage, square feet): 125 acres

4.9) List any previous SHPD correspondence (LOG Number & DOC Number, if applicable):

LOG NO. DOC NO.

5. PROJECT INFORMATION

5.1) Does the Project involve a Historic Property? A Historic Property is any building, structure, object,

district, area, or site, including heiau and underwater site, **which is over 50 years old** (*HRS §6E-2*).

☐ Yes ☑ No

5.2) The date(s) of construction for the historic property (building, structure, object, district, area, or site, including heiau and underwater site) is

5.3) Is the Property listed on the Hawai‘i and or National Register of Historic Places? To check:

http://dlnr.hawaii.gov/shpd/

☐ Yes ☑ No

5.4) Detailed Project Description and Scope of Work:

Hawaiian Cement currently operates its quarry, concrete batching, asphalt production, and concrete casting operations at its Pu‘unēnē Quarry within a portion of the existing permitted area of 167.7 acres. Hawaiian Cement is requesting an expansion of 125 acres to their permit area. The proposed 125-acre expansion area (defined in this letter as the “project area”) consist primarily of former commercial sugarcane fields. The change in mining progression was prompted by the unexpected change in the geology of the rock source and rock product requirements at the time. The entire 125-acre expansion area is proposed for project related ground disturbance that will include the removal of the soil deposits overlying bedrock.

5.5) Description of **previous** ground disturbance (e.g. previous grading and grubbing):

For much of the twentieth century, the current project area was subject to continuous commercial plowing associated with the production of sugarcane. Commercial agriculture operations include annual plowing to depths of 3-4 ft (0.9-1.2 m) below surface. Decades of agricultural plowing has likely impacted and subsurface historic properties that may be present within the project area.

5.6) Description of **proposed** ground disturbance (e.g. # of trenches, Length x Width x Depth):

Proposed project-related ground disturbance will include the removal of soil deposits throughout the majority of the project area followed by the quarrying of subsurface basalt rock layers for commercial use.

5.7) The Agency shall ensure whether historic properties are present in the project area, and, if so, it shall ensure that these properties are properly identified and inventoried. Identify all known historic properties:

No historic properties have been identified within the project area.

5.8) Once a historic property is identified, then an assessment of significance shall occur.

Integrity (check all that apply):

☐ Location ☐ Design ☐ Setting ☐ Materials ☐ Workmanship ☐ Feeling ☐ Association

Criteria (check all that apply):

☐ a – associated with events that have made an important contribution to the broad patterns of our history
☐ b – associated with the lives of persons important in our past
☐ c – embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value
☐ d – have yielded, or is likely to yield, information important for research on prehistory or history
☐ e – have an important value to the Native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out or still carried out, at the property or due to associations with traditional beliefs, events, or oral accounts - - these associations being important to the group’s history and cultural identity

5.9) The effects or impacts of a project on significant historic properties shall be determined by the agency.

Effect Determination (select one):

☐ No Historic Properties Affected
☐ Effect, with Agreed Upon Mitigation Commitments (§6E-42, HRS)
☐ Effect, with Proposed Mitigation Commitments (§6E-8, HRS)

5.10) This project is (check all that apply, if applicable):

☐ an activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency;

☐ carried out with Federal financial assistance; and or

☐ requiring a Federal permit, license or approval.

If any of these boxes are checked, then the Project may also be subject to compliance with Section 106 of the National Historic Preservation Act (NHPA).

6. PROJECT SUBMITTALS

6.1) Please submit a copy of the Tax Map Key (TMK) map

6.2) Please submit a copy of the property map showing the project area and indicate if the project area is smaller than the property area.

6.3) Please submit a permit set of drawings. A permit set is a set of drawings prepared and signed by a licensed architect or engineer and is at least 65% complete.

6.4) Are you submitting a survey?

☐ Yes ☑ No

Specify Survey:

6.5) Did SHPD request the survey?

☐ Yes ☑ No

If 'Yes', then please provide the date, SHPD LOG NO, and DOC NO:

Date: LOG NO. DOC NO.

6.6) **SURVEY REVIEW FEES**. Fee for Review of Reports and Plans (§§13-275-4 and 284-4). A filing fee will be charged for all reports and plans submitted to our office for review. Please go to:

The Submittal Filing Fee Form is located on the Forms page

A check payable to the Hawaii Historic Preservation Special Fund should accompany all reports or plans submitted.

6.7) Please submit color photos/images of the Historic Property (any building, structure, object, district, area, or site, including heiau and underwater site) that will be affected by the Project.

The following are the minimum number and type of color photographs required:

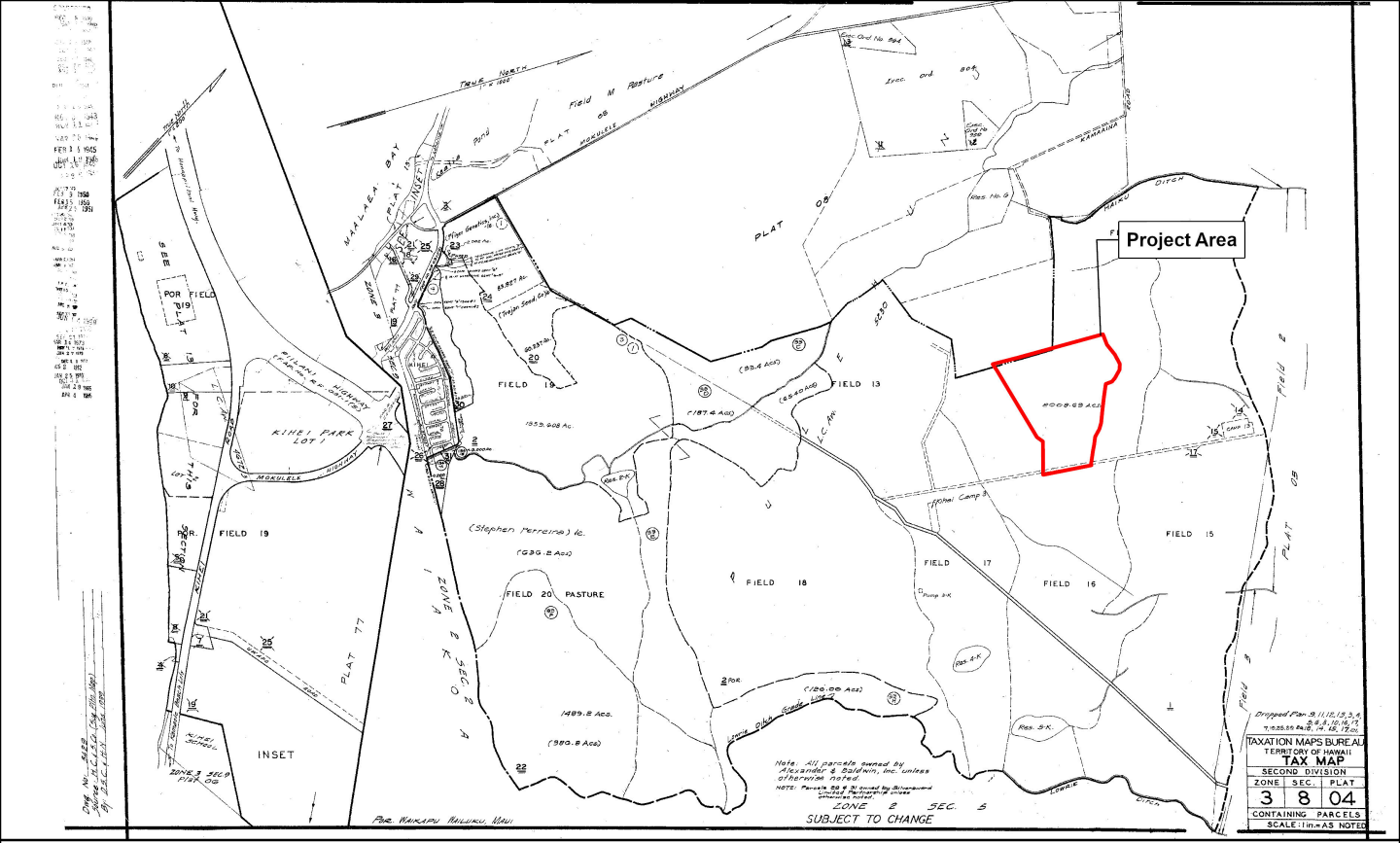
Quantity	Description
1-2	Street view(s) of the resource and surrounding area
1-2	Over view of exterior work area
1	exterior photo of the North elevation (if applicable)
1	exterior photo of the South elevation (if applicable)
1	exterior photo of the East elevation (if applicable)
1	exterior photo of the West elevation (if applicable)
1-2	interior photos(s) of areas affected (if applicable)

CHECKLIST

☑ **SHPD FORM 6E** (this form)

☑ **PROJECT SUBMITTALS** (any requested documentation for items 6.1 - 6.7 of this form)

☐ **FILING FEE FORM** (if applicable)



Legend

Project Area

0 500 1,000 Meters

0 2,500 5,000 Feet

Base Map: Tax Map Key [2] 3-8-004
Data Sources: CSH

Cultural Surveys Hawai'i, Inc.



Legend

Project Area

0 250 500 Meters

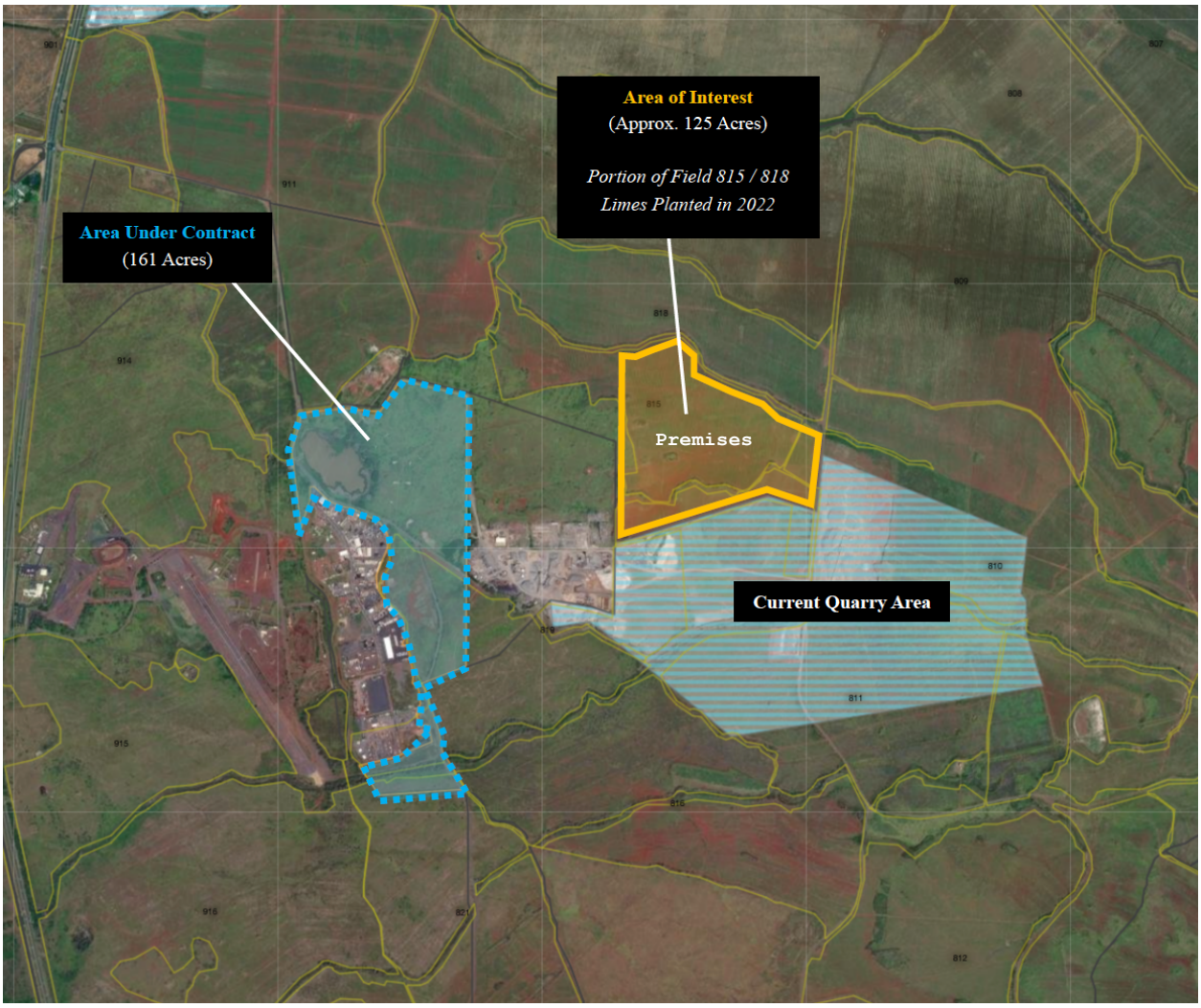
0 1,000 2,000 Feet

N

Base Map: 2023 Eagleview Pictometry Aerial Imagery
Data Sources: CSH

Cultural Surveys Hawai'i, Inc.

Exhibit "A"
PREMISES



CULTURAL SURVEYS HAWAI'I
ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL DOCUMENTATION SERVICES - SINCE 1982





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Lāwai, Kaua'i

January 9, 2025

State Historic Preservation Division
Department of Land and Natural Resources
130 Mahalani Street
Wailuku, HI 96793
(808) 652-1510

Subject: Early Consultation for Archaeological Inventory Survey Fieldwork Strategy for the Hawaiian Cement New Mining Area Project, Pulehunui Ahupua'a, Wailuku District (Pū'ali Komohana Moku), Maui Island, TMK: [2] 3-8-004:001-002 por.

CSH Job Code: PULEHUNUI 21
HICRIS Project: TBD
Permits: TBD

Aloha:

On behalf of Hawaiian Cement, Cultural Surveys Hawai'i, Inc. (CSH) would like to consult with the State Historic Preservation Division (SHPD) regarding an appropriate archaeological inventory survey (AIS) fieldwork strategy for the Hawaiian Cement New Mining Area Project. We hope to be able to obtain SHPD approval to conduct an AIS with a subsurface testing component so that we can begin this work prior to initiation of the project's permit review process.

Project Background

Hawaiian Cement currently operates its quarry, concrete batching, asphalt production, and concrete casting operations at its Pu'unēnē Quarry within a portion of the existing permitted area of 167.7 acres. Hawaiian Cement is requesting an expansion of 125 acres to their permit area. The proposed 125-acre expansion area (defined in this letter as the "project area") consists primarily of former commercial sugarcane fields (Figure 1). The change in mining progression was prompted by the unexpected change in the geology of the rock source and rock product

requirements at the time. The entire 125-acre expansion area is proposed for project-related ground disturbance that will include the removal of the soil deposits overlying bedrock.

Six archaeological studies have been conducted in the vicinity of the Puʻunēnē Quarry and subsequent expansion areas (Figure 2). These studies have included a 1990 walk-through reconnaissance survey that covered the southern portion of the current project area with no findings (Kennedy 1990) and three AIS studies with negative findings (Rotunno-Hazuka et al. 2011; Fuentes et al. 2020; Yucha et al. 2023). Additional studies conducted around the periphery of the quarry have identified surface historic properties related to commercial sugarcane cultivation, ranching, and military use at the former Naval Air Station Puunene (Tomonari-Tuggle et al. 2000; Lee-Greig et al. 2011).

While the current project area was previously used for commercial sugarcane cultivation, there remains a potential for surface historic properties related to commercial agriculture as well as subsurface historic properties related to pre- and post-Contact land use. Subsurface testing conducted during the AIS will confirm the presence/absence of historic properties that may be located beneath the agricultural plow zone. In order to identify historic properties and any potential cultural impacts or concerns related to the proposed project, CSH proposes to conduct an AIS that utilizes the subsurface testing strategy and methodologies outlined herein as well as a cultural impact assessment that will include outreach and consultation with persons knowledgeable about the project area's history.

Pedestrian Inspection

The AIS fieldwork will include a 100 percent coverage pedestrian survey of the surface of the project area to identify any surface historic properties that may be present. The survey will be completed by a team of archaeologists conducting pedestrian transects. Transect spacing will depend on ground visibility. For open, plowed fields where ground visibility is excellent, spacing will be 10.0 m. For vegetated or unmaintained areas where ground visibility is poor, spacing will be 5.0 m. All surface historic properties will be recorded using a GPS receiver that is capable of sub-meter accuracy.

Documentation of Surface Historic Properties

If surface archaeological historic properties are identified, these properties will be inventoried and documented in accordance with Hawai'i Administrative Rules (HAR) §13-276-5(d) and other pertinent law. Documentation will generally include photographs (with scale and north arrow), written descriptions, scaled plan and/or profile maps, and sub-meter accurate GPS location.

If architectural historic properties are identified, CSH proposes to document these historic properties to be consistent with the documentation of archaeological historic properties, which can be used by the SHPD Architecture Branch or a qualified architectural historian to complete an assessment of significance.

Geotechnical Testing

In order to determine the feasibility of mining, some initial geotechnical drilling was conducted within the project area prior to CSH's involvement with the project. While these excavations were not directly observed by an archaeologist, the geotechnical boring logs provide relevant data on the depth and characteristics of soil deposits within the project area. The boring logs indicate that soil depths vary throughout the project area from 0 to 32 ft (0 to 9.7 m) below surface. These soil deposits overlay basalt bedrock. The locations and results of geotechnical boring will be included within the AIS report in order to supplement the locations selected for AIS subsurface testing.

Subsurface Testing

No previous archaeological testing has been conducted within the subject project area. A review of previous archaeological studies indicates that there is a potential to identify subsurface historic properties in this region that include historic artifact scatters (SIHP #s 50-50-10-06687, -06701, and -06751) like those identified by Lee-Greig et al. (2011) to the south of the current project area.

In an effort to identify subsurface historic properties, CSH proposes to complete systematic sampling throughout the project area. The proposed sampling strategy will require the excavation of 40 mechanically assisted test excavations (T-1 through T-40) that have been plotted in a systematic gridded pattern distributed throughout the project area (Figure 3 and Figure 4). Each AIS excavation will be of equal size and measure 5.0 m by 1.0 m (16.4 by 3.3 ft). Each AIS excavation will extend to culturally sterile soil or bedrock. The proposed sampling strategy is consistent with the sampling strategy that was completed by CSH for the AIS of the Increment 4 Expansion (Yucha et al. 2023).

Fieldwork will be directed by CSH principal investigator and qualified osteologist, Josephine Yucha, M.S., along with a field crew of 2-3 archaeologists. A backhoe contractor will be used to slowly excavate and backfill each trench. If sand deposits or other potentially significant deposits are encountered, these deposits will be excavated in short draws and 6-inch lifts using the backhoe in order to minimize any potential disturbance to subsurface historic properties. All excavation locations will be recorded using a GPS receiver that is capable of sub-meter accuracy.

Documentation of Subsurface Historic Properties

Documentation of each excavation will include the recordation of soils, a stratigraphic profile of the entire length of the excavation, plan view maps as necessary, photographs, and sub-meter accurate GPS location. If non-burial subsurface historic properties are identified, then CSH will document these historic properties in accordance with HAR §13-276-5(d) and other pertinent law. Once identified, non-burial historic properties will be exposed using hand excavation and any sediment matrix associated with the historic property will be screened through 1/8th-inch wire mesh. If human skeletal remains are identified, they will be treated as previously identified finds. CSH will stop work, notify the SHPD and representatives of the Maui/Lāna'i Islands Burial Council (MLIBC), and ensure that the remains are secured in place pending an MLIBC treatment determination.

Following each excavation, the area will be backfilled, compacted, and restored to near original condition. At the conclusion of fieldwork, CSH will prepare and submit a draft AIS report for the review and acceptance of the SHPD.

If you have any questions or comments regarding this strategy, please feel free to call me at (808) 242-9882 on Maui or toll free at 1-800-599-9962. You may also reach me by e-mail at tyucha@culturalsurveys.com.

Sincerely,



Trevor Yucha
Cultural Surveys Hawai‘i, Inc.

(On behalf of CSH Principal Investigator, Josephine M. Yucha, M.S.)

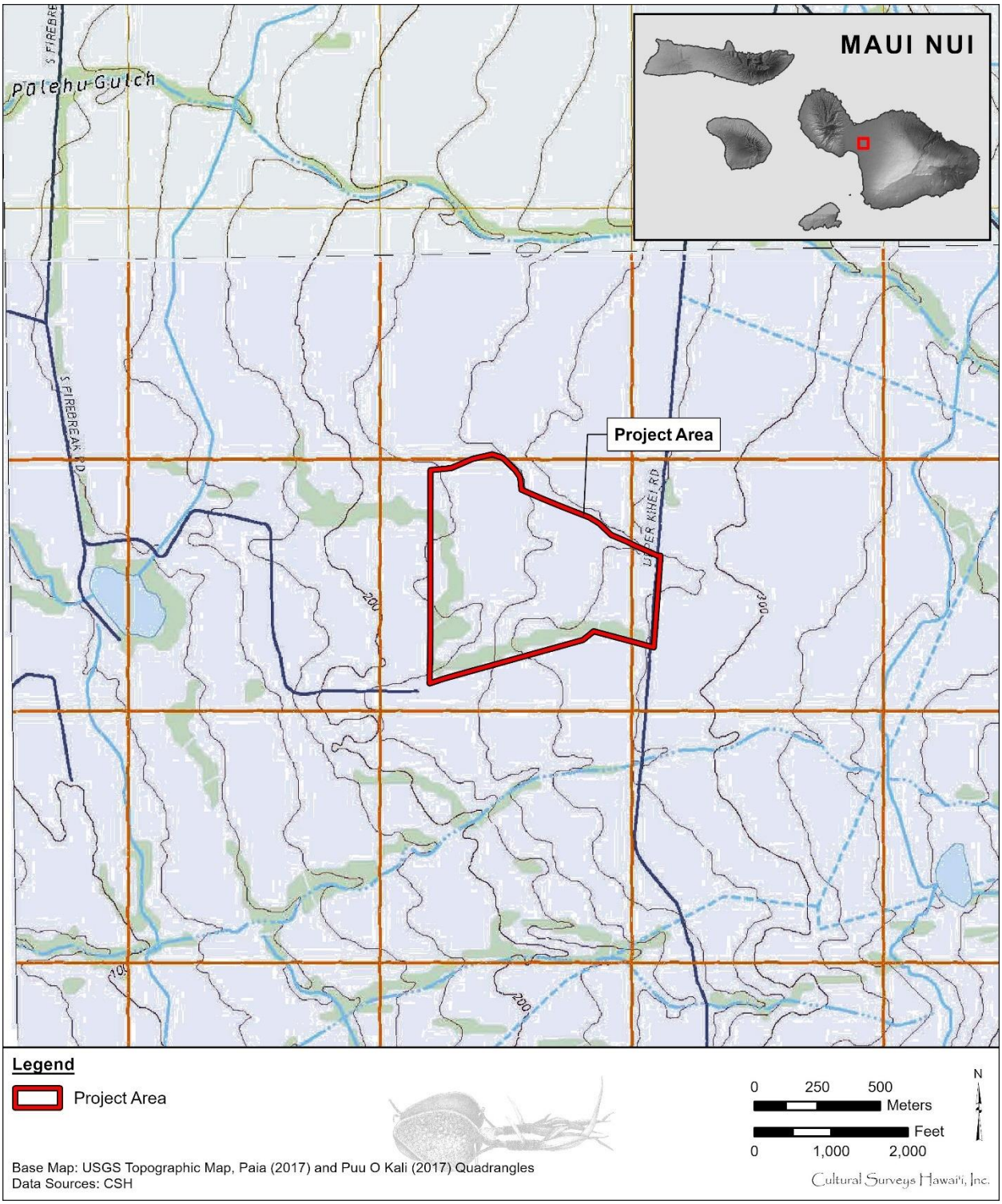


Figure 1. Portions of the 2017 Paia and 2017 Puu o Kali U.S. Geological Survey 7.5-minute topographic quadrangles depicting the location of the current project area

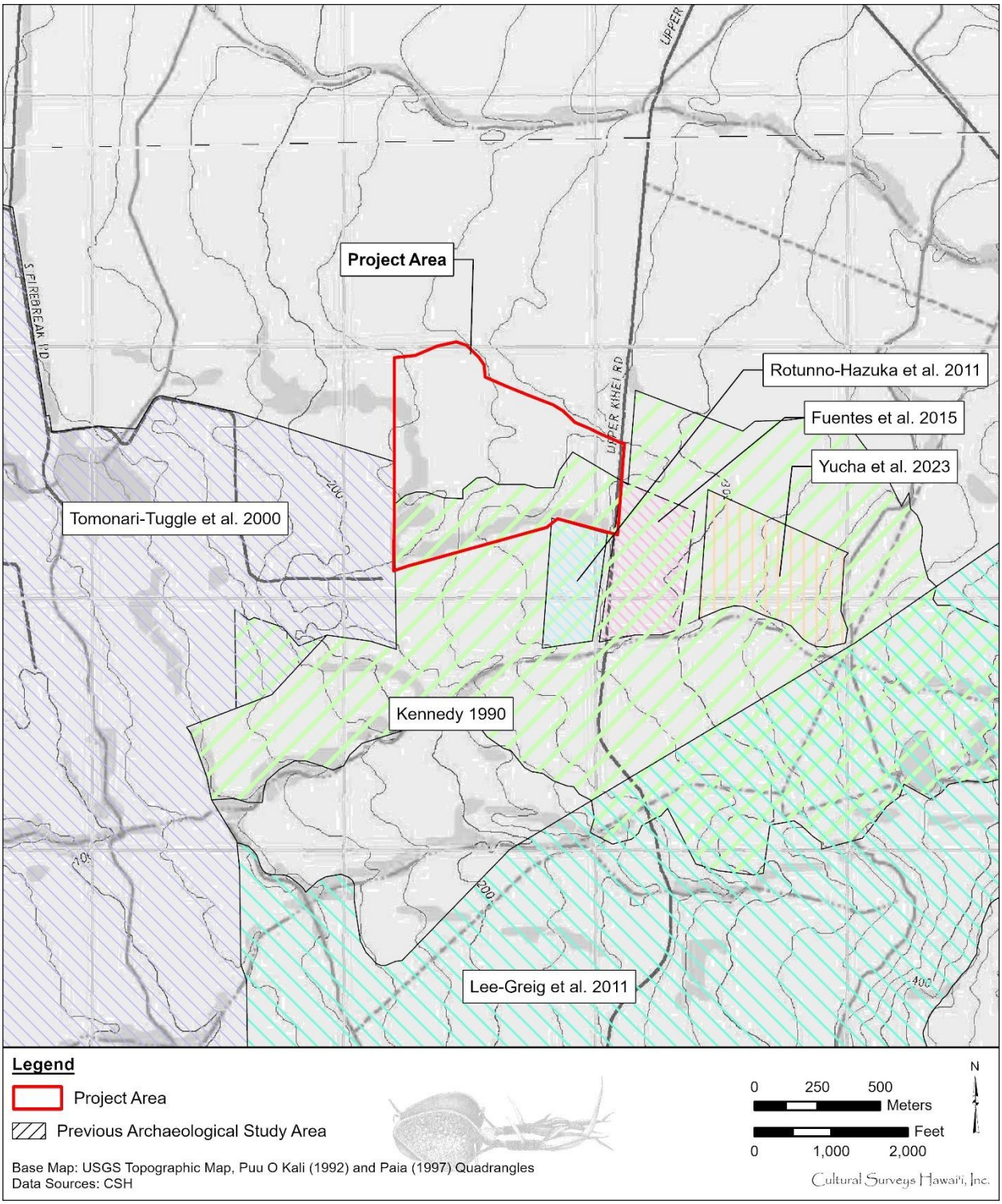


Figure 2. Portions of the 1997 Paia and 1992 Puu o Kali U.S. Geological Survey 7.5-minute topographic quadrangles depicting the locations of previous archaeological studies conducted in the vicinity of the current project area

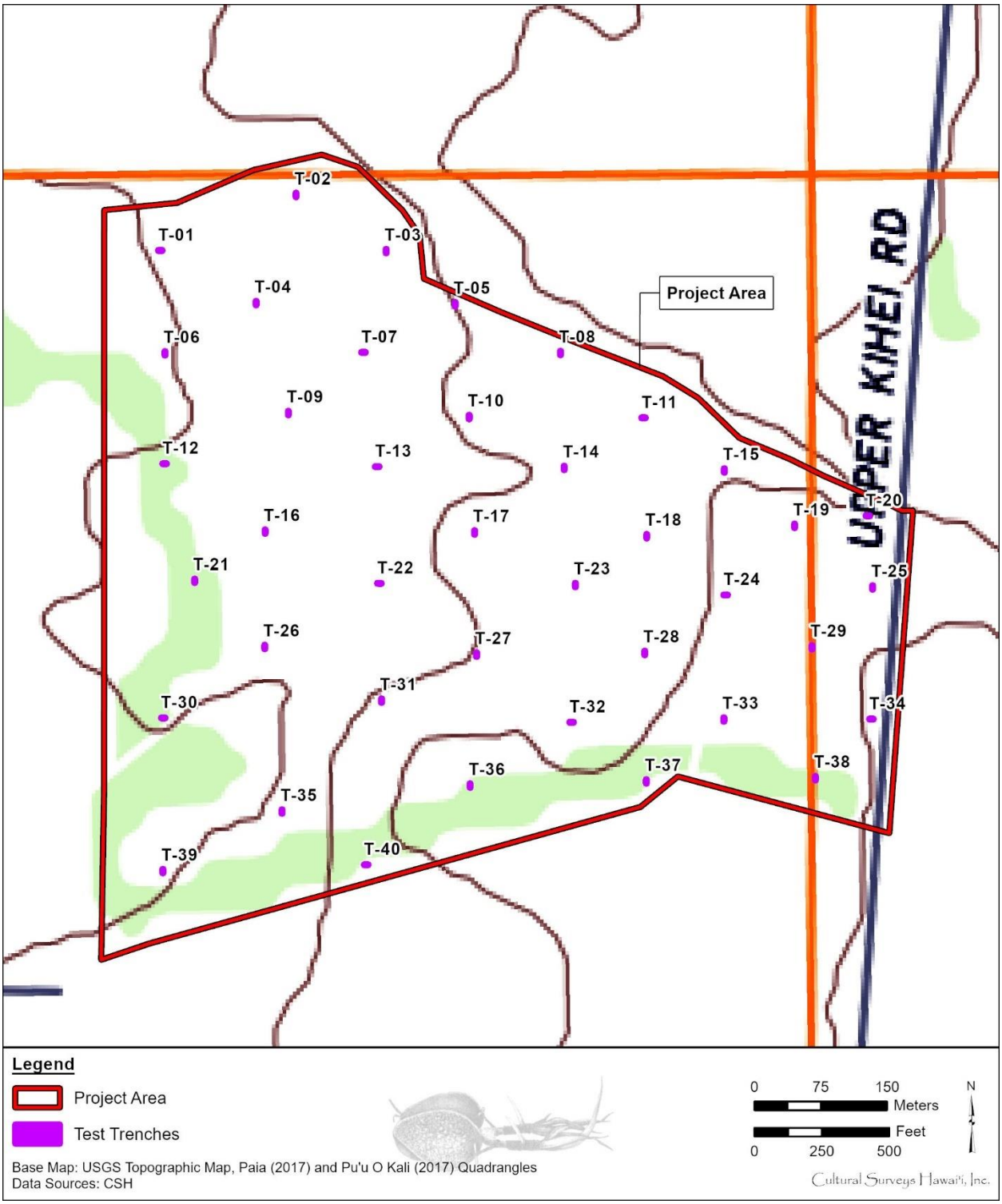


Figure 3. Portions of the 2017 Paia and 2017 Puu o Kali U.S. Geological Survey 7.5-minute topographic quadrangles depicting the proposed locations of 40 AIS test excavations (T-1 through T-40) within the current project area

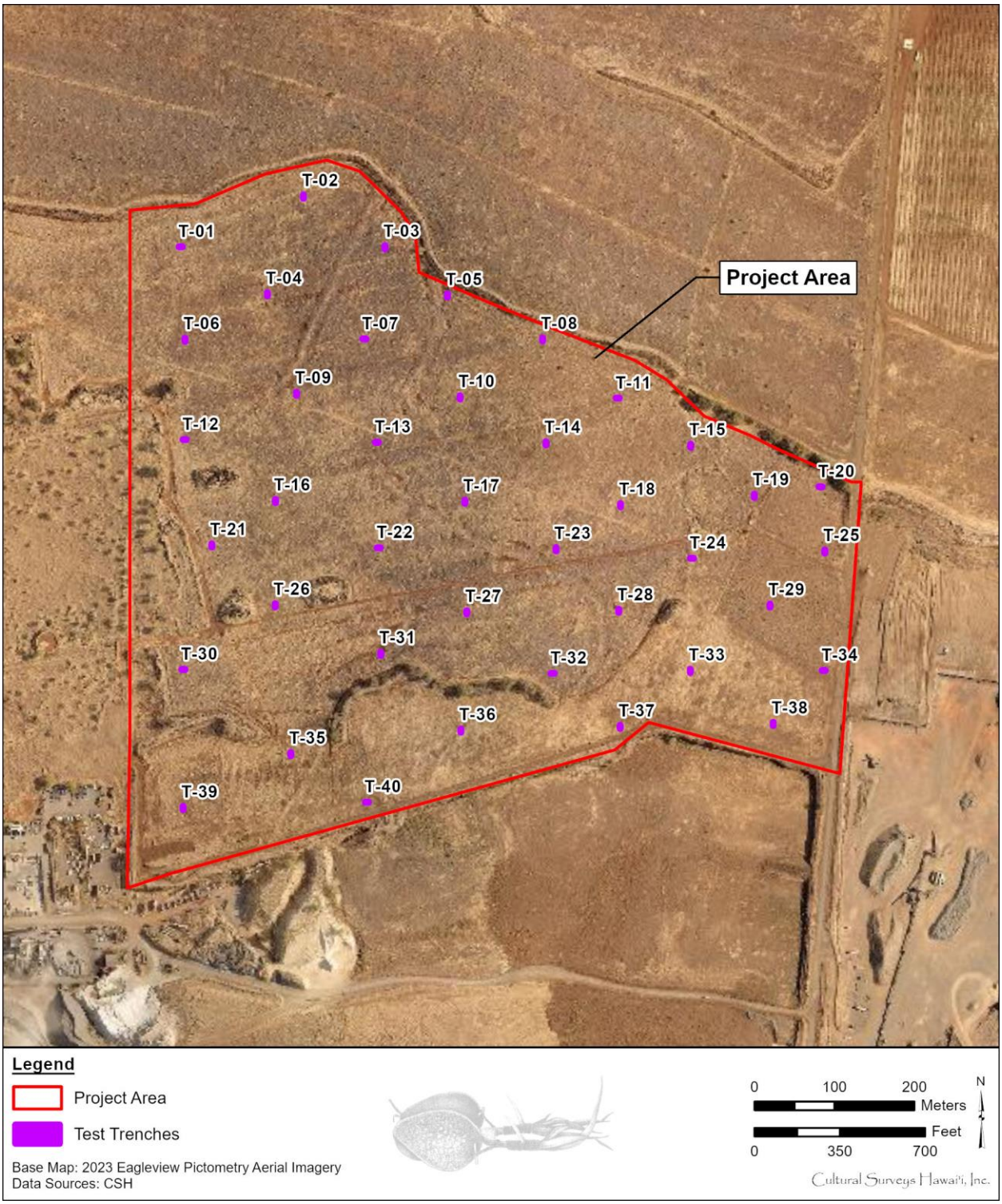


Figure 4. 2023 aerial image depicting the proposed locations of 40 AIS test excavations (T-1 through T-40) within the current project area

CULTURAL IMPACT ASSESSMENT REPORT

C

Cultural Impact Assessment for the Hawaiian Cement New Mining Area Project, Pūlehunui Ahupua‘a, Pū‘ali Komohana Moku, Wailuku District, Maui, TMKs: [2] 3-8-004:001 and 002 por.

Prepared for
Hawaiian Cement

Prepared by
Chantellee Konohia Spencer, B.A.
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: PULEHUNUI 22)

June 2025

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Management Summary

Reference	Cultural Impact Assessment for the Hawaiian Cement New Mining Area Project, Pūlehunui Ahupua‘a, Pū‘ali Komohana Moku, Wailuku District, Maui, TMKs: [2] 3-8-004:001 and 002 por. (Spencer and Hammatt 2025)
Date	June 2025
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: PULEHUNUI 22
Agencies	Environmental Review Program (ERP)
Land Jurisdiction	Private
Project Location	The project area is within agricultural land (portions of Fields 815 and 818) along the western side of Upper Kīhei Road. It is on the western flank of Haleakalā and near the edge of the central isthmus of Maui. The southern and eastern sides and of the project area are bounded by the current Hawaiian Cement Quarry area, the southwestern corner is bounded by an active industrial area, and the northern and western sides are bounded by agricultural fields. The project area is depicted on portions of the 2017 Paia and 2017 Puu o Kali USGS 7.5-minute topographic quadrangles
Project Description	Hawaiian Cement proposes to develop a new mining area adjacent to their existing cement quarry area.
Project Acreage	Approximately 125 acres (50.59 hectares)
Document Purpose and Regulatory Context	This cultural impact assessment (CIA) supports compliance for the Hawaiian Cement New Mining Area Project with: • The mandate set forth by the Hawai‘i State Constitution (Articles IX and XII), courts, Hawai‘i Regulatory Statutes (HRS), and Hawai‘i Administrative Rules (HAR) and other Hawai‘i State laws requiring government agencies to promote and preserve cultural beliefs, practices. and resources of native Hawaiians and other ethnic groups; • the State of Hawai‘i’s environmental review process under HRS §343, which requires consideration of the proposed project’s potential effects on cultural practices and cultural features in order to “promote responsible decision making” (HRS §343); • and, the State of Hawai‘s historic preservation review process under HAR §13-275-6 and §13-284-6, which requires the identification and mitigation of adverse effects proposed by a potential project in order to “promote the use and conservation of historic properties for the education of the citizens of Hawai‘i” (HAR §13-275-6)

	This CIA contains information gathered from archival research and consultation, compiled in order to “analyze the impact of a proposed action on cultural practices and features associated with the project area” (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State of Hawai‘i significance Criterion e, pursuant to Hawai‘i Administrative Rules (HAR) §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6).
Results of Background Research	Background research for this project yielded the following information (presented in approximate chronological order): 1. The current project area is located on the western flank of Haleakalā in the *moku* (district) of Kula and *ahupua‘a* (traditional land division usually extending from the mountains to the sea) of Pūlehunui. Overall, Pūlehunui Ahupua‘a begins at Kilohana Peak, on the summit ridge of Haleakalā, and ends at a mid-point on the west shore of the central plains at a shared boundary with Waikapū Ahupua‘a, encompassing a total area of 16,687.78 acres (McCully 1879). 2. The lands of coastal Pūlehunui were rich in marine resources. Hawaiian traditions and the presence of four fishponds are evidence that the coastal environs were also a focus of settlement and marine resource collection (Kolb et al. 1997). 3. Ke Kula o Kama‘oma‘o, or the Plains of Kama‘oma‘o, is a region of the central Maui isthmus close to the present project area that was known by Hawaiians in traditional times as a wandering place of the souls (Beckwith 1970). 4. About the year 1776, Kama‘oma‘o Plain saw the battle of Kakanilua between Kalani‘ōpu‘u and Kahekili. Kalani‘ōpu‘u‘s army was annihilated in what was recognized as one of the most legendary battles of pre-contact Hawai‘i (Kamakau 1992:85). 5. During the early and middle 1800’s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease and nucleation around the developing port towns (Kuykendall 1938:312–313).

	6. A total of 13 land commission claims were made in Pūlehunui, and nine were awarded (LCAs 0327B, 9671, 9019, 4672, 9672, 9673, 8866, 4567, and 5230). Only one of these awards, LCA 5230, is immediately surrounding and inclusive of the current project area. 7. The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs and in particular the long-lasting Irish potato. Kula became the area of highest potato production and was known as “the potato district” (the area between 2000 and 5000 ft elevation). During this time, sugar cultivation and ranching were established in the Kula region (Brown and Haun 1989:C-7 and C-6). 8. During World War II, Pu‘u Nēnē Naval Air Station became the command headquarters for both Navy and Army units on the island of Maui (Command History 1945). 9. The Hawaiian Cement Puunene Quarry started in the late-1970s with 28 acres. The quarry was further expended in 1980 to 194 acres. The primary resource of the quarry is basalt that is crushed and used for road base course, concrete and pavement aggregate, railroad ballast, and many other purposes (Yanik 2018).
Results of Community Consultation	CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 43 individuals or groups; two responded, none provided written testimony, and none of these *kama‘āina* (native-born) and/or *kūpuna* (elder/of the grandparent’s generation) met with CSH for more in-depth interview(s).
Identification of Cultural Resources and Practices	Based on the results of community consultation and background research conducted as part of this CIA, CSH has identified the following cultural resources and practices within Pūlehunui Ahupua‘a: 1. Agricultural and gathering practices 2. Plant resources 3. Coastal and marine resources 4. *Mo‘olelo* (stories) and *wahi pana* (storied places)
Identification of Impacts on Cultural Resources and Practices	No impacts to ongoing cultural resources and practices were identified within the project area during background research and community consultation for this CIA.
Mitigation Possibilities Identified During	The results of community consultation, underscored by background research conducted for this CIA, inform the following mitigation

Background Research and Consultation	possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups: 1. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the State Historic Preservation Division (SHPD) will be notified pursuant to HAR §13-280-3. In the event that *iwi kūpuna* (ancestral remains) are identified, all earth-moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended. 2. In the event that *iwi kūpuna* and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

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Section 1 Introduction

1.1 Project Description

At the request of Hawaiian Cement, Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this cultural impact assessment (CIA) report for the Hawaiian Cement New Mining Area Project, Pūlehunui Ahupua‘a, Pū‘ali Komohana Moku, Wailuku District, Maui, TMKs: [2] 3-8-004:001 and 002 por. The project area is approximately 125 acres (50.59 hectares) within agricultural land (portions of Fields 815 and 818) along the western side of Upper Kīhei Road. It is on the western flank of Haleakalā and near the edge of the central isthmus of Maui. The southern and eastern sides and of the project area are bounded by the current Hawaiian Cement Quarry area, the southwestern corner is bounded by an active industrial area, and the northern and western sides are bounded by agricultural fields. The project area is depicted on a portions of the 2017 Paia and 2017 Puu o Kali U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1), a tax map plat (Figure 2), and a 2023 aerial image (Figure 3).

Hawaiian Cement proposes to develop a new mining area adjacent to their existing cement quarry area. Hawaiian Cement currently operates its quarry, concrete batching, asphalt production, and concrete casting operations at its Pu‘unēnē Quarry within a portion of the existing permitted area of 167.7 acres. The change in mining progression was prompted by the unexpected change in the geology of the rock source and rock product requirements at the time. The entire 125-acre expansion area is proposed for project-related ground disturbance that will include the removal of the soil deposits overlying bedrock. The parcel is currently privately owned by MP Central A LLC C and Hawaiian Cement has entered into a long-term lease with the respective fee owner.

1.2 Regulatory Context

This CIA supports compliance for the Hawaiian Cement New Mining Area Project with:

- The mandate set forth by the Hawai‘i State Constitution (Articles IX and XII), courts, Hawai‘i Regulatory Statutes (HRS), and Hawai‘i Administrative Rules (HAR) and other Hawai‘i State laws requiring government agencies to promote and preserve cultural beliefs, practices. and resources of native Hawaiians and other ethnic groups;
- the State of Hawai‘i’s environmental review process under HRS §343, which requires consideration of the proposed project’s potential effects on cultural practices and cultural features in order to “promote responsible decision making” (HRS §343);
- and, the State of Hawai‘s historic preservation review process under HAR §13-275-6 and §13-284-6, which requires the identification and mitigation of adverse effects proposed by a potential project in order to “promote the use and conservation of historic properties for the education of the citizens of Hawai‘i” (HAR §13-275-6)

1.3 Document Purpose

This CIA contains information gathered from archival research and consultation, compiled in order to “analyze the impact of a proposed action on cultural practices and features associated with the project area” (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State

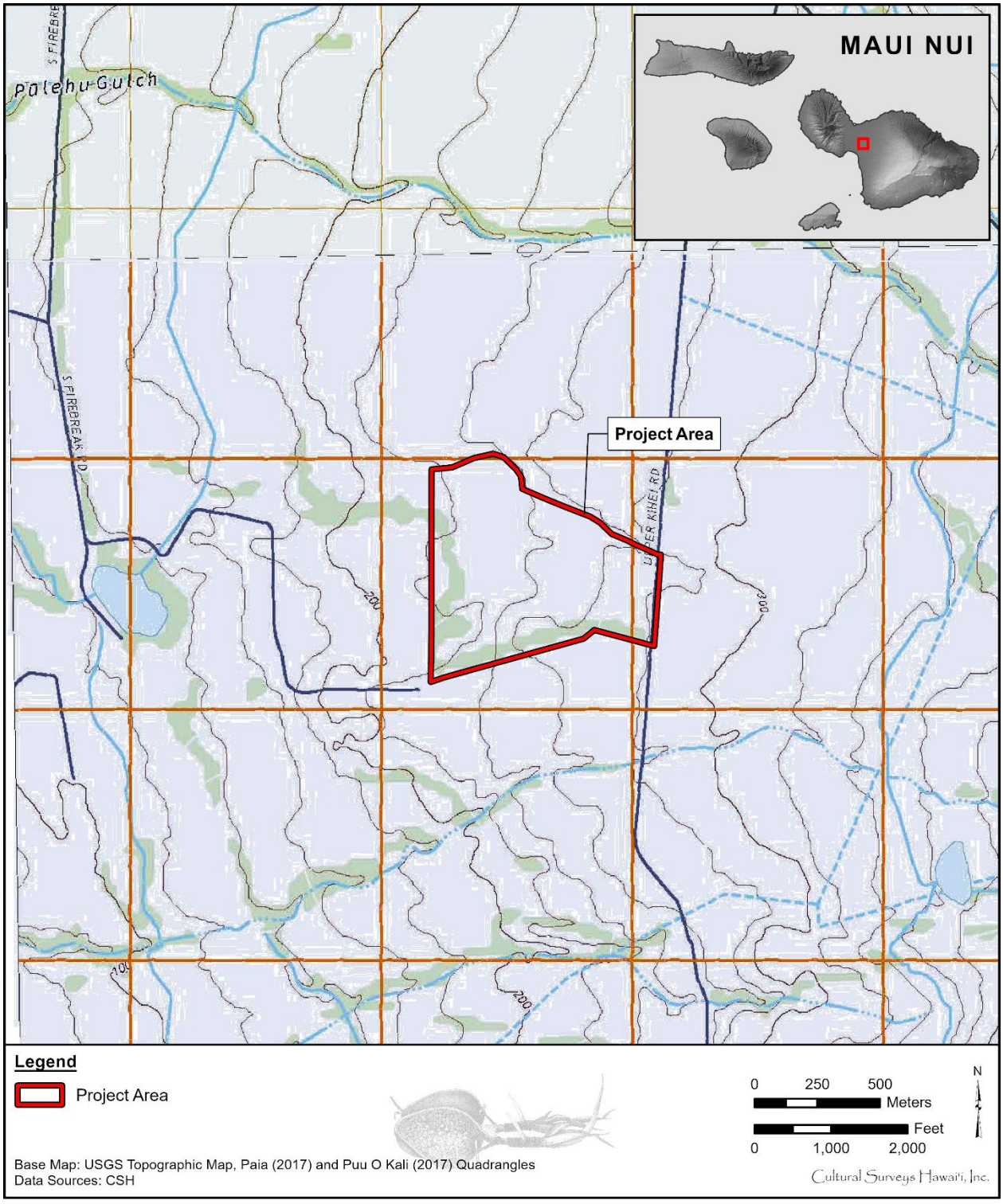


Figure 1. Portions of the 2017 Paia and 2017 Puu o Kali USGS 7.5-minute topographic quadrangles showing the location of the project area (U.S. Geological Survey 2017a, 2017b)

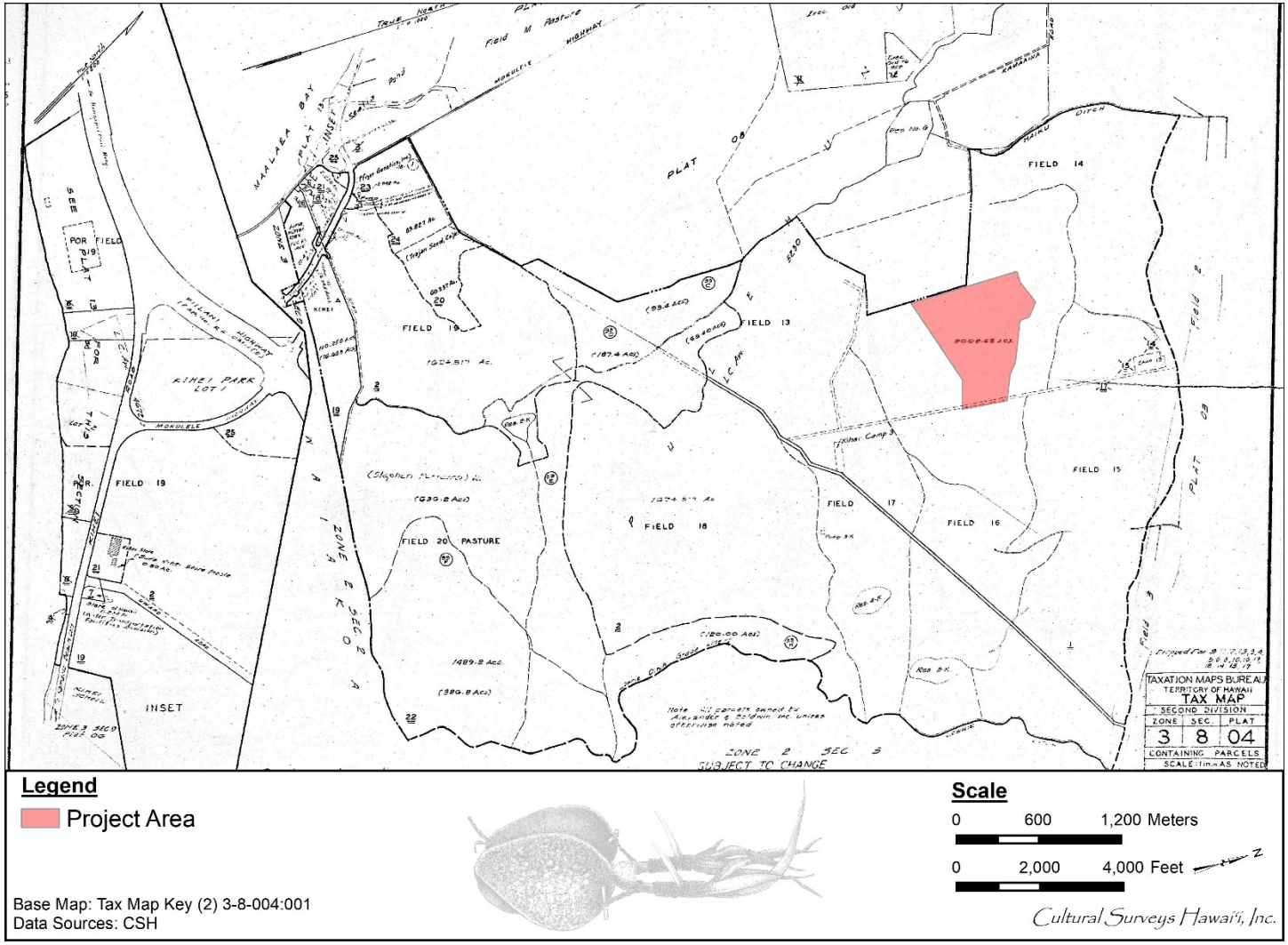


Figure 2. Tax Map Key (TMK) [2] 3-8-004 showing the project area (Hawaii TMK Service 2014)



Figure 3. EagleView Technologies Inc. (2023) aerial image of the project area

of Hawai‘i significance Criterion e, pursuant to Hawai‘i Administrative Rules (HAR) §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6).

1.4 Natural Environment

The current project area is located on the western flank of Haleakalā along the edge of the level central isthmus of Maui. The project area is approximately 4.53 km (2.81 mi) from the nearest shoreline at Mā‘alaea Bay, and the elevation is ranges from 64 to 86 m (210 to 282 ft) above mean sea level (AMSL). The topography of the project area is a gentle westward slope. The project area, and overall quarry site, is bisected by Kolaloa Gulch, a perennial tributary to Keālia Pond. Other nearby gulches include Pūlehu Gulch to the north of the project area and Keāhuaiwi Gulch to the south of the project area.

In 2014, the average monthly air temperature for the project area was between 21.43°C (70.58°F) in January and 25.50°C (77.90°F) in August, with an average annual air temperature of 23.51°C (74.31°F) (Giambelluca et al. 2014). The vicinity of the project area received a mean annual rainfall of 327.0 mm (12.87 inches) between 1978 and 2007, according to the University of Hawai‘i 2011 *Online Rainfall Atlas of Hawaii* (Giambelluca et al. 2013). The mean monthly rainfall varied between 1.4 mm (0.06 inch) in June and 82.4 mm (3.24 inches) in January. This pattern of rainfall and low annual precipitation rate once sustained a lowland, dry shrubland, and grassland native ecosystem (Pratt and Gon 1998).

Most of the project area consists of agricultural fields that were formerly cultivated with sugarcane (*Saccharum officinarum*). Under the ownership of MP Central A LLC, the land is within Fields 815 and 818 that are planted with citrus trees. Other vegetation includes *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), and grasses.

1.4.1 *Nā Lepo* (Soils)

According to the U.S. Department of Agriculture (USDA) (2001) Soil Survey Geographic (SSURGO) database and soil survey data gathered by Foote et al. (1972), the project area’s soils consist of Pulehu silt loam, 0 to 3 percent slopes (PpA), Pulehu silt loam, 3 to 7 percent slopes (PpB), Pulehu cobbly silt loam, 3 to 7 percent slopes (PrB), Waiakoa very stony silty clay loam, 3 to 7 percent slopes (WgB), Waiakoa silty clay loam, 3 to 7 percent slopes (WeB), and Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2) (Figure 4).

Pulehu Series soils are described as follows:

> This series consists of well-drained soils on alluvial fans and stream terraces and in basins. These soils occur on the islands of Lanai, Maui, Molokai, and Oahu. They developed in alluvium washed from basic igneous rock. The soils are nearly level to moderately sloping. Elevations range from nearly sea level to 300 feet. The annual rainfall amounts to 10 to 35 inches. The mean annual soil temperature is 74° F. Pulehu sops are geographically associated with Ewa, Jaucas, Kealia, Lualualei, Waialua, and Mala soils.

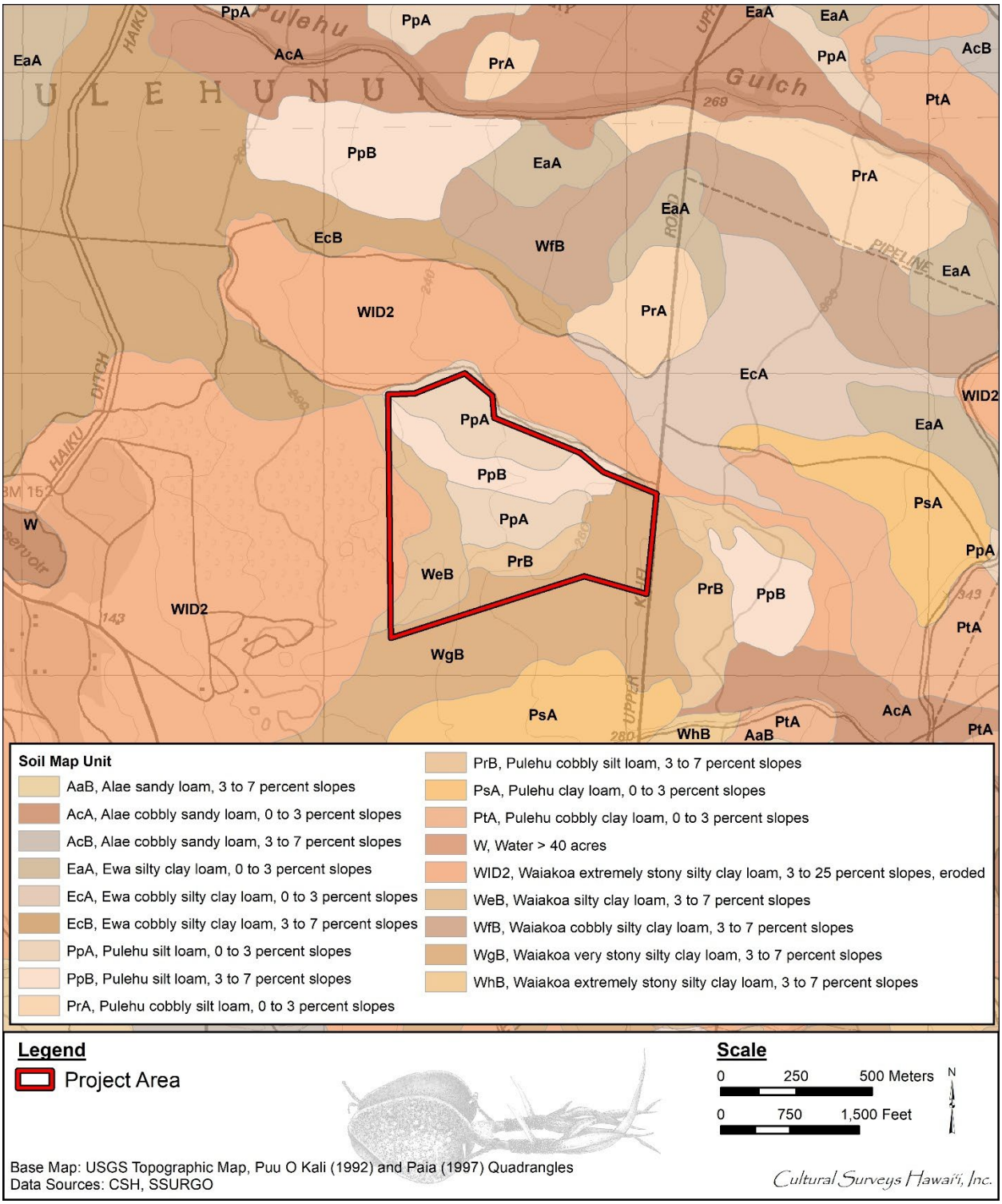


Figure 4. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (U.S. Department of Agriculture 2001)

> These soils are used for sugarcane, truck crops, pasture, homesites, and wildlife habitat. The natural vegetation consists of bermudagrass, bristly foxtail, fingergrass, kiawe, klu, lantana, koa haole, and sandbur. [Foote et al. 1972:115]

Pulehu silt loam, 0 to 3 percent slopes (PpA) is described as follows:

> This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam. This soil is used for sugarcane. Small acreages are used for homesites.
>
> (Capability classification I if irrigated, IVc if nonirrigated; sugarcane group 1; pasture group 2) [Foote et al. 1972:116]

Pulehu silt loam, 3 to 7 percent slopes (PpB) is described as follows:

> This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam. Runoff is slow, and the erosion hazard is slight. Included in mapping were small areas underlain by coral sand at a depth of 20 to 36 inches.
>
> This soil is used for sugarcane. (Capability classification IIe if irrigated, IVc if nonirrigated; sugarcane group 1; pasture group 2) [Foote et al. 1972:116]

Pulehu cobbly silt loam, 3 to 7 percent slopes (PrB) is described as follows:

> This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that the texture is silt loam, and the surface layer is cobbly. Runoff is slow, and the erosion hazard is slight. Included in mapping were small areas underlain by coral sand at a depth of 20 to 36 inches.
>
> This soil is used for sugarcane. Small areas are used for pasture. (Capability classification IIe if irrigated, IVs if nonirrigated; sugarcane group 1; pasture group 2) [Foote et al. 1972:116]

Waiakoa Series soils are described as:

> This series consists of well-drained soils on uplands on the island of Maui. These soils developed in material weathered from basic igneous rock. The upper part of the profile is influenced by volcanic ash. These soils are gently sloping to moderately steep. Elevations range from 100 to 1,000 feet. The annual rainfall amounts to 12 to 20 inches; most of it occurs in winter. The mean annual soil temperature is 74° F. Waiakoa soils are geographically associated with Keahua and Keawakapu soils.
>
> These soils are used for sugarcane, pasture, homesites, and wildlife habitat. The natural vegetation consists of buffelgrass, feather fingergrass, ilima, kiawe, uhaloa, and zinnia. [Foote et al. 1972:126]

Waiakoa very stony silty clay loam, 3 to 7 percent slopes (WgB) is described as follows:

> This soil is on smooth, low uplands. Included in mapping were small areas of Keahua and Keawakapu soils. Also included were small, nearly level areas.
>
> In a representative profile the surface layer is dark reddish-brown silty clay loam about 2 inches thick. The subsoil, about 23 inches thick, is dark reddish-brown and

> very dark grayish-brown silty clay loam that has prismatic structure or is massive. The substratum is very dark brown silty clay loam and hard, basic igneous rock. The soil is neutral in the surface layer and slightly acid to neutral in the subsoil.
>
> Permeability is moderate. Runoff is slow, and the erosion hazard is slight. The available water capacity is about 1.5 inches per foot of soil. In places roots penetrate to bedrock. [Foote et al. 1972:126]

Waiakoa silty clay loam, 3 to 7 percent slopes (WeB) is described as follows:

> This soil has a profile like that of Waiakoa very stony silty clay loam, 3 to 7 percent slopes, except that it is nonstony. Included in mapping were small, nearly level areas.
>
> This soil is used for sugarcane. Small acreages are used for pasture and homesites. (Capability classification IIe if irrigated, VIs if nonirrigated; sugarcane group 1; pasture group 1) [Foote et al. 1972:127]

Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2) is described as follows:

> This soil is similar to Waiakoa very stony silty clay loam, 3 to 7 percent slopes, except that it is eroded and stones cover 3 to 15 percent of the surface. In most areas about 50 percent of the surface layer has been removed by erosion. Runoff is medium, and the erosion hazard is severe. Included in mapping were small, steep areas. Also included were a few cinder cones.
>
> This soil is used for pasture and wildlife habitat. (Capability classification VIIs, nonirrigated; pasture group 1) [Foote et al. 1972:127]

1.4.2 *Nā Makani* (Winds)

Northeasterly trade winds prevail throughout the year, although their frequency varies from 80-95% of the time during the summer months, when high-pressure systems tend to be located north and east of the Hawaiian Islands. During the winter months, the high pressure systems are located farther to the south, decreasing the occurence of the trade winds to about 50-80% of the time (WRCC 2010).

The Hawaiian word for wind is *makani*. *The Wind Gourd of La‘amaomao* tells the story of Pāka‘a and his son Kuāpāka‘a who are descendants of the wind goddess La‘amaomao. With their possession of this special wind gourd, they could control and call forth the winds of Hawai‘i. Pāka‘a’s chant traces the winds of Maui in the *moku* of Wailuku. Five distinct winds are identified in relation to the project area and nearby *ahupua‘a*: *Wawahi-hale, Kololio, I‘a-iki, ‘O‘opu*, and *Kaua‘ula* (Nakuina 1992:51). Pāka‘a’s chant is listed below:

Kololio mai o Waikapu,	Kololio is of Waikapū,
He i‘a iki ko Wailuku,	I‘a-iki is of Wailuku,
He oopu ko Waihee,	‘O‘opu is of Waihe‘e,
Pa ka makani Kauaula,	The Kaua‘ula wind blows,

[Nakuina 1902:68;1992:62]

1.4.2.1 Maui Vortex

Pāka‘a’s wind chant recognizes an upwardly circulating wind pattern in the following lines: “*He pelu ka makani no kai, He kupa he okea ka makani*” which translates to “The wind that doubles up is of the lowlands, Kupa and Okea are the winds,” (Nakuina 1902:69;1992:63). In the iteration of the chant found in Sterling (1998:7), *okea* is written as *okee*, meaning, “To veer, as the wind, to change, as direction; to eddy” (Pukui and Elbert 1986:281).

The Maui Vortex is a diurnal weather pattern, dissipating in the evening when the slopes of Haleakalā cool. It was modelled in 1949 by Luna Leopold, Chief Meteorologist at the Pineapple Research Institute (Leopold 1949), and again in 1966 by the National Weather Service (Peterson 1966).

1.4.3 *Ua* (Precipitation)

Precipitation is a major component of the water cycle, and is responsible for depositing *wai* (fresh water) on local flora. Pre-Contact *kānaka* (Native Hawaiians) recognized two distinct annual seasons. The first, known as *kau* (period of time, especially summer) lasts typically from May to October and is a season marked by a high-sun period corresponding to warmer temperatures and steady trade winds. The second season, *ho‘oilo* (winter, rainy season) continues through the end of the year from November to April and is a much cooler period when trade winds are less frequent, and widespread storms and rainfall become more common (Giambelluca et al. 1986:17). Typically the maximum rainfall occurs in January and the minimum in June (Giambelluca et al. 1986:17). Handy and Pukui describe this seasonal change as follows:

> The season of storm and rain was termed Ho‘oilo, including roughly the period of November through March, It commenced with ‘Ikuwa (October-November) whose name means ‘Loud-voice,’ when Lono’s thunder resounds over uplands and plains. Now the long drought of summer, when the intense heat of radiation of sun on black lava combined with the steady tradewinds made the kula kai seared and dry as a black tropical desert and the kula uka brown and arid, gives way to moisture-laden southern warm fronts pressing inshore, as tradewinds lapse. November is a noisy month with variable strong winds; and with the winds come the roaring and pounding surf . . . Commencing now and continuing through the rainy months until March, there was and is little deep-sea fishing, and inshore fishing depending on those occasions when the sea was not too rough. [Handy and Pukui 1977:23]

Rainfall accumulation near the project area averages around 15 inches per year with the heaviest rainfall occurring during the winter months (December through February) and little to no rainfall during the summer months (June through August) (Giambelluca et al. 1986). This pattern of rainfall and low annual precipitation rate may have once sustained a lowland, dry shrub land and grassland native ecosystem (Pratt and Gon 1998).

It was a customary and necessary tradition to grant a name for each type of rain. Rains were named to show their action toward plants or the supposed effects on people or their possessions (Pukui and Elbert 1986:361). Names of rain referencing the *moku* of Wailuku include *Hō‘eha‘ili,* the skin-hurting rain of Waiehu (Akana and Gonzalez 2015:36); *Kili*, a delicate gentle rain associated with Waihe‘e (Akana and Gonzalez 2015:81); *Kili‘o‘opu* found at Waihe‘e, Waiehu, Wailuku and Waikapū (Akana and Gonzalez 2015:83); *Ho‘olua* (to talk loudly and pointlessly), a

heavy rain and intense north wind (Akana and Gonzalez 2015:40); *Lehua*, the wind and rain name of the *‘ōhi‘a lehua* (*Metrosideros macropus*, *M. collina subsp. polymorpha*) tree (Akana and Gonzalez 2015:146); *Līlīlehua* (tiny drops on the *lehua* blossom) appears at East Maui, Honokōwai, Kā‘anapali, Kahana, Keka‘a, Pi‘iholo and Waiehu (Akana and Gonzalez 2015:155–158); *Nahua* (to pelt, sting) is a fine rain accompanying tradewinds on the north side of Maui, Hoeuli, Honokōwai, Kā‘anapali, Kahana, Keka‘a and Lāhaināluna (Akana and Gonzalez 2015:180–183). *Uhiwai* (water covering) is the heavy mist or fog of ‘Īao, as in the following phrase: “*Nae iki ‘Īao i ka uhiwai*. (Mount) ‘Īao is barely breathing in the heavy mist.” According to Pukui and Elbert (1986:364), this was a way of describing someone in anguish. *Nāulu* is a sudden shower, cloud and wind associated with ‘Alae, East Maui, Haleakalā, Kama‘oma‘o, Kula, Lau‘ulu, Olinda, Pi‘iholo, and a rain cloud from Kaho‘olawe to ‘Ulupalakua (Akana and Gonzalez 2015:191–193); the *‘Ūkiukiu* is of Makawao (Akana and Gonzalez 2015:259); and *Ulalena* (yellowish-red) is of Liliko‘i (Akana and Gonzalez 2015:262).

1.5 Built Environment

The current project area consists mostly of agricultural fields. The adjacent quarry site includes infrastructure and equipment that are used to quarry, transport, refine, and store quarry products. Infrastructure includes crushing equipment, conveyors, office and maintenance buildings, and storage buildings. The Puunene Armory and Maui Raceway Park are located west of the project area.

Section 2 CIA Methods

2.1 Archival Research

Research centers on Hawaiian activities including *ka‘ao* (legends), *wahi pana* (storied places), *‘ōlelo no‘eau* (proverbs), *oli* (chants), *mele* (songs), traditional *mo‘olelo* (stories), traditional subsistence and gathering methods, ritual and ceremonial practices, and more. Background research focuses on land transformation, development, and population changes beginning with the early post-Contact era to the present day.

Cultural documents, primary and secondary cultural and historical sources, historic maps, and photographs were reviewed for information pertaining to the study area. Research was primarily conducted at the CSH library. Other archives and libraries including the Hawai‘i State Archives, the Bishop Museum Archives, the University of Hawai‘i at Mānoa’s Hamilton Library, Ulukau, The Hawaiian Electronic Library (Ulukau 2014), the State Historic Preservation Division (SHPD) Library, the State of Hawai‘i Land Survey Division, the Hawaiian Historical Society, and the Hawaiian Mission Houses Historic Site and Archives are also repositories where CSH cultural researchers gather information. Information on Land Commission Awards (LCAs) were accessed via Waihona ‘Aina Corporation’s Māhele database (Waihona ‘Aina 2000), the Office of Hawaiian Affairs (OHA) Papakilo Database (Office of Hawaiian Affairs 2015), and the Ava Konohiki Ancestral Visions of ‘Āina website (Ava Konohiki 2015).

2.2 Consultation

Throughout the course of this assessment, an effort was made to contact and consult with Native Hawaiian Organizations (NHO), agencies, and community members including descendants of the area, in order to identify individuals with cultural expertise and/or knowledge of the *ahupua‘a* of Pūlehunui.

2.2.1 Community Outreach, Interview, and Transcription Methods

2.2.1.1 Scoping for Participants

We begin our consultation efforts with utilizing our in-house contact list from previous outreach efforts to facilitate the interview process. This list often includes *kupuna* (elders), *kama‘āina* (native born), cultural practitioners, lineal and cultural descendants, Native Hawaiian Organizations (NHOs; includes Hawaiian Civic Clubs and those listed on the Department of Interior’s NHO list), and community groups. We also contact agencies such as SHPD, OHA, and the appropriate Island Burial Council where the proposed project is located for their response to the project and to identify lineal and cultural descendants, individuals and/or NHO with cultural expertise and/or knowledge of the study area. CSH is also open to referrals and new contacts.

2.2.1.2 Talk Story Sessions

Prior to the interview, CSH cultural researchers explain the role of a CIA, how the consent process works, the project purpose, the intent of the study, and how their *‘ike* (insight) and *mana‘o* (opinion) will be used in the report. The interviewee is given an Authorization and Release Form to read and sign.

“Talk Story” sessions range from the formal (e.g., sit down and *kūkākūkā* [consultation, discussion] in participant’s choice of place over set interview questions) to the informal (e.g., hiking to cultural sites near the study area and asking questions based on findings during the field outing). In some cases, interviews are recorded and transcribed later.

CSH may conduct group interviews, which range in size. Group interviews usually begin with set, formal questions. As the group interview progresses, questions are based on interviewee’s answers. Group interviews are always transcribed and notes are taken. Recorded interviews assist the cultural researcher in 1) conveying accurate information for interview summaries, 2) reducing misinterpretation, and 3) providing missing details for *mo‘olelo*.

CSH seeks *kōkua* (assistance) and guidance in identifying past and current traditional cultural practices of the study area. Those aspects include general history of the *ahupua‘a*; past and present land use of the study area; knowledge of cultural sites (for example, *wahi pana*, archaeological sites, and burials); knowledge of traditional gathering practices (past and present) within the study area; cultural associations (*ka‘ao* and *mo‘olelo*); referrals; and any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the study area.

2.2.1.3 Interview Completion

After an interview, CSH cultural researchers transcribe and create an interview summary based on information provided by the interviewee. Cultural researchers give a copy of the transcription and interview summary to the interviewee for review and ask them to make any necessary edits. Once the interviewee has made those edits, we incorporate their *‘ike* and *mana‘o* into the report. When the draft report is submitted to the client, cultural researchers then prepare a finalized packet of the participant’s transcription, interview summary, and any photos taken during the interview. We also include a thank you card and honoraria. This is for the interviewee’s records.

It is important to CSH cultural researchers to cultivate and maintain community relationships. The CIA report may be completed, but CSH researchers continuously keep in touch with the community and interviewees throughout the year—such as checking in to say hello via email or by phone, volunteering with past interviewees on community service projects, and sending holiday cards to them and their *‘ohana* (family). CSH researchers feel this is an important component to building relationships and being part of an *‘ohana* and community.

“*I ulu no ka lālā i ke kumu*—the branches grow because of the trunk,” an *‘ōlelo no‘eau* (#1261) shared by Mary Kawena Pukui with the simple explanation: “Without our ancestors we would not be here” (Pukui 1983:137). As cultural researchers, we often lose our *kūpuna* but we do not lose their wisdom and words. We routinely check obituaries and gather information from other informants if we have lost our *kūpuna*. CSH makes it a point to reach out to the *‘ohana* of our fallen *kūpuna* and pay our respects including sending all past transcriptions, interview summaries, and photos for families to have on file for genealogical and historical reference.

Section 3 Traditional Accounts

3.1 *Ka‘ao* and *Mo‘olelo* (Legends and Stories)

Hawaiian storytellers of old were greatly honored; they were a major source of entertainment and their stories contained teachings while interweaving elements of Hawaiian lifestyles, genealogy, history, relationships, arts, and the natural environment (Pukui and Green 1995:IX). According to Pukui and Green (1995), storytelling is better heard rather than read for much becomes lost in the transfer from the spoken to the written word and *ka‘ao* are often full of *kaona* or double meanings.

Ka‘ao are defined by Pukui and Elbert as a “legend, tale […], romance, [and/or], fiction” (Pukui and Elbert 1986:108). *Ka‘ao* may be thought of as oral literature or legends, often fictional or mythic in origin, and have been “consciously composed to tickle the fancy rather than to inform the mind as to supposed events” (Beckwith 1970:1). Conversely, Pukui and Elbert define *mo‘olelo* as a “story, tale, myth, history, [and/or] tradition” (Pukui and Elbert 1986:254). The *mo‘olelo* are generally traditional stories about the gods, historic figures or stories that cover historic events and locate the events with known places. *Mo‘olelo* are often intimately connected to a tangible place or space.

In differentiating *ka‘ao* and *mo‘olelo* it may be useful to think of *ka‘ao* as expressly delving into the *wao akua* (realm of the gods), discussing the exploits of *akua* (gods) in a primordial time. However, it is also necessary to note there are exceptions, and not all *ka‘ao* discuss gods of an ancient past. *Mo‘olelo* on the other hand, reference a host of characters from *ali‘i* (chief), to *akua* and *kupua* (supernatural beings), to finally *maka‘āinana* (commoners), and discuss their varied and complex interactions within the *wao kānaka* (realm of man). Beckwith elaborates, “In reality, the distinction between ka‘ao as fiction and mo‘olelo as fact cannot be pressed too closely. It is rather in the intention than in the fact” (Beckwith 1970:1). Thus, a so-called *mo‘olelo*, which may be enlivened by fantastic adventures of *kupua*, “nevertheless corresponds with the Hawaiian view of the relation between nature and man” (Beckwith 1970:1).

Both *ka‘ao* and *mo‘olelo* provide important insight into a specific geographical area, adding to a rich fabric of traditional knowledge. The preservation and passing on of these stories through oration remains a highly-valued tradition. Additionally, oral traditions associated with the study area communicate the intrinsic value and meaning of a place, specifically its meaning to both *kama‘āina* as well as others who also value that place.

The following section presents traditional accounts of ancient Hawaiians living in the vicinity of the project area. Many relate an age of mythical characters whose epic adventures inadvertently lead to the Hawaiian race of *ali‘i* and *maka‘āinana*. The *ka‘ao* in and around the project area shared below are some of the oldest Hawaiian stories that have survived; they still speak to the characteristics and environment of the area and its people.

3.1.1 Owl Dieties of the Plains of Kama‘oma‘o

Owls are described as one of the oldest class of *‘aumakua* (personal family gods) in Hawaiian mythology. Beckwith names the owl god Pueo-nui-akea as the restorer of life to souls who drifted the plains (Beckwith 1970:124).

3.1.2 The Story of Pumaia

The story of Pumaia tells the adventures of a man and his friend Wakaina. They traverse the two realms of the living and the dead and run into many creatures of different temperaments along their way home: a strong man kills them, an evil prophet who seeks to kill them, and a wise owl deity who intervenes in the pursuit from the evil prophet (Fornander 1919:550–554).

> Pumaia was born in Koloa, Kauai. Malaihi was the father and Kuhihewa was the mother. They lived together until the child had grown up, and his body had acquired strength, when Pumaia said to his father, ‘You will please let me go to see the club of my grandmother.’ The father gather his consent. The son went, and arriving at the house of Kiha, his grandmother, he asked, ‘Where is the club?’ ‘Here it is,’ said the grandmother . . . He shouldered the club and commenced his journey. He caught up with Wakaina, and the latter inquired, ‘Where are you journeying to?’ ‘Going sightseeing,’ replied Pumaia. ‘Please let me go with you.’ Pumaia consented and they went along.
>
> Puukolea stood forth and called out, ‘Whose offspring are you?’ ‘Our own,’ replied Pumaia. ‘If you excel in strength, you are saved; if your strength is meager, I will kill you.’ Then they commenced to fight. That man, however, had a dual body, while these had the ordinary living body. Pumaia asked Wakaina, ‘Which of us shall be the first one to fight with this man?’ The other replied, ‘It is better that I do it.’ Pumaia consented and Wakaina went to fight Puukolea. Before they commenced fighting, however, he chanted a portion of a song, thus:
>
> Behold! Behold! The mere lehua of Puuoni,
>
> Struggling with the clouds of the air,
>
> Now above, now below the rain clouds.
>
> . . . They kept on fighting until Pumaia was weakened. He thought of his club; so when Wakaina came back and inquired, ‘How are you?’ he answered, ‘I am weak; go and fetch my club; perhaps it can do something.’While they yet spoke the other man appeared in a different body. The fought on, and before Pumaia could reach for his club, he was killed by this man; Wakaina also was killed. Their spirits returned on their parents and were seen by them . . .
>
> Fear is creeping over us,
>
> Coming for us to go;
>
> We can not; we are held by Waiauau.
>
> Come to give us life!
>
> Life—indeed.
>
> When these ghosts finished their chant the parents came out immediately, but they saw nothing. They looked here and there, but they would not see them. Meanwhile the two had gone as spirits until they met Pupuilima. Some people saw these two coming, but Pupuilima said: ‘Those are not men; those are ghosts.’ ‘How do you know those are ghosts?’ said the others. So they laid wagers. Pupuilima then said to them, ‘I will spread

an ape leaf on the ground; and if it breaks, then they are men, but if it does not, then they area spirits.' He spread it. Meanwhile Pumaia said to Wakaina, 'There is our death being prepared.' 'How shall we be saved?' Pumaia explained: 'Where my feet tread there you tread; because I was raised from my young days until I died, and until I found you; for this process is like that done to Pamano when by the spreading of an ape leaf he was saved.' So when they proceeded Pumaia trod on the ape leaf and it broke through; the friend treaded after him. They were chased by the prophet until they were caught. This is what I have obtained.

While they were going along they were given chase. They came along until they caught up with Pueonuiokona. The owl, however, did not catch sight of them while they were coming. When they had passed ahead the prophet who was chasing them caught up with Pueonuiokona. The owl asked, 'What is the cause of this heavy breathing and this perspiring?' This one answered, 'That you should be asking "what"? Spirits! And there they are! I am chasing them, but can not catch them; I have been wishing to get near them so that I can kill them, for I am possessed with great anger towards them.'

When the owl heard what the prophet had said, he said to him, 'You are a prophet, and I am a prophet, still I did not see them; and now I hear you saying that if you catch then they die.' Where they were holding this conversation, however, was on the plain of Kamaomao. While the others prepared to come for the spirits, Pumaia said to his friend, 'Here comes our death; but we will wait. If the new one gets ahead of the old one then we have hope for life.'

. . . While the prophets were following, and because Pueonuiokona was the faster, an idea occurred to one of them, and he said to himself, 'If I catch up to that prophet I shall kill him, for he is simply going after my enemies to save them.' The owl went along slowly until his fellow prophet thundered after him and gave his hand a jerk. Pueo asked, 'What wrong has a fellow committed that you should tug at the arm from behind and thereby nearly tripping me?' The other replied with blazing eyes, 'Who told you to go after my enemies with the intention of saving them? Why don't you look for your own, and on them practice saving?' The owl replied: 'If you excel in strength you can obtain them, but if you are weak you can not have them; because I, even I, am an old resident of the plain. When spirits from the dead arrive I cause them to revive. Also no prophet comes to this plain; this is the first time that I have seen a prophet on this plain, and that is yourself. Because you complained of my desire to give life to those spirits, so be it! By a test of strength will [we know] whether you obtain them or I do.'

They immediately commenced to fight. Where they fought was at Kalepolepo, near the isthmus. The prophet was killed and his entrails were disemboweled by Pueonuiokona and placed on the *akolea*. That shrub used to be plentiful at that place, but it is destroyed now on account of numerous animals.

August 8, 1872

Kiliona

[Fornander 1919:550–554]

Beckwith further elaborates the ending of the story as the origin of the traditional name of the native dodder called *pōpolo* (*Cuscuta sandwichiana*), or "intestines of the prophet" (Figure 5):

> The great owl of Kona (Pueo-nui-o-Kona) fights the prophet and his entrails become spred over the akolea ferns that used to grow in that place. 39 [Hence the name of "intestines of the prophet" for the endemic species of the dodder, called popolo and used for love charms, whose yellow stems form a tangle over bushes in some parts of the islands (*Cuscuta sandwichiana.)*] [Beckwith 1970:445]

3.2 *Wahi Pana* (Storied Places)

Wahi pana are legendary or storied places in a landscape. These legendary or storied places can be a variety of natural or human-constructed features. Oftentimes dating to the pre-Contact period, many but not all *wahi pana* are connected to particular *mo‘olelo*. Dr. Davianna McGregor outlines the types of natural and human-made structures that may constitute *wahi pana*:

> Natural places have mana or spiritual power, and are sacred because of the presence of the gods, the akua, and the ancestral guardian spirits, the ‘aumakua. Human-made structures for the Hawaiian religion and family religious practices are also sacred. These structures and places include temples, and shrines, or heiau, for war, peace, agriculture, fishing, healing, and the like; pu‘uhonua, places of refuge and sanctuaries for healing and rebirth; agricultural sites and sites of food production such as the lo‘i pond fields and terraces slopes, ‘auwai irrigation ditches, and the fishponds; and special function sites such as trails, salt pans, hōlua slides, quarries, petroglyphs, gaming sites, and canoe landings. [McGregor 1996:22]

As McGregor makes clear, *wahi pana* can refer to natural geographic locations such as streams, peaks, rock formations, ridges, offshore islands and reefs, or they can refer to Hawaiian land divisions such as *ahupua‘a* or *‘ili* (traditional land division smaller than an *ahupua‘a*), and man-made structures such as fishponds. It is common for places and lanscape features to have multiple names, some of which may only be known to certain *‘ohana* or even certain individuals within an *‘ohana*, and many have been lost, forgotten, or kept secret through time. Place names also convey *kaona* and *huna* (secret) information that may even have polotical or subversive undertones. Before the introduction of writing to the Hawaiian Islands, cultural information was exclusively preserved and perpetuated orally. Hawaiians gave names to literally everything in their environment, including points of interest that may have gone unnoticed by persons of other cultural backgrounds. Hawaiians have named taro patches, rocks and trees that represented deities and ancestors, sites of houses and *heiau* (pre-Contact place of worship), canoe landings, fishing stations in the sea, resting places in the forests, and the tiniest spots where miraculous or interesting events are believed to have taken place (Pukui et al. 1974:x).

3.2.1 Place Names near Pūlehu Nui

An analysis of the place name meanings (Table 1) for the region surrounding the project area may yield some insight into the patterns of life in an area. Literal translations of several of the place names for land areas and divisions near to the project area are listed below. Unless otherwise noted, the translations are taken from Pukui and others (1974).



Figure 5. “Intestines of the prophet,” or *pōlolo* (*Cuscuta sandwichiana*). A plant whose name is based on a legend occurring on the Plains of Kama‘oma‘o. Photo courtesy of Native Plants Hawai‘i (University of Hawai‘i 2009)

Table 1. Place Names and their Meanings in the Vicinity of the Project Area

Name	***Meaning***
Kakanilua	Sandhills between Wailuku and the mill at Pu‘u Nēnē (Sterling 1998)
Kalialinui (Gulch)	Possible literal translation: “Large tree or plant used for medicine” (Pukui and Elbert 1986). Kalialinui Gulch measures some 11 miles long, beginning on the upper slopes of Haleakalā, through the project area, and on across the Wailuku Ahupua‘a, terminating on the flat plains of Kahului just south of Kanahā Pond.
Ka‘ōpala	Lit., “the rubbish”; a dividing line between Pūlehu Nui (Ahupua‘a) and Waikapū (Ahupua‘a).
Kilohana (Boundary Point)	Lit., “lookout point”; Corner of Kamehamenui, Pūlehu Nui, Kalialinui, Papa‘anui on crater rim.
Mana (Heiau)	A *heiau* called Mana, in the vicinity of ‘Ōma‘opio, “of large size and platform character, also in ruins, was found to be now used as a burial place, though in a cactus field (Thrum 1938)
‘Ōma‘opio (Ahupua‘a)	Lit., “perhaps, whistling thrush”; Ahupua‘a directly north of Pūlehu Nui.
Papa‘ula	Lit., “red flats”; the region just inland of this promontory is presently a portion of the modern Maui Country Club golf course.
Pūlehu Nui (Ahupua‘a)	Large *pūlehu* where *pūlehu* is literally translated as “broiled”. This *ahupua‘a* abuts the *ahupua‘a* of Wailuku and Waikapū, and constitutes much of the land area of the central isthmus.
Pu‘u Nēnē	Lit., “goose hill.” A cinder cone, once located just inland of Papa‘ula, mined for its gravel during WWII to construct the runways at NAS Kahului. Not to be confused with another Pu‘u Nēnē located just inland of Wawa‘u beach in Wailuku.
Pu‘u Paha	No further information found on this particuar *pu‘u* (hill) but it is depicted on the 1885 Hawaiian Government Survey Map by F.S. Dodge; located on the eastern end of the ahupua‘a near the crater of Haleakalā.
Waiakoa (Ahupua‘a)	Lit., “water [used] by warrior”; Ahupua‘a directly south of Pūlehu Nui.
Waianuhi	No further information found on this particuar feature but it is depicted on the 1885 Hawaiian Government Survey Map by F.S. Dodge.
Waikapū (Ahupua‘a)	Lit., “water of the conch”, a meaning with reference to the conch shell formerly found in a cave at Waikapū, until it was stolen by a supernatural dog, named Puapualenalena. Also, the scene of a great battle, fought between Kahekili, king of Maui, and Kalani‘opu‘u, king of Hawai‘i Island, at Waikapū Commons.

Name	*Meaning*
Wailuku (Ahupua‘a)	Lit., “water of destruction”, possibly a reference to the battle which took place at ‘Īao between the forces of Kamehameha I and the Maui chiefs. Sterling (1998) states that Pukui (1974) believes the name is older than the famous battle. Westervelt (1910) makes special reference to the waters of Wailuku in ‘Īao (Lit., “asking for clouds”) emptying into the Kahului Harbor. Fornander (1916:304) recorded that Wailuku was known as the place of flying clouds.

3.2.2 Pu‘u Nēnē

Pu‘u Nēnē, is literally translated as “goose hill” according to Pukui and others (1974:49). The site of the Hawaiian Commercial & Sugar (HC&S) sugar mill at Pu‘u Nēnē, the avenue of Pu‘u Nēnē and the school named Pu‘unēnē are not located where the actual “goose hill” once stood. The hill, named for the Hawaiian goose or *nēnē* (*Nesochen sandvicensis*), was a cinder cone built by lavas of the Kula series (Stearns and MacDonald 1942:83), elevation 187 feet (56 meters), that was located some 4 miles northeast of the Pu‘u Nēnē Mill. Most all of the cinder from Pu‘u Nēnē was removed to pave the runways of the Pu‘u Nēnē Naval Air Station Kahului during WWII. Families with grave sites were notified by the plantation and the military to remove their burials prior to the excavation of the cinder (Saito 2008).

3.2.3 Kama‘oma‘o: A Wandering Place of Spirits

Ke Kula o Kama’oma’o, or the Plains of Kama‘oma‘o, is a region of the central Maui isthmus close to the present project area that was known by Hawaiians in traditional times as a wandering place of the souls (Beckwith 1970), a place where dead spirits waited for a friendly escort, perhaps a family *‘aumakua*, to show them the way to eternity:

> The worst fate that can befall a soul is to be abandoned by its aumakua and left to stray, a wandering spirit (*kuewa*) in some barren and desolate place, feeding upon spiders and night moths. Such spirits are believed to be malicious and to take delight in leading travelers astray; hence the wild places which they haunt on each island are feared and avoided. Such are the plains of Kama‘oma‘o on the island of Maui, the rough country of Kaupea at Pu‘uloa on Oahu, Uhana on Lanai, Maohelaia on Molokai, Mana on Kauai, Halali‘i on Ni‘ihau. In these desolate places lost spirits wander until some friendly *aumakua* takes pity upon them (Beckwith 1970:154). in leading travelers astray; hence the wild places which they haunt on each island are feared and avoided. Such are the plains of Kama‘oma‘o on the island of Maui, the rough country of Kaupea at Pu‘uloa on Oahu, Uhana on Lanai, Maohelaia on Molokai, Mana on Kauai, Halali‘i on Ni‘ihau. In these desolate places lost spirits wander until some friendly *aumakua* takes pity upon them. [Beckwith 1970:154]

3.2.4 Mau‘oni and Kanahā

On the north shore of the central isthmus lie the fish ponds named Mau‘oni and Kanahā. A traditional story concerning their construction appears in Sterling (1998:87–88), based on an interview with Mrs. Rosalie Blaisdell in 1923 by J.F.G. Stokes (BPBM Anthropology Department archives, Grp 7, 10.10.C9). According to tradition, construction of the pond walls was begun by an O‘ahu chief, but finished by Kamehamehanui, king of Maui in the mid-1700’s. The story

established that Kapiiohookalani, the original architect of the two ponds and one-time king of O‘ahu and half of Moloka‘i, was killed in battle before he could complete the construction of the pond walls. His daughter, Kahamaluihiikeaoihilani, sought her brother, Kanahaokalani, and searched Moloka‘i and Maui for him. The pond walls were finished by Kamehamehanui, who placed a *kapu* (prohibition) on the bank, or *kuapa*, dividing the two ponds. The chiefess Kahamaluihii was born of such high rank that she was able to break the *kapu* by walking on the center *kuapa* of the ponds. Following this act, Kamehamehanui allowed her to name the ponds. She named Kanahā for her brother, and Mau‘oni for the identity she travelled by to protect her status as a chiefess of the highest rank.

Sterling (1998) also noted two references by Samuel Kamakau (1992) stating that Kihapi‘ilani had built the stonework separating the two ponds at a much earlier time than the work performed by Kamehamehanui. Kanahā is a wetland sanctuary that is home to a large population of native Hawaiian stilts (*‘ae‘o*). Over fifty species of birds have been observed here, including herons, geese, ducks, owls, plovers, sandpipers, tattlers, coots, pheasants and doves (Pukui et al. 1974:83).

3.2.5 Boundary Commission Testimony of H. Kuihelani

The Boundary Commission was established in 1862 to delineate in legal terms the borders of *ahupua’a* awarded during the Māhele. Descriptions of land boundaries, environmental features, cultural practices and Native Hawaiian views of the land were captured in the testimonies that were recorded by the Boundary Commission between 1871 to 1896 (Maly and Maly 2006:80).

The following is an excerpt from the testimony of H. Kuihelani that is rich in descriptions of cultural practices in the study area: lineal connections to Wailuku; stewardship of Mau‘oni and Kanahā fish ponds; fish harvesting and salt bundling practices at Pukaulua; the gathering of *ma‘o* (*Gossypium sandvicense*) at Kama‘oma‘o for use in *kapa* (bark cloth) making; references to *pōhaku* (stones) that mark the boundaries of Wailuku, and the spiritual associations of Kama’oma’o (Maly and Maly 2003:357–358):

> *H. Kuihelani hoohikiia a olelo mai:*
>
> *I Wailuku ku‘u wahi i hanau ai, he kanalima paha o‘u M.H. i noho ai ma keia aina o Wailuku nei a keu aku paha. Ua noho ku‘u makua i konohiki no Wailuku nei. Aole au i noho konohiki. Aka ua ike nae au ia Mauoni ame Kanaha. He mau loko ia ma Wailuku nei, mokupuni o Maui. I kuu wa uuku ua hele pu au me ku‘u makuakane ma keia wahi i haiia ae la. He umi paha o‘u makahiki ia manawa. No ka Moi, Elua ia mau loko ia. Ua hele au mahope iho o ka manawa o Kamehameha Ekolu. Ia makou na‘e ka malama oia mau loko. Na makou no e lave i ka i-a.*
>
> *Apau o Kamehameha Ekolu, o Kamehameha Eha iho, aole nae ia makou ka malama ia manawa. O P. Nahaolelua ka mea nana e malama nei i keia mau loko ia i ke ahupuaa o Wailuku, Maui. Keahua ka palena o Wailuku ma ke kai. Ia‘u ka malama oia kai mai ku‘u makuakane mai, oia ka aina i oleloia iho nei o Pukaulua. Aia no ia ili aina ia‘u i keia manawa. No ka Moi ke kai. Aole poe i aeia e kii i kela ia iloko o na loko ia, no ka mea ua kapu loa ke kii i ka ia. Aia no a hu ka i-a mawaho o ka loko alaila hiki i kela mea, keia mea ke kii i ka i-a mawaho wale no o na loko. He paakai no kolaila. He opeia ka paakai a laveia na na alii. Aole au i ike i ka aina o Kalialinui e oleloia nei. Aole au i hele i Kalialinui e laveia ai. Ua ike au ia*

Kamaomao, ua koke no ia Pohaku, ke ahupuaa o Wailuku, Maui nei ko Hawaii Pae Aina…

…Ua hoohuliia kanaka i ke kukulu ana i ka pa mawaho o na loko ia, ma Oopuola. O Kihapiilani ke Alii o Maui ia manawa, nana no i hoohuli na kanaka i ke kukulu ana i ka pa. Ua ike au i ka pohaku o Makaku. O ku‘u lohe he pohaku kela no na uhane e hui ai. Pela mai ka olelo a kekahi poe. Ame Kamaomao kekahi, ua hele makou e ohi i mao no na alii i mea e ala ai na Kapa Aahu o lakou. Aole poe kanaka e ae, o na kanaka wale iho la no o Wailuku, Maui, Hawaii Pae Aina. [Volume No. 1:10–11]

H. Kuihelani, sworn and says:

My birth place is at Wailuku, I have lived on the land of Wailuku for fifty years, a little more perhaps. My father was the konohiki of Wailuku. I was not a konohiki. But, I do know Mauoni and Kanaha. They are fishponds of wailuku, Island of Maui. When I was little I went with my father to this place spoken of. I was perhaps ten years old at the time. For the King, two fishponds. I went after the time of Kamehameha Third. It was us who cared for those ponds. It was us who took the fish.

When Kamehameha Third died, it went to Kamehameha Fourth; we did not take care of them then. P. Nahaolelua is the one who cares for these fishponds in the ahupuaa of Wailuku, Maui. Keahua is the boundary of Wailuku at the shore. I am the one who has stewardship of sea (fishery); it is from my father; that land mentioned is Pukaulua. I have that land section at this time. The fishery is for the King. People are not allowed to take the fish from within the fishponds, because the harvesting of fish is restricted. Though when the fish overflow from the ponds, then this person and that person can harvest the fish that are on the outside of the ponds. There is also salt there. The salt is bundled up and taken by the chiefs. I do not know the land of Kalialinui, spoken of. I did not go to take things from Kalialinui. I know of Kamaomao, the stone is close to pig-cairn (boundary marker) of Wailuku, Maui of the Hawaiian Islands…

…Men were sought out to construct the wall outside of the ponds, at Oopuola. Kihapiilani was the Chief of Maui at that time, it was he who sought out the men to build the wall. I know of the stone of Makaku. What I heard was that it is a stone where the spirits gather. That is what some people say. And Kamaomao is one also; we used to go gather mao [a native hibiscus] for the chiefs, as something with which they would scent their Kapa Clothing. No other people, only the people of Wailuku, Maui, Hawaiian Islands… [Maly, translator] (Maly and Maly 2003:357–358)

3.2.6 *Heiau*

Sterling (1998:253) describes two *heiau* located at Pūlehu Nui:

Haleokane Heiau, Walker Site 221

Location: At Poonahoahoa above the main road one hundred and fifty years, and beyond the end of the side road.

> Description: A small heiau platform only 22 x 30 feet. It is largely hidden in the grass and earth but an edge of the terrace 3 feet high can be seen. In spite of its small size the natives attach considerable importance to it and report noise of drums on the night of Kane. The name Haleokane was given by the old woman on whose property the heiau stands but the other kamaainas did not regard her information as accurate. [Walker in Sterling 1998:253]

The second *heiau* mentioned by Sterling is described below:

> Nininiwai Heiau, Walker Sites 222 and 223
>
> Location: Nininiwai was a heiau on the mauka side of the main road near the branch road. It was destroyed in clearing the land for pineapples. The other heiau is located on a hill in the midst of the cactus a mile and a half below the main road and near the branch road.
>
> Description: A medium-sized walled heiau, 50 x 50 feet. It is double-terraced on the north side and the wall is here 10 feet thick. Elsewhere it is 6 feet thick. There is a small enclosure in one corner. Cattle are continually trampling over this heiau and will in a short time reudce it to a shapeless pile of rocks. [Walker in Sterling 1998:253]

3.3 *‘Ōlelo No‘eau* (Proverbs)

Hawaiian knowledge was shared by way of oral histories. Indeed, one’s *leo* (voice) is oftentimes presented as *ho‘okupu* (“to cause growth,” a gift given to convey appreciation, to strengthen bonds); the high valuation of the spoken word underscores the importance of the oral tradition (in this case, Hawaiian sayings or expressions), and its ability to impart traditional Hawaiian “aesthetic, historic, and educational values” (Pukui 1983:vii). Thus, in many ways these expressions may be understood as inspiring growth within reader or between speaker and listener:

> They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawai‘i and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawai‘i, they bring us closer to the everyday thoughts and lives of the Hawaiians who created them. Taken together, the sayings offer a basis for an understanding of the essence and origins of traditional Hawaiian values. The sayings may be categorized, in Western terms, as proverbs, aphorisms, didactic adages, jokes, riddles, epithets, lines from chants, etc., and they present a variety of literary techniques such as metaphor, analogy, allegory, personification, irony, pun, and repetition. It is worth noting, however, that the sayings were spoken, and that their meanings and purposes should not be assessed by the Western concepts of literary types and techniques. [Pukui 1983:vii]

Simply, *‘ōlelo no‘eau* may be understood as proverbs. The Webster dictionary notes it as “a phrase which is often repeated; especially, a sentence which briefly and forcibly expresses some practical truth, or the result of experience and observation.” It is a pithy or short form of folk wisdom. Pukui equates proverbs as a treasury of Hawaiian expressions (Pukui 1995:xii). Oftentimes within these Hawaiian expressions or proverbs are references to places. This section

draws from the collection of author and historian Mary Kawena Pukui and her knowledge of Hawaiian proverbs describing *‘āina* (land), chiefs, plants, and places. The following proverbs concerning the larger area of Pūlehunui come from Mary Kawena Pukui's *‘Ōlelo No‘eau* (Pukui 1983).

3.3.1 *‘Ōlelo No‘eau* # 1534

The following *‘ōlelo no‘eau* describes the four main water sources on Maui.

Na wai ‘ehā.

The four waters.

A poetic term for these places on Maui: Wailuku, Waiehu, Waihe‘e, Waikapū, each of which has a flowing water (wai). [Pukui 1983:251]

3.3.2 *‘Ōlelo No‘eau* # 2647

The following *‘ōlelo no‘eau* plays on the word *luku* (destruction) in Wailuku.

Pili ka hanu o Wailuku.

Wailuku holds its breath.

Said of one who is speechless or petrified with either fear or extreme cold. There is a play on *luku* (destruction). Refers to Wailuku, Maui. [Pukui 1983:290]

3.3.3 *‘Ōlelo No‘eau* # 2578

The following *‘ōlelo no‘eau* describes two ponds in Kahului, Maui: Mau‘oni and Kanahā.

Pākāhi ka nehu a Kapi‘ioho.

The *nehu* of Kapi‘ioho are divided, one to a person.

Kapi‘ioho, ruler of Moloka‘i, had two ponds, Mau‘oni and Kanahā, built on his land at Kahului, Maui. The men who were brought from Moloka‘i and O‘ahu to build the ponds were fed on food brought over from Moloka‘i. The drain on that island was often so great that the men were reduced to eating nehu fish, freshwater ‘ōpae and poi. The saying is used when poi is plentiful but fish is scarce and has to be carefully rationed. [Pukui 1983:284]

3.3.4 *‘Ōlelo No‘eau* # 1481

The following *‘ōlelo no‘eau* all pertain to the same area called Kama‘oma‘o. This place was famous for it‘s connection to wandering spirits.

Kama‘oma‘o, ka ‘āina huli hana.

At Kama‘oma‘o, land of activities.

Ghosts who do not go to the pō of their ancestors often wander about in certain areas. Kama‘oma‘o, Maui is such a place. The activities of such ghosts usually annoy the living. [Pukui 1983:160]

3.3.5 *‘Ōlelo No‘eau* # 1514

Ka ‘ōlohe puka awakea o Kama‘oma‘o.

The bare one of Kama‘oma‘o that appears at noonday.

The plain of Kama‘oma‘o, Maui, is said to be the haunt of ghosts (‘ōlohe) who appear at night or at noon. Also a play on ‘ōlohe (nude), applied to one who appears unclothed. [Pukui 1983:164]

3.3.6 *‘Ōlelo No‘eau* # 1761

Ka ‘ōlohe puka awakea o Kama‘oma‘o.

The bare one of Kama‘oma‘o that appears at noonday.

The plain of Kama‘oma‘o, Maui, is said to be the haunt of ghosts (‘ōlohe) who appear at night or at noon. Also a play on ‘ōlohe (nude), applied to one who appears unclothed. [Pukui 1983:164]

3.4 *Oli* (Chants)

Oli, according to Mary Kawena Pukui (Pukui 1995:xvi–xvii) are often grouped according to content. Chants often were imbued with *mana* (divine power); such *mana* was made manifest through the use of themes and *kaona*. According to Pukui, chants for the gods (prayers) came first, and chants for the *ali‘i*, “the descendants of the gods,” came second in significance. Chants “concerning the activities of the earth peopled by common humans,” were last in this hierarchy (Pukui 1995:xvi–xvii). Emerson conversely states:

> In its most familiar form the Hawaiians–many of whom [were lyrical masters]–used the oli not only for the songful expression of joy and affection, but as the vehicle of humorous or sarcastic narrative in the entertainment of their comrades. The dividing line, then, between the oli and those other weightier forms of the mele, the inoa, the kanikau (threnody), the pule, and that unnamed variety of mele in which the poet dealt with historic or mythologic subjects, is to be found almost wholly in the mood of the singer. [Emerson 1965:254]

While *oli* may vary thematically, subject to the perspective of the *ho‘opa‘a* (chanter), it was undoubtedly a valued art form used to preserve oral histories, genealogies, and traditions, to recall special places and events, and to offer prayers to *akua* and *‘aumākua* alike. Perhaps most importantly, as Alameida (1993:26) writes, “chants […] created a mystic beauty […] confirming the special feeling for the environment among Hawaiians: their *one hānau* (birthplace), their *kula iwi* (land of their ancestors).”

3.4.1 A Travel Chant

Pau ‘ole ko‘u mahalo i ka laulā o Kama‘oma‘o	My admiration is endless for the expanse of Kama‘oma‘o
Ka hālana maika‘i a Keālia	The fine rising of the waters of Keālia
Ka hemolele o ka ua ‘Ulalena	The perfection of the ‘Ulalena rain
Lena ka pua o ka māmane pala luhiehu i ka lā	Yellow are the blossoms of the māmane, soft and lovely in the sun

[Akana and Gonzalez 2015:267]

3.4.2 A *Kapa* Chant for Lili‘uokalani (also known at Kamaka‘eha)

‘A‘ahu ‘o Kamaka‘eha i ke kapa kūkai	Kamaka‘eha wears the kapa dipped frequently in the sea
He kapa no ka po‘e ‘akuku o Lele	A kapa of the kapa-beating people of Lele
Pua ma‘o ke kapa, he moe ‘ao‘ao kilohana	Kapa dyed with ma‘o blossoms, the kilohana layer for a bed
Kaula‘i ana i ka ua Līlīlehua	Hanging in the Līlīlehua rain
I ka ua Pa‘ūpili o Kahana	In the Pa‘upili rain of Kahana

[Akana and Gonzalez 2015:156–157]

3.4.3 *Oli Aloha* by Keaulumoku

Born of Kauakahiakuanui and Naohaku, Keaulumoku was a great composer of war chants, love chants, and genealogical chants in the days of Kalani‘opu‘u (Kamakau 1992:112). The following *oli* was composed after he returned to Hawai‘i with Kalani‘opu‘u. His thoughts returned to Maui as he longed dearly for his homeland and this *oli* was written:

Alo—ha, alo—ha--	Affectionate longing, affectionate longing ,
Aloha wale o‘u maku—a la—e o‘u makua,	Affection for my (foster) parents, my parents,
Aloha wale o‘u makua	Affection for my parents
Mai na ‘aina Hamakua,	Who belong to Hamakua,
He mau ‘aina Hamakua elua,	The two districts of Hamakua,
No‘u mua kaikua‘ana i noho ai.	Where my elder brothers live.
He ala pali na‘u he mau ali‘i ia,	My hillside trails are theirs to rule,
O ka hanai ana komo ke aloha,	They nurtured me until I loved them;
Lele hewa au i he mau kaikua‘ana—e	I find myself with other elder brothers
‘A‘ole—he mau mea ‘e wale no o laua.	Who are not the same to me.
He ua i pono –e—pono ia ua.	Let the rain fall, for rain is good.
A he ua i halaka‘, he mahala,	It patters down, it pelts down,
Pehi hewa i ka nahele,	It crushes the forest growth,
Kua‘oa kanikani i ka pua lehua.	It sprinkles musically on the lehua.
Ua ua lehua, he lehua hala,	The lehua trees blossom, the yellow lehua,
Ua i ka lehua o Kailua.	When the rain comes to the lehua of Kailua.
Lehua maka konunu i ka wai,	The lehua petals are heavy with raindrops,
Konunu konunu oha‘ha‘.	Heavy, heavy and full-blown.
Halana makapehu wale no kie ia,	They know not the pangs of thirst
Pehu, ua mae ka maka mua o ka hinalo ho‘i.	That wilt the first-blown pandanus bloom.
Ho‘i ka ua ma Haneho‘i,	The rain returns by way of Haneho‘i,

Ma ka lae o Pu‘umaile i Hoalua,	Along the brow of Pu‘umaile to Hoalua,
Ma kahakua o Pu‘ukoa‘e,	Over the ridge of Puukoa‘e,
Ma ke alo pali o Huelo.	Before the face of the cliff to Huelo.
Ua poha‘ Kaumealani,	There it pours down on Kaumealani,
Ua ko ia e ka pua nui	The rain that brings out the full-blown flowers
Hukia aku la lilo i kai	And draws them close down to the shore.
Lilo aku la ua i ka moana,	The rain goes out to sea,
He maka o Hawini ia ua,	It falls on Hawini like teardrops,
He ua ‘alo ma ka lae,	It passes along over the capes,
Nihi pali nihi lae.	It creeps by the cliffs and capes,
Nihi i ka lae o Mokupapa.	Creeps by the cape of Mokupapa.
Hele wale ka ua a kipa wale,	The rain comes uninvited,
Ka ua pe‘e hala huna kai o--	The rain that hides in the hala groves below,
O—huna huna lauki.	Whose fine drops water the ti plant.
Huna ke kupa i ka hala mua a kau.	The native-born hides away the first hala fruit of the summer.
U-u-e ua wahia e ka ua o ka ho‘oilo.	And weeps over the stormy rains of winter.
E ke kuawa kahi o kau	Oh! For the light summer showers
Nana i ho‘oko‘o nei ka pua!	That brought forth the blossoms!
Aui ka pua noho ‘ao‘ao i ke ka,	The blossoms droop with stem half-broken,
Aui e noho e na pua polo pe‘a;	The blossoms hang wilted and uncared-for;
Pala ka‘ao, ka‘ao ka pola,	The fruit clusters, ripened above,
Loli helele‘i ahu ilalo;	Mildew and fall in heaps to the ground;
Loli ka‘ao ka hala me ka hinalo.	Both fruit and flowers are mildewed.
O ka hala o ka ‘ohi‘a lana i ka wai	The hala fruit and the mountain apples drop into the stream
I ka‘ i ke kahawai o Kakipi,	And are washed down in the stream of Kakipi,
Ilina iluna o ka mau‘u kuku‘,	Washed up on thorny weeds,
I ka pua po‘o o ka mau‘u pu‘uko‘a	Up on the flowers of coarse grasses
I kahi a maua e hele ai,	Where we two have wandred,
Me ku‘u wahine i ka ua hala o Kulo—li,	My wife and I, to the rain-wet hala grove of Kuloli,
A ‘oia loli ke ala iho ma ka lau,	Fragrant among the leaves,
Lauhala—e a ke ‘o‘i‘o‘ina ‘oe i Ko‘olahale,	The hala leaves over the resting place of Ko‘olahale,
‘Ike aku i ka mahina hiki‘alo‘alo	Where we watched for the belated moon

One ku a ki‘i ke kaha o Malama,	To rise over the cinder cone of Malama.
Malamalama ke one kea ke hele ia,	The white sands are plainly to be seen if we wish to go there,
Kipa ke alanui mauka o Waiakuna,	Over the upland trail of Waiakuna
He kuna—e.	Winding like the fresh-water eel.
Me he kuna kuhe la ke oho o ke kukui,	The *kukui* leaves look dark like the gobey fish,
I ka ho‘olu‘u lupekolo ia e ke hau	When overshadowed by the twining *hau* trees
A lipo a ‘ele‘ele i ka waokoa	Deep in the dusky koa forest.
He ‘ele‘ele ko ke kukui noho malu,	Dark are the leaves of the *kukui* in the shade,
He lena ho‘i ka lau o kekahi kukui	The leaves are pale yellowish green
O ke kukui aku i waho i ka la,	In the full light of the sun,
I ka ua ia e ka ua ‘ulalena.	Watered by the rainbow-tinted rain.

[Kamakau 1992:112–115]

3.5 *Mele* (Songs)

The following section draws from the Hawaiian art of *mele*, poetic song.

> Words and word combinations were studied to see whether they were auspicious or not. There were always two things to consider the literal meaning and the *kaona*, or ‘inner meaning.’ The inner meaning was sometimes so veiled that only the people to whom the chant belonged understood it, and sometimes so obvious that anyone who knew the figurative speech of old Hawai‘i could see it very plainly. There are but two meanings: the literal and the *kaona*, or inner meaning. The literal is like the body and the inner meaning is like the spirit of the poem. [Pukui 1949:247]

> The Hawaiians were lovers of poetry and keen observers of nature. Every phase of nature was noted and expressions of this love and observation woven into poems of praise, of satire, of resentment, of love and of celebration for any occasion that might arise. The ancient poets carefully selected men worthy of carrying on their art. These young men were taught the old *meles* and the technique of fashioning new ones. [Pukui 1949:247]

There are few late nineteenth, twentieth, and twenty-first century *mele* concern or mention Pūlehunui Ahupua‘a. These particular *mele* may also be classified as *mele wahi pana* (songs for legendary or historic places). *Mele wahi pana* such as those presented here may or may not be accompanied by *hula* (dance) or *hula wahi pana* (dance for legendary or historic places). As the Hula Preservation Society notes,

> Hula Wahi Pana comprise a large class of dances that honor places of such emotional, spiritual, historical, or cultural significance that chants were composed for them. Only the composers of the chants could know the deepest meanings, as they would be reflections of their feelings and experiences […] Since the subjects of Wahi Pana compositions are extremely varied, their implementation through

> hula are as well. Coupled with the differences from one hula style and tradition to the next, Hula Wahi Pana can be exceptionally diverse. They can be done sitting or standing, with limited body movement or wide free movement; with or without the use of implements or instruments; with the dancers themselves chanting and/or playing an implement or being accompanied by the *ho‘opa‘a* [drummer and *hula* chanter (memorizer)]. Beyond the particular hula tradition, what ultimately determines the manner in which a Hula Wahi Pana is performed are the specific place involved, why it is significant, the story being shared about it, and its importance in the composer’s view. [Hula Preservation Society 2014]

3.5.1 Maui Nani (Beautiful Maui)

Composed for James Kaupena Wong by Johanna Koana Wilcox, this song describes the beauty that makes up the island of Maui. James Kaupena Wong was well known for his art in hawaiian chanting and as a hula dancer.

Hanohano ‘o Maui mai kinohi mai	Regal has Maui been from its
Kuahiwiw kilakila o Haleakalā	With majestic Haleakalā, an imposing sight
Maika‘i na hono a‘o Pi‘ilani	And the charming bays of Pi‘ilani
Ha‘aheo ‘o Maui nani Lanikēhau	Maui is stately with sublime beauty
Uluwehi ka hi‘ona o nā wai ‘ehā	Lush with verdure are four towns
Nā wai kaulana ma ke komohana	Well known towns of West Maui
Wai mililani ‘ia e ka malu o ke ao	Towns fondly caressed by sheltering skies
Ha‘aheo ‘o Maui ‘āina kamaha‘o	Maui is stately with wonders untold
Kaulana e ka ua Laniha‘aha‘a	Famous is the rain pouring from low skies
Ke kupa aiwaiwa nani lā a‘o Hana	Ethereal native of Hana
‘Ano‘ai Ka‘uiki au i ke kai	Greetings to Ka‘uiki reaching into the sea
Ha‘aheo ‘o Maui ka wai ‘anapanapa	Maui is famed for the waters that sparkle
Puana ka wehi ho‘ohenoheno	Now ends my song of adulation
No ka pua miulana nani i ka hano	To the lovely miulana hereby honored
Me ‘oe ka welina o ku‘u aloha	To you, my warm greetings
Ha‘aheo ‘o Maui nani Lanikeha	Maui, you are stately and supremely beautiful

[Huapala n.d.]

3.5.2 Lovely Sunrise Haleakalā

This song, written by John Kameaaloha Almeida, glorifies the beauty of Haleakalā, the most prominent mountain on the island of Maui. The composer, John Almeida, was well-known, not only for the music he composed, but for the fact that the was blind and carried his talent through this disability.

He nani he beauty maoli nō	Beauty, true beauty,
Oh, lovely sunrise Haleakalā	Oh, lovely sunrise Haleakalā
Kuahiwi nani a he kū kilakila	Beautiful mountain so majestic,
Kehakeha i ka maka la o ka ‘ōpua	So prominent in the midst of the clouds.
Kaulana ko inoa puni ka hōnua	Your name famous around the world,
Māka‘ika‘i la e nā malihini	Visitors come to look at you.
Moani ke ‘ala ma ka hikina	Gentle breeze from the east brings,
No ka pua roselani leo onaona	The fragrance of the rose lei.
Kaulana nā Hono a Pi‘ilani	Famous are the bays of Pi‘ilani,
Ho‘oheno pū me nā wai ‘ehā	Cherished together by the four wai named lands,
Puana he beauty maoli nō,	Tell of the true beauty,
Oh, lovely sunrise Haleakalā	Oh, lovely sunrise, Haleakalā.

[Huapala n.d.]

3.5.3 Waikapū/‘Iniki Mālie

This song describes the winds of the four water-lands in Maui: Waikapū, Wailuku, Waiehu, and Waihe‘e. The meaning of each name is described below by Pukui (1974). Waikapū, water of the conch. A conch found in a cave in this area could be heard anywhere througout the Hawaiian Islands. It was stolen by a supernatural dog named Puapualenalena whose name meant yelow tail feathers. Wailuku, water of destruction. Wailuku was the battle site where Kalani‘ōpu‘u‘s army was nearly annihilated by Kahekili. Waiehu, meaning water spray and Waihe‘e, meaning slipping water.

Waikapū makani Kokololio,	Waikapū wind in gusts,
He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.	Skin-stinging wind gently pinching.
Wailuku makani Lawemālie,	Wailuku wind becoming gentle,
He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.	Skin-stinging wind gently pinching.
Waiehu makani Hō‘eha‘ili	Waiehu wind paining the skin,
He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.	Sking-stinging wind gently pinching
Waihe‘e makani Kili‘o‘opu	Waihe‘e graceful wind,
He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.	Sking-stinging wind gently pinching.
Ha‘ina mai ana ka puana,	Tell the refrain,
He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.	Sking-stinging wind gently pinching.

[Huapala n.d.]

Section 4 Historic Background

The division of Maui's lands into political districts occurred during the rule of Kaka‘alaneo, under the direction of his *kahuna* (priest), Kalaiha‘ōhi‘a (Beckwith 1970:383). This division resulted in twelve districts, or *moku*, during traditional times: Kula, Honua‘ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko‘olau, Hāmākualoa, Hāmākuapoko, Wailuku, Kā‘anapali, and Lāhainā. The current project area is located on the western flank of Haleakalā in the *moku* of Kula and *ahupua‘a* of Pūlehunui. Overall, Pūlehunui Ahupua‘a begins at Kilohana Peak, on the summit ridge of Haleakalā, and ends at a mid-point on the west shore of the central plains at a shared boundary with Waikapū Ahupua‘a, encompassing a total area of 16,687.78 acres (McCully 1879).

4.1 Pre-Contact to Early Post Contact

While the mythological and traditional accounts of the area are relatively scarce, an analysis of the *wahi pana* meanings for the region may yield some insight into the patterns of life in the area prior to Western contact (Table 2). In *Native Planters in Old Hawaii,* E. S. C. Handy et al. (1991:23–24, 42) summarizes the relationship that traditional Hawaiians have had with the natural environment best in the following passage:

> The sky, sea, and earth, and all in and on them are alive with meaning indelibly impressed upon every fiber of the unconscious as well as the conscious psyche. Hawaiian poetry and folklore reveal this intimate rapport with the elements [Handy et al. 1991:23–24]
>
> (T)he relationship which existed from very early times between the Hawaiian people … is abundantly exemplified in traditional mele (songs), in pule (prayer chants), and in genealogical records which associate the ancestors, primordial and more recent, with their individual homelands, celebrating always the outstanding qualities and features of those lands. [Handy et al. 1991:42]

The provided place names, together with the environmental data, suggest that the lands of coastal Pūlehunui were rich in marine resources. Previous research on pre-Contact occupation in Kula District (Kolb et al. 1997) has suggested that most permanent habitations were in the uplands with a smaller permanent population located along the coastline. While a reconstruction of the coastal archaeological landscape of Kula Moku underscores the importance of the uplands as a focus of agriculture and habitation, Hawaiian traditions and the presence of four fishponds are evidence that the coastal environs were also a focus of settlement and marine resource collection.

Lands surrounding the current project area were also a site of conflict between the Hawai‘i Island chief Kalani‘ōpu‘u and Maui Island chief Kahekili and is perhaps an explanation for the origins for such place names as "Waiakoa" and "Keāhuaiwi".

Table 2. Place names documented in the vicinity of the project area from Pukui et al. (1974) unless otherwise noted

Place Name	Meaning/Translation
Alakoa	*Lit.,* “soldier’s street” (p. 9)
Kalaepohaku	*Lit.,* “the stony promontory” (p. 72–73)
Kale‘ia	*Lit.,* “the abundance”, possibly in reference to the resources available from the fishponds and offshore fishing grounds (p. 76)
Kalepolepo	*Lit.,* “the dirt” (p. 77)
Ka‘ōpala	*Lit.,* “the rubbish”; dividing line between Pūlehu Nui and Waikapū Ahupua‘a (p. 86)
Keāhuaiwi	*Lit.,* “the bone pile”; the name of a gulch immediately adjacent to and north of Waiakoa Gulch (p. 101)
Keālia	*Lit.,* “salt encrustation”; a pond near Kīhei and major salt pan location (Sterling 1998:95)
Kīhei	*Lit.,* “cape or cloak”; sandy point and boundary marker between Pūlehu Nui and Waikapu (Sterling 1998:255); commonly used place name for the South Maui area
Kīheipūko‘a	*kīhei* literally translates as “cape or cloak” and *pūko‘a* literally translates as “coral head”; Kīheipūko‘a was a place near Keālia between Kalepolepo and Ma‘alaea (Sterling 1998:257)
Kohemālamalama	*Lit.,* “bright vagina”; also the ancient name for Kaho‘olawe
Kō‘ie‘ie	*Lit.,* “a plaything for floating in the rapids”, ancient name of Kalepolepo (Sterling 1998:252)
Kolaloa	*Lit.,* “much sexual excitement”
Kula (*moku*)	*Lit.,* "plain"; always an arid region (Handy in Sterling 1998:242)
Pūlehu (gulch)	*Lit.,* “broiled”, possibly in reference to abundant sweet potato cultivation in the uplands (p. 193)
Pūlehunui (*ahupua‘a*)	*Lit.,* “large *pūlehu*”
Waiakoa	*Lit.,* “water (used) by warrior”

Other accounts involve the continuing conflict between Kahekili during the late 18th century. Following a losing battle at Kaupō in 1775, Kalani‘ōpu‘u dedicated several war *heiau* on Hawai‘i Island to aid in the defeat of Kahekili. Upon hearing this news Kahekili sent for the *kahuna* Kaleopu‘upu‘u who directed construction of the *heiau* of Kaluli and Pu‘uohala on the north side of Wailuku.

In 1776, the army of Kalani‘ōpu‘u landed at Keoneo‘o‘io, with their war canoes extending to Makena at Honua‘ula and proceeded to ravage the countryside. Kalani‘ōpu‘u landed with additional forces at Kīhepuko‘a at Kealia to Kapa‘ahu, 800 strong and eager to drink the waters of Wailuku:

> Across the plains of Pu‘u‘ainako (Can-trash-hill) and Kama‘oma‘o shone the feather cloaks of the soldiers … Ka-hekili was at Kalanihale just below Kihahale and above the plateau of Ka‘ilipoe at Pohakuaokahi … Kaleopu‘upu‘u [said] to Ka-hekili, “The fish have entered the sluice; draw in the net.” [Kamakau 1961:85]

The forces of Kahekili descended upon and destroyed the soldiers of Kalani‘ōpu‘u, slaying the Alapa (elite soldiers of Kalani‘ōpu‘u) on the sandhills at the southeast of Kalua. Only two men escaped to Kīheipuko‘a to tell Kalani‘ōpu‘u the news of their defeat. After a second day of warfare Kalani‘ōpu‘u sued for peace and was granted such by Kahekili and his messengers at Kīheipuko‘a (Kamakau 1961:88–89).

Furthermore, Kamakau recounts:

> The great battle took place between Waikapu and Wailuku. Ka-lani-‘opu‘u expected to enter Wailuku at Kakanilua, but Ka-hekili‘s men rose at dawn and occupied the sandhills of Kama‘oma‘o, and a portion of them took their stand on the side toward Waikapu turn, so that the forces of Ka-lani-‘opu‘u, who had supposed that the battle would be at Kakanilua, found a divided front from which spears, javelins, and other missiles poured like water. Death-dealing weapons poured down like a swift rainstorm beating the sides of the fisherman‘s canoe and agitating the surface of the sea like a cloudburst over the deep ocean. The terrified soldiers were surrounded and took to flight; they were driven by Ka-hekili‘s men like leaves before a whirlwind. The plains of Kama‘oma‘o became like a fishpond through whose sluice gate the sea flooded, Ka-lani-‘opu‘u‘s men [became] like the mullet driven by the sound of beating into the sluice gate of ‘Uko‘a; and the sea rose up to the walls. Like the fiery petals of the lehua blossoms of Pi‘iholo were the soldiers of Ka-hekili, red among the leaves of the *koa* trees of Liliko‘i or as one glimpses them through the *kukui* trees of Ha‘iku. Like the creeping branches of the *‘ulei,* so moved the cloaked warriors, young and middle-aged, over the *‘ilima*-covered plain of Paholei. A chill seized Ka-lani-‘opu‘u as he crouched in the canoe, mourning the dead who lay like fish stupefied by the poison spread by the great fisherman, Ka-hekili. Like grasshoppers on the plain, easily to be caught by women, so they lay in the heat of the sun snuggled close to the blossoms of the grasses. [Kamakau 1992:87]

Kalani‘ōpu‘u’s army was annihilated in what was called *Ahulau Ka Pi‘ipi‘i i Kakanilua* or Slaughter-of-the-Pi‘ipi‘i-at-Kakanilua (Kamakau 1992:86), one of the most legendary battles of pre-contact Hawai‘i.

Ms. Hōkūlani Holt Padilla, Director of *Ka Hikina O Ka Lā* at University of Hawai’i Maui College, has discussed the coastal region of Pūlehu Nui as the region referred to in Kamakau’s “Ruling Chiefs of Hawaii” as Kiheipuko‘a. She elaborated on these references to Kiheipuko‘a as a portion of the route used by the forces of Kalani‘ōpu‘u about 1776, during his planned conquest of Maui. She explained that the ruling chief of the Big Island, Kalani‘ōpu‘u, landed his army along the coastline of Maui, at Kiheipuko‘a in the Keālia area, with his war canoes visible from Kapa‘ahu (in Puna, on the island of Hawai‘i), and maneuvered his army inland across the central isthmus, possibly close to the present project area. In this way, the army of Kalani‘opu‘u crossed over the areas of Kama‘oma‘o and Pu‘u ‘ainako to engage Kahekili’s forces on the sand hills of Kalua, ending in a slaughter of the Big Island army known as “Ahulau ka Pi‘ipi‘i i Kakanilua” (Hokulani Holt Padilla, in Hill et al. 2007).

According to Ms. Holt-Padilla, the outcome of the battle for Kakanilua was not decided on the first day. The day following the “Slaughter of the Pi‘ipi‘i at Kakanilua”, the remaining forces of Kalani‘ōpu‘u were again sent to battle Kahekili’s forces, which were expected to be in Wailuku. The Big Island army was ambushed at an area close to Waikapū, and was destroyed by the army of Kahekili on the plains of Kama‘oma‘o.

Ms. Holt-Padilla explained that the central isthmus was a dry, hot place with trails leading west toward Waikapū, and east along the Kīhei coastline. She stated that the guardian spirits of men, the *‘aumakua* spirits, were known to wander on the lower, sandy plains of Waikapū. She explained that this place was a special place for the souls of the soldiers killed at Kakanilua.

Coastal Pūlehunui also shows a few vestiges of the lifestyles and subsistence activities of the *maka‘āinana* that lived there as well as the works of powerful *ali‘i*. Keālia Pond has been known as a source of high-quality salt from the pans in its immediate vicinity. In *Ancient Sites of Maui, Moloka‘i, and Lana‘i,* author Van James (2002:71) states, in reference to Keālia Pond:

> It is also the name and site of a former fishpond. Little is known about the ancient history of Keālia fishpond, but judging from its size, it must have been an important producer of fish stock, particularly *awa* (milkfish) and *‘ama‘ama* (mullet). Ditches and sluice gates were built at least 400 years ago to let these and other nearshore fish into the pond. A *ko‘a* (fishing shrine) or possible *heiau* platform stands near the site. [James 2002:71]

Given its location on the leeward shores of the central isthmus of Maui, and its regular access to the freshwater runoff emanating from Waikapū Stream to the north and Kolaloa Gulch to the southeast, the area had access to many resources (salt, fish, irrigation, etc.) valued and utilized by the population. This wetland environment also attracts many species of waterfowl in the winter months when water levels in the pond rise with seasonal flooding. These would have also served as a potential source of nourishment for subsistence communities in the region (James 2002:72).

Further testament of resource gathering in the area comes from neighboring Kō‘ie‘ie Fishpond (Figure 6) which can still be seen along the Kīhei coastline.



Figure 6. Ko‘ie‘ie Fishpond as viewed from the shore, near former site of Kalepolepo (James 2002:73)

This fishpond was once part of a broader distribution of these types of structures along the coast. To this effect James (2002:73-74) states:

> In ancient times at least three or four *kuapā* (walled) fishponds were built along the Kīhei ("cloak") coastline. With the exception of Ko‘ie‘ie pond, the names of the other ponds have been lost, and little is known about any of their histories. In such cases it was said that *Menehune* constructed them.
>
> It [Kō‘ie‘ie] is a small pond of three arces. At low tide, another fishpond ruin can be seen just south of Kō‘ie‘ie Fishpond, and still further south along the coast is yet another nameless ancient pond wall. [James 2002:73-74]

The associations of these fish ponds to the *menehune* (legendary race of small people who worked at night, building fish ponds, roads, temples), placing their times of construction in deep antiquity, suggest that this site may have been in use in very early times. What is known regarding the fishponds here is that they had been rebuilt several times prior to, and during the first days of, Western contact. To this effect James (2002:73–74) documents that:

> It is here at Kalepolepo that Kamehameha I is said to have beached his canoes for battle against Central Maui. The beaches were black with his fleet, and the Waikapū Stream that empties into nearby Keālia Pond was declared *kapu.* Later, Kamehameha, who noticed Kō‘ie‘ie to be in disrepair, had the fishpond rebuilt. It is recorded that chief ‘Umilīloa, in the mid-1500s, also had the pond walls rebuilt. [James 2002:73–74]

Given its history of rehabilitation from conquering Hawai‘i Island chiefs, it is believed that the fishpond at Kō‘ie‘ie was "a royal pond always stocked with the best fish" (James 2002:74). Further associations between Hawaiian royalty and Kō‘ie‘ie Fishpond are also exemplified by a story from the early historic period when Kihawahine, the family *‘aumakua* of the Kamehameha line of chiefs, appeared at Kō‘ie‘ie Fishpond in saffron-yellow robes following the death of one of Kamehameha's sons at Kalepolepo in 1815 (James 2002:74).

4.1.1 The Attack at Pu‘u Nēnē

First printed in *Ka Nupepa Ku‘oko‘a* in 1866, the following account by Kamakau tells of the battle at Pu‘u Nēnē between Peleioholani and the men of Alapa‘i, led by Kalani‘ōpu‘u and Keoua. At this point, both sides suffered great losses and thus they agreed to end the war and bloodshed. Perhaps another great factor in reconciling was that Kalani‘ōpu‘u and Keoua were the actual sons of Peleioholani (Kamakau 1992:75).

> I ka hoouka kaua nui loa, oia ka la i hoouka ai ma Puunene, mamua o Napili me Honokahua ma Kaanapali. Ua hoopuni ia o Peleiholani a puni ma ke kai mai, a mauka mai hoi, a ua puni na aoao ia Alapai me kona mau alii, me Kalaniopuu me Keoua a me ko lakou mau koa. Ilaila i halawai hou ai na na maka o Alapai me Peleioholani - E hoopau i ke kaua, a e hui aloha hou, no ka mea, ua nui ka poe i make o na aoao elua. (Aole anei oia maoli ke ano o ke kaua Kristiano; ua kaua paha ma ke ano makamaka me ke aloha - pela no ke ano aloha Hawaii i ka manawa kahiko.)
>
> Eia paha kekahi kumu nui o keia mau ike aloha ana o ka Moi o Oahu me ka

Moi o Hawaii, no ka mea, no Oahu ka makuahine o Alapai, oia hoi o Kalanikauleleiaiwi Nui, ke kaikamahine a Kaneikauaiwilani, ke keiki a Kauakahikuaanauakana, ke kaikamahine a Kaihikapuakuihewa. Nolaila, ua pili mau hoahanau, a mau kaikaina na'lii o Hawaii no Peleioholani. Eia paha kekahi kumu; he mau keiki ponoi o Kalaniopuu me Keoua na Peleioholani, na laua o Kamakaimoku.

O ka wai o Alele, mauka iho o Waipahu, i Waikele, ma Ewa, kahi i loaa ai o Kalaniopuu ia Peleioholani. I ka manawa e noho Moi ana no o Kualii no Oahu. Ua holo mai o Kamakaimoku i ka makuahine ia Umiulaikaahumanu e noho ana ma Waikele, a me kona mau kaikunane. O ka lei Alii o ko Oahu mau Alii Moi, oia ka niho o ke kohola i anai ia me ka opuu niho kohola, oia hoi ka lei palaoa Alii o ko Oahu poe Alii. O ko Hawaii lei palaoa Alii, ua hana ia me ke lelo; me he makau ea la. Ua kapa aku o Peleioholani i ka inoa o kana keiki, o ka lei Alii o kona makuakane o Kualii. O Kaleiopuu, pela no hoi o Keoua, (aia paha i ka hiki i ka noho aupuni ana.)

I ka pau ana o ka haua kuikahi e hoopau i ke kaua, hoi mai la o Peleioholani me kana kakaolelo o Naili, me kona mau Alii, a me kona mau koa, ma Koolau o Molokai. Nolaila i olelo kaena iho ai ka poe kakaolelo o Hawaii, me ko Maui. "O Peleioholani, ke keiki a Ku, o Hana. O ka pua a keia Alii kipi i make ai, (oia no o W. P. Kinau opio.) I ka pau ana o ke kaua, ua noho ae o Kamehameha Nui i ka noho Alii Moi o Maui, me ka maluhia o ke aupuni, i ko Alapai noho ana aupuni ma Hawaii. A ike iho la o Alapai, ka Moi o Hawaii, ua maluhia ka noho ana aupuni o kana Alii o Kamehameha nui, i ka noho Moi o ke aupuni o Maui, hoi aku la o Alapai i kona aupuni i Hawaii.

Translation:

The hardest fighting, even compared with that at Napili and at Honokahua in Ka‘anapali, took place on the day of the attack at Pu‘unene. Pele-io-holani was surrounded on all sides, *mauka* and *makai,* by the forces of Alapa‘i, led by Ka-lani-‘opu‘u and Keoua. The two ruling chiefs met there again, face to face, to end the war and became friends again, so great had been the slaughter on both sides...

Perhaps the reason for this friendliness on the part of the two chiefs was the close relationship that existed between them. Alapa‘i‘s mother belonged to Oahu. She was Ka-lani-kau-lele-ia-iwi-nui, a dughter of Kane-i-ka-ua-iwi-lani, who was the child of Ka-ua-kahi-a-kua‘ana-au-a-kane, the daughter of Ka-‘ihi-kapu-a-Ku‘ihewa. Moreover Ka-lani-‘opu‘u and Keoua were own sons of Pele-io-holani through their mother Ka-maka‘i-moku. While Kuali‘i was still ruling Oahu, she had come to visit her mother ‘Umi-‘ula-i-ka-‘ahu-manu, who was living at Waikele with her younger brothers, and it was at the water of Alele just above Waipahu in Waikele, ‘Ewa, that Ka-lani-‘opu‘u was begotten by Pele-io-holani. The ruling chiefs of Oahu wore as a neck ornament an ivory whale‘s tooth shaped like a bud (‘opu‘u); the royal neck ornament of Hawaii was a tongue-shaped hook, like a tortoise-shell fishhook. Pele-io-holani named the child Ka-lei-‘opu‘u after the bud-shaped neck ornament of his father Kuali‘i. Thus he begot Ka-lei-‘opu‘u Keoua he probably begot after he became ruling chief.

> At the end of the war Kamehameha-nui became ruking chief of Maui. Pele-io-holani retired to Ko‘olau on Molokai with his adviser Na-‘ili and his chiefs and fighting men. The counselors of both Hawaii and Maui boasted, “Pele-io-holani, the son of Ku, belongs to Hana!” [has done his work well] W.P. Kina‘u the younger, who died recently, was a descendant of the rebel chief. Kamehameha-nui ruled Maui in peace and Alapa‘i held the rule over Hawaii, to which he returned after affairs had quieted down on Maui. He had no occasion to renew the war on Maui as in the time of Ke-kau-like, the father of Kamehameha-nui, who was an ambitious chief, a lover of war and greedy for rule over Hawaii. [Kamakau 1992:74-75]

4.2 Early Historic Period

By early 1786, Kahekili had defeated the forces of O‘ahu, and consolidated his control over all of the islands except Hawai‘i. However, in 1790, the defining battle establishing Kamehameha I’s supremacy over the army defending Maui began at Pu‘unēnē. Crossing the channel from the island of Hawai‘i with his war fleet, Kamehameha I overwhelmed the Maui forces in Hāna en route to engaging the main island defense force gathered along Maui’s northern coastline. Kamehameha I assembled his invasion forces at Kahului. With Kahekili on O‘ahu, the defense of Maui fell to his son, Kalanikupule. The Maui forces were swept across the isthmus and destroyed at ‘Īao Valley, above Wailuku. The high chiefs and royalty of Maui fled to other islands, and Kamehameha I went on to defeat the combined forces of Kahekili and Kalanikupule at Nu‘uanu, on O‘ahu in 1795.

Estimates of the early 19th century population of Wailuku are difficult to find. In regions where Protestant missionaries had been stationed, statistical records are plentiful, but the missionary out-station region of Kahului appeared to have received scant attention during the 1820’s. In 1830, Protestant missionaries recorded school attendance figures for the out-stations of Wailuku as: 612 students in Waihu [Waihe‘e], 329 students in Waikepu [Waikapū], and 103 students in Waiehu, with no mention of Kahului (Richards 1830). The use of the northern coastline landing at Kahului by early Europeans must have been difficult, for far more records exist of early explorers and merchant ships at anchor off the southern, more protected coastline of Maui than along the exposed, northern coast.

James Jarves (1844), the first editor of The Polynesian, the third English-language newspaper in the Hawaiian Islands, included news about events in Kahului. He noted a “remarkable oscillation of the ocean” that occurred at Kahului on November 7, 1837:

> At Maui, the sea retired about 20 fathoms, and returned with great speed, in one immense wave, which swept before it houses, trees, canoes, and all else exposed to its fury. At the village of Kahului, the inhabitants, as at Honolulu, followed with rapturous delight the retreating wave, when suddenly it turned upon them, rising like a steep wall, rushed forward to the shore, burying the natives in its foam, and destroying the whole hamlet. [Jarves 1844:19-20]

During the early and middle 1800s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease and nucleation around the developing port towns. The traditionally Hawaiian population was largely dispersed and although there were royal centers and areas of more concentrated population, these areas never came close to rivaling the populations of the historic port towns that developed on Hawai‘i‘s shorelines during the 1800s.

In this regard, Kuykendall (1938:313) notes that in the period from 1830 to 1854:

> The commercial development during this period, by magnifying the importance of a few ports, gave momentum and direction to a townward drift of population; the population of the kingdom as a whole was steadily going down, but the population of Honolulu, Lahaina and Hilo was growing.[Kuykendall 1938:313]

Kuykendall's observation likely captures the demographic pattern at the Kalepolepo entrepot, a hub of early historic activity for Kīhei and eventually all of Kula Moku (Kolb et al. 1997:69). The development of Kalepolepo as an entrepot and a focus of Christian life in the 1840s and 1850s most likely increased the population in the immediate vicinity above the pre-Contact population figures, contrary to the island-wide trend of depopulation. That the population and areal extent of the Kalepolepo community reached its zenith during the mid-1800s, appears to be supported by Kolb et al. (1997:68):

> The ancient village of Kalepolepo was relatively small, and was built around an economy primarily based upon the exploitation of ocean resources--primarily the excellent fishing grounds as well as three large fishponds. However, as the number of visiting ships increased, Kalepolepo soon became an important provisioning area. By 1850 we know that the economic opportunities were attracting a number of European entrepreneurs. [Kolb et al. 1997:68]

In 1820, the whaling industry was introduced in Hawai‘i. Although the whaling trade centered on Lāhainā, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that "From the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei]." The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs and in particular the long-lasting Irish potato.

After 1830, dryland agriculture in the old Kula District expanded with a focus on Irish potato cultivation. The California Gold Rush of 1849 further intensified the demand as a California-Hawai‘i potato trade began to flourish. Kula became the area of highest potato production and was known as "the potato district" (the area between 2000 and 5000 ft elevation). During this time, sugar cultivation and ranching were established in the Kula region. According to Helen Wong Smith, sugar was present prior to 1846, with six sugar producers operating on the slopes of Haleakalā, and ranching occurred in the area prior to the 1840s (Brown and Haun 1989:C-7 and C-6). Much of the produce, sugar, and livestock moved down the Kalepolepo and Kekuawaha‘ula‘ula Trails to the landing at Kalepolepo, just south of the project area. (Donham 1992:5) notes that the inundation of land clearing and cultivation associated with the Gold Rush resulted in "deforestation [which] adversely affect[ed] the amount of rainfall in the district, and periods of drought became more common."

David Malo created a balance for the boisterous whaling crowd by constructing the Kilolani Church at Kalepolepo around 1852. Potato production thrived in Kula from 1830-1850 until successful potato cultivation and production in California and Oregon resulted in a decline in the Hawai‘i trade (Burgett and Spear 1995:6-7).

4.3 Mid to Late 1800s

4.3.1 The Māhele and the Kuleana Act

The most significant change in land-use patterns and allocation came with the Māhele of 1848 and the privatization of land in Hawai‘i. This action hastened the shift of the Hawaiian economy from that of a subsistence-based economy to that of a market-based economy. During the Māhele, all of the lands in the Kingdom of Hawai‘i were divided between *mō‘ī* (king), *ali‘i*, *konohiki* (overseer of an *ahupua‘a*), and *maka‘āinana* and passed into the Western land tenure model of private ownership. On 8 March 1848, Kauikeaouli (Kamehameha III) further divided his personal holdings into lands he would retain as private holdings and parcels he would give to the government. This act paved the way for government land sales to foreigners, and in 1850 the legislature granted resident aliens the right to acquire fee simple land rights (Moffat and Fitzpatrick 1995:41–51).

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay in cash an amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent was issued that gave full title of ownership to the tenant. But by 1850, the government of Hawai‘i was offering land for sale to both Native Hawaiians and foreigners. Such lands were referred to as Royal Patent Grants or as Grants.

A total of 13 land commission claims were made in Pūlehunui, and nine were awarded (LCAs 0327B, 9671, 9019, 4672, 9672, 9673, 8866, 4567, and 5230). Only one of these awards, LCA 5230, is immediately surrounding and inclusive of the current project area (Figure 7 and Figure 8). Supporting testimony given to the land commissioners indicate that the 1668.78 acres of LCA 5230 were awarded to Keaweamahi by the King in 1843 and never disputed. The testimony given by Kaauwai and Kaiakekaua additionally maintained that there were a great many natives that lived within the *ahupua‘a* of Pūlehunui. The majority of the lands awarded were *kula* (pasture) used for potato (both sweet potato and Irish potato) cultivation and were primarily located along the upper elevations of Kula Moku (Waihona ‘Aina 2000).

In 1879, following the initial division of lands during the Māhele, the western boundary of Pūlehunui was disputed by the owners of adjacent lands in Waikapū. The western boundary of Pūlehunui that was specified by the Commissioner of Boundaries and surveyed included approximately 2,000 feet along the coastline from a sand spit known as Kīhei to a point of rocks called Kalaepōhaku. The eastern boundary line that was being claimed for Waikapū, however, would cut Pūlehunui off from the ocean, this being the more specific issue in the boundary dispute. Testimony was given by *kama‘āina* (Native Hawaiian residents) of Pūlehunui and/or lands next to it regarding their familiarity with the boundaries of Pūlehunui Ahupua‘a. All witnesses, with the exception of one, consistently stated the line between Pūlehunui and ‘Ōma‘opio was along a ravine or *kahawai*. The line carried along this *kahawai* and continued to follow the same natural boundary to Ka‘opala at the bottom of the East Maui slope. Ka‘opala meets the bottom of the West Maui slope and creates a depression and this is where the boundary turns Mid- to course, following the natural depression or shallow *kahawai* to the sea. The court agreed that the boundary likely followed this natural line and concurred with the findings of the Commissioner of Boundaries. As

a result, the original 2,000 feet of coastline from Kīhei to Kalaepohaku that was attributed to Pūlehunui Ahupua‘a was upheld (McCully J Court Opinion, in Sterling 1998:254–257).

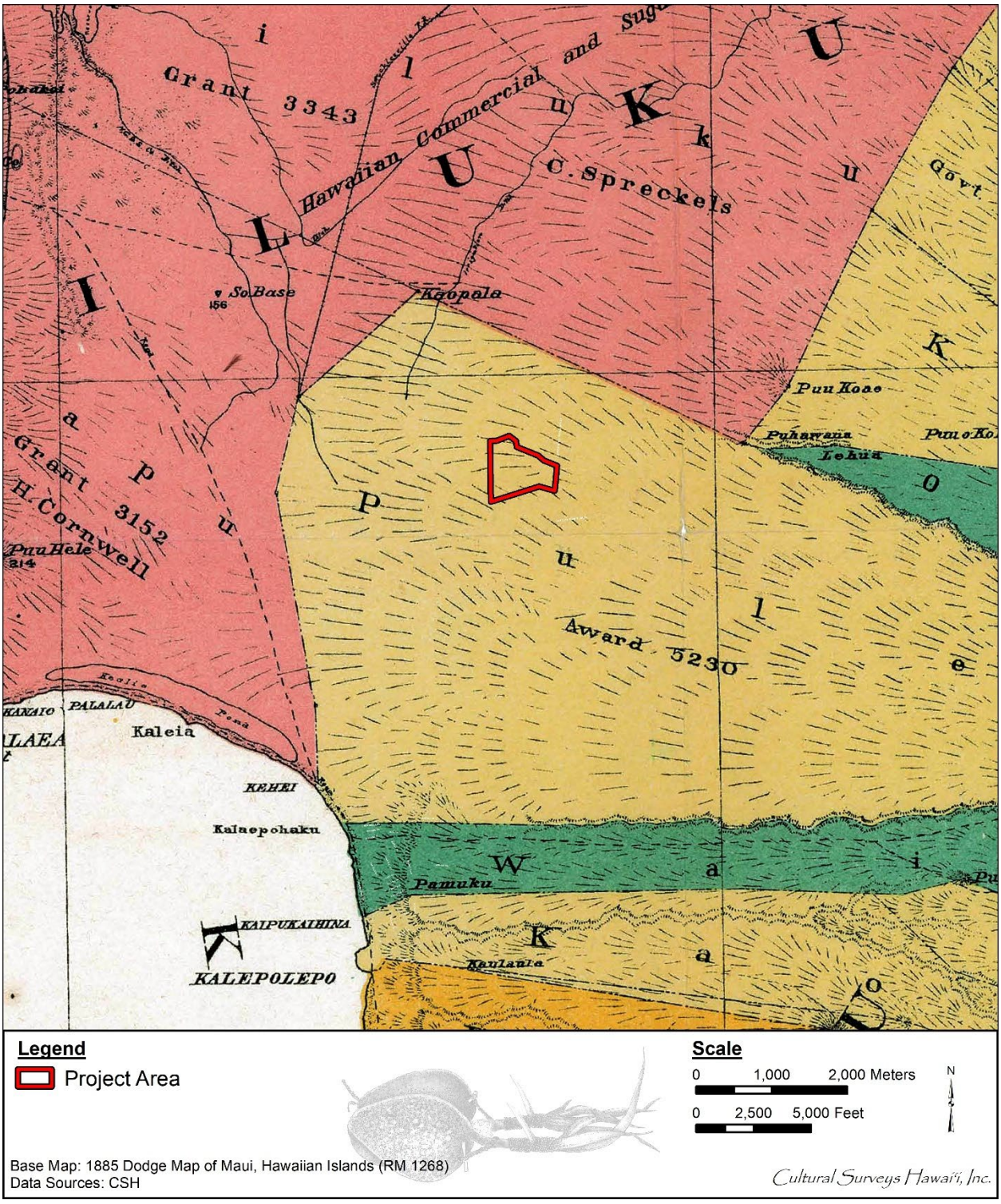


Figure 7. Portion of the Dodge (1885) map of Maui (RM 1268) showing the location of the project area within Award 5230

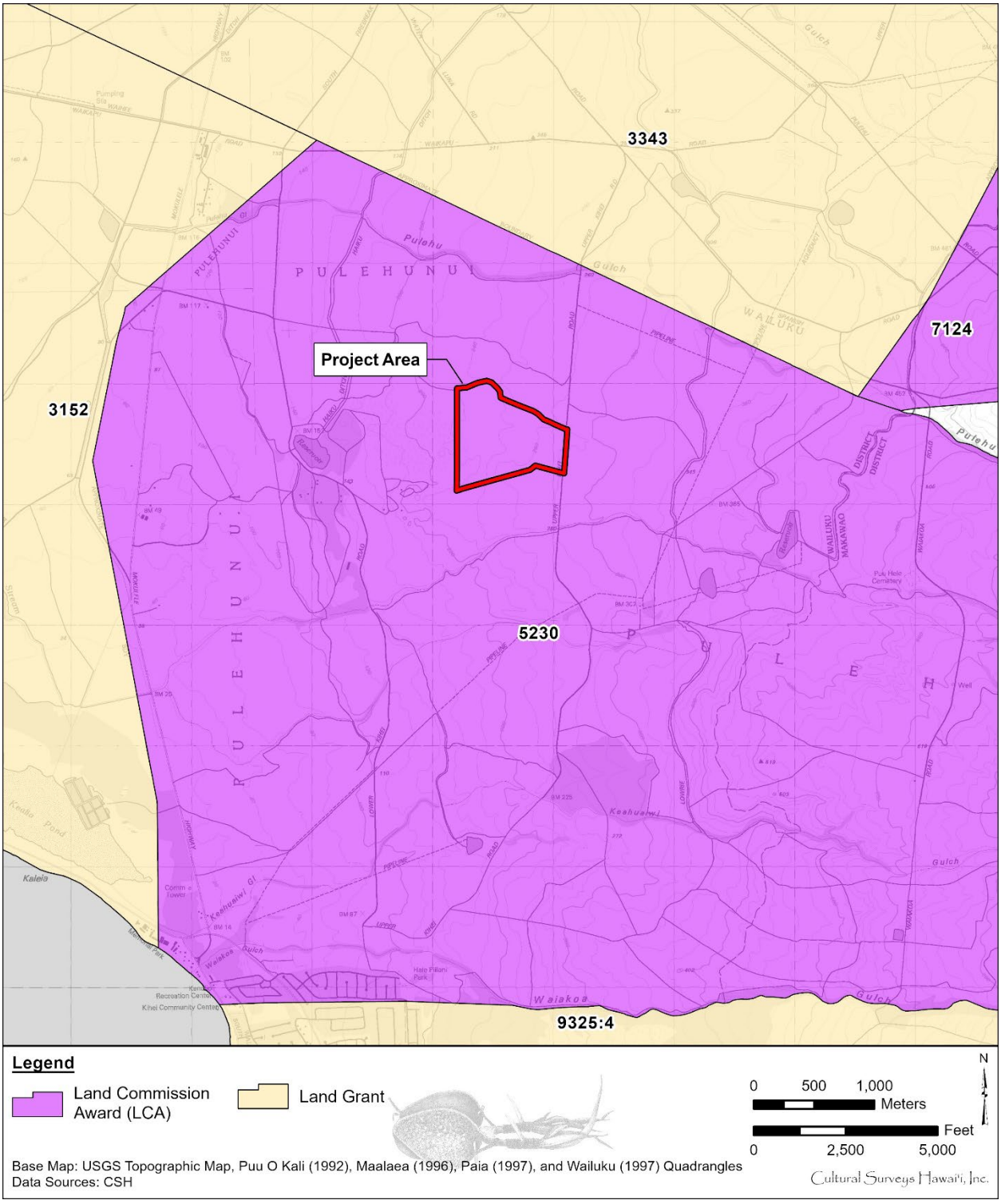


Figure 8. USGS topographic quadrangle map with an overlay of Land Commission Awards and Land Grants recorded in the vicinity of the project area (U.S. Geological Survey 1992, 1996, 1997a, 1997b)

4.4 Late 1800s to Early 1900s

4.4.1 The Sugar Industry

A common crop on nearly all major Hawaiian Islands was sugar cane. Among the early government grants in the upland area of Wailuku Ahupua‘a were lands set aside for the Wailuku Sugar Company, a plantation first organized in 1862 by James Robinson & Company, Thomas Cummins, J. Fuller, and agent C. Brewer & Company. The success of sugar grown in the region resulted in a second large plantation, in Waihe‘e, producing over 757 tons of sugar and 45,000 gallons of molasses in 1865. The Waihe‘e mill manager was Samuel T. Alexander, and the mill’s head foreman was Henry P. Baldwin, both of whom would resign in the late 1860’s to establish a small sugar enterprise of their own in upper Pā‘ia (Gilmore 1936).

In 1869, on land located just west of Pā‘ia, a small kuleana of 11.94 acres was purchased by S.T. Alexander and his business partner, H.P. Baldwin, both descended from Lāhainā missionary families, who were eager to apply their agricultural experience to their own plantation. This initial land purchase was the beginning of the development of the entire central isthmus for sugar cultivation. In rapid succession, Alexander & Baldwin expanded its operations by purchasing other small kuleanas, setting up a mill, and attracting more investment capital (Dean 1950).

In 1876, a treaty was signed between the Kingdom of Hawai‘i and the United States, which opened larger and more lucrative markets for Hawaiian sugar. Plans were immediately drawn up by Alexander & Baldwin to finance a ditch to bring water from the Hāna region of East Maui to the arid plains of Pā‘ia. The Kingdom of Hawai‘i issued a lease for the construction right-of-way, and in 1879, the successful venture delivered millions of gallons of water to the Pā‘ia region via the Hamakua Ditch (Wilcox 1996).

Competition was supplied by Claus Spreckels who engineered a similar irrigation ditch from Honomanū in East Maui to lands located just inland of Kahului, where the Spreckelsville mill and plantation camp were built. Spreckels invested three million dollars in the Hawaiian Commercial & Sugar Company, and competed for sugar lands, wharf and warehouse space, railway lines, and shipping schedules with Alexander & Baldwin (Dorrance 2000).

In 1882, Spreckels, following his success in building the Honomanu Ditch linking East Maui water sources with his sugar fields in the central isthmus, further capitalized on that success to engineer the Waihe‘e Ditch [also named the Spreckels Ditch] in West Maui. The 15-mile-long ditch started at the 435 foot elevation of Waihe‘e Stream, and carried 60 million gallons of water (per 24-hour day) to the Wai‘ale Reservoir at the 214 foot elevation of Wailuku. Spreckels became the first plantation owner to irrigate his fields by water from both Haleakalā and the West Maui mountains (Wilcox 1996). By 1888, the Spreckels plantation covered 28,000 acres, making it the largest sugar plantation in the world (Meriwether 1888). Financial pressures forced Spreckels to give up control of HC&S to Alexander & Baldwin in 1898 after a long and fierce battle (Dean 1950).

4.4.2 Kihei Plantation Company

The Kihei Plantation Company, Ltd. (KPC) was organized late in 1898 with a capitalization of 60,000 shares at $50 par value. Water was the most critical component in the decision to locate sugar cultivation along the leeward shores of Maui’s arid coastline. The discovery of an ample

supply of irrigation water early in 1898 led to the drilling of a large, successful well, but the supply of water was limited (Stearns 1942). Over the next four years, two ditches were developed to supplement the water needs of the 4,873 acres of sugar under cultivation at Kīhei (Gilmore 1936).

The history of the Kihei Plantation Company begins with the annexation of the Hawaiian Islands by the United States in 1898. With annexation came political stability for Hawai‘i. Worldwide sugar prices were rising due to the outbreak of war between the United States and Spain over her colonies in Cuba, Puerto Rico and the Philippines. Henry P. Baldwin, of the Maui plantation of HC&S, entered into a partnership with O‘ahu businessman Benjamin F. Dillingham to convert Lorrin A. Thurston’s landholdings in Kīhei into a sugar enterprise.

Up to that time, sugar cultivation within the central isthmus of Maui was centered around the main towns of Wailuku and Kahului. Water tunneled from springs in the West Maui Mountains flowed through ditches in Wailuku to irrigate fields as far away as Mā‘alaea. Water from the windward rain belt of Kailua ran through a network of ditches from East Maui to Pā‘ia, to irrigate fields in Pu‘unēnē.

A well-drilling company from Honolulu, The McCandless Brothers, drilled a successful Maui-Type well (U.S.Geological Survey Well 14 / Hawaiian Commercial & Sugar Well K1) in 1899. It was located just inland from the coast in North Kīhei, between Keālia Pond and the Waiakoa Homestead Lands. This well was drilled vertically to approximately 60 feet through the Honomanū basalts, and tunneled laterally over 1,500 feet in order to skim 10 million gallons of fresh irrigation water per day from sources beneath the Kīhei plains (McCandless 1936).

The Kihei Plantation Company had the McCandless Brothers drill two or three additional Maui-Type wells on the north side of reservoir K2 at the discharge end of the existing pipeline of Well 14. The plantation in Kīhei failed in 1908 before the well site was able to be developed. It would have been named the HC&S K2 well, and would have included a large pumping station (Stearns 1942).

The plantation company in Kīhei built bridges to span streams and gulches flowing through the company fields. The plantation had planned the construction of a mill in North Kīhei, and ordered a plant to be built. It was decided that the new HC&S mill under construction at Pu‘unēnē would have more than enough capacity to mill all the cane from the Kīhei fields. The order for the mill was transferred to the ‘Ōla‘a Sugar Company in Hawai‘i, in exchange for a supply of steel rails for new railway requirements at Pu‘unēnē. A large scale Kona storm hit the plantation on November 15th, 1900, and caused immense damage to both Kīhei and the HC&S fields in Pu‘unēnē (Dean 1950). Bridges were knocked out, buildings were flattened, and washouts filled irrigation ditches with silt. Repairs were effected immediately, with the new HC&S mill at Pu‘unēnē commencing operations January 29, 1902.

4.4.3 Railway Operations

The KPC planned to construct a railway to move their cane. The sugar agency of William Dimond & Company placed an order for a locomotive from the Baldwin Locomotive Works in Philadelphia. The order was placed April 1899, and the plantation locomotive “Haleakala” was built and sent on to Maui (Condé and Best 1973).

By March of 1900, the first annual report of the Kihei Sugar Company stated, “It was our intention to complete the main [rail]road only as far as Camp #2, or for about 2 miles, but as the

development of Camp #3 required pushing on of the road one and a half miles further, this has been done, having been completed the 15th of February" (Condé and Best 1973:230). An additional six miles of track connected the Kīhei wharf to the various well pumping stations, and north to meet up with HC&S track (Condé and Best 1973). Establishing the railroad at Kīhei made it possible to harvest and transport over two thousand tons of sugar in a single year (Dean 1950) (Figure 9).

The laying of the railroad and the cultivation of the sugar cane in Kīhei was performed primarily by Japanese field labor; the new Maui plantation employing a small part of some 19,908 immigrants from Japan who arrived in Hawai‘i in 1899. Kīhei's plantation Camp #1 was set up inland of the Kīhei wharf and mooring pier. Two stables and a plantation store were located at Camp #1. Hospital services were provided by HC&S in Pu‘unēnē. Kihei Camp #3 was located 2 ½ miles north of Kihei Camp 1 at Kolaloa Gulch, along the North Kīhei line of the HC&S railroad (Shoemaker 1907).

The 3-foot gauge track for the Kihei Plantation Company railroad was built to the same specifications as the railway linking the HC&S mill at Spreckelsville to its fields; and to the sugar warehouses at the Kahului wharf. By 1902, with the new Pu‘unēnē mill completed, a new milling contract with HC&S provided that all cane loaded by the Kihei Plantation Company was to be ground and manufactured into sugar by HC&S.

A 1910 map of the HC&S planation in Pu‘unēnē depicts a portion of the field and rail network surrounding the project area (Figure 10). The "Upper Main R.R. Kihei" extended across Kolaloa Gulch between Increments 2 and 4 of the project area. A spur from this line extended through Increment 4 of the project area to the "K. No 4 Reservoir Ditch. Camp K-3, labeled as "Pump 3-K" is located adjacent to the project area along Makawao Road.

When the plantation was forced to close in 1908 due to diminished returns and underdeveloped water sourcing, the entirety of the company's rolling stock was absorbed by a subsidiary of HC&S. This included a Baldwin 10-ton locomotive, two large flat cars, and approximately 235 cane cars. After this merger the rolling stock of the KPC was absorbed into the larger system that connected Kahului and Kihei to plantations further east of the central isthmus. After acquiring the locomotive, the name was changed from "Haleakala" to "Hawaiian Commercial & Sugar #4," becoming renamed again in 1910 as "Kihei" (Figure 11) (Condé and Best 1973:230-231).

4.4.4 Water Source Development

The Lowrie Ditch project, named for former HC&S manager William J. Lowrie, brought an additional source of water to the Kīhei plains. His plan was to begin the ditch at the Pāpa‘a‘ea Reservoir, at the 1,000-ft elevation, and maintain a four-foot drop per mile following the ditch's initial plunge from the Kailua reservoir. Steep mountain gulches were traversed using the force of the constant weight of water flowing in a series of siphons. The Halehaku Gulch, at 250 ft deep, and the Māliko Gulch, at over 350 ft deep, were both crossed by giant siphons fabricated of three-eighths-inch iron, and set in place by Japanese laborers. At a weir located above Pā‘ia, the allocation of water began. The first tenth of the water flow in the Lowrie Ditch was divided out to the Pā‘ia Plantation (an 11/20ths share) and the Haikū Plantation (a 9/20ths share). The distance traveled, from Kailua to the plantation's Kīhei boundary, was 21.9 miles (Thrum 1900).

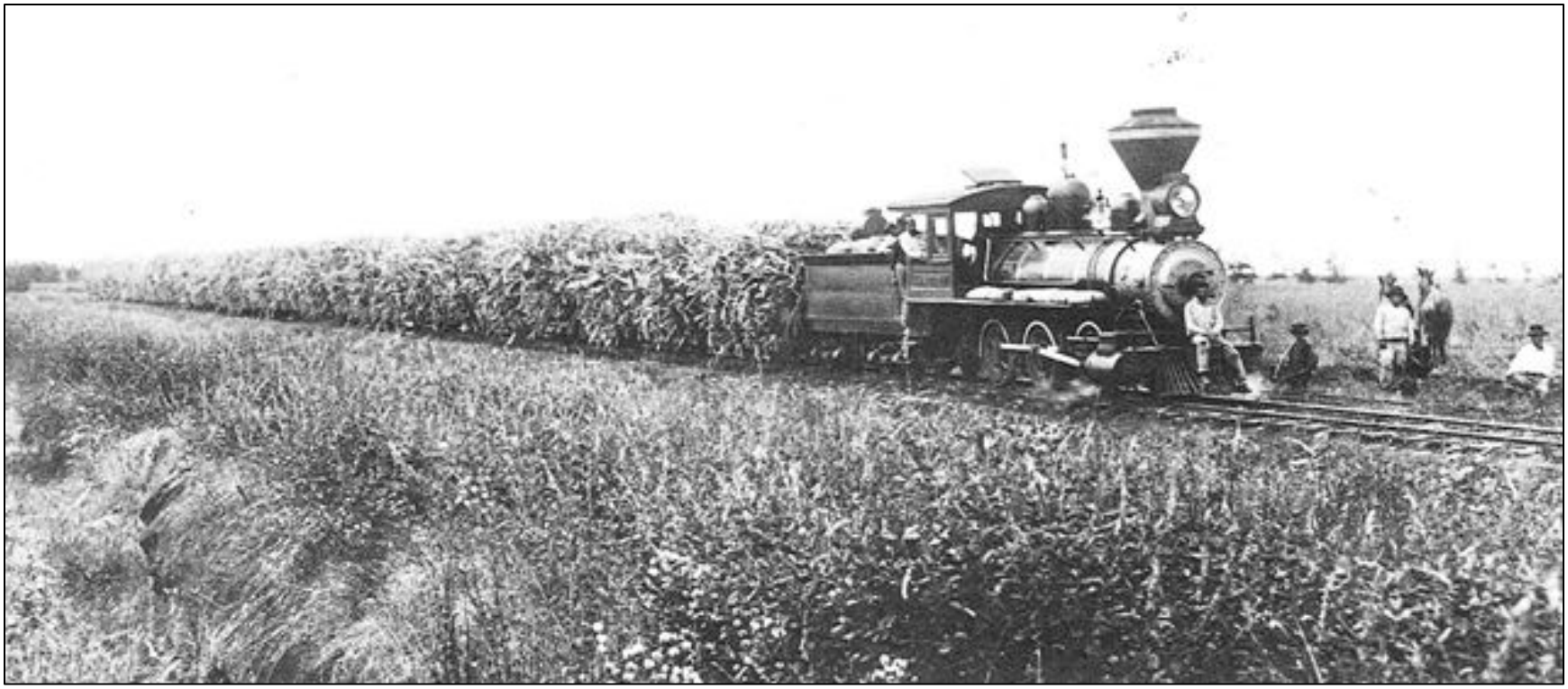


Figure 9. KPC locomotive “Haleakala” transporting cane from Kīhei fields to the mill at Pu‘unēnē, ca. 1905 (Condé and Best 1973)

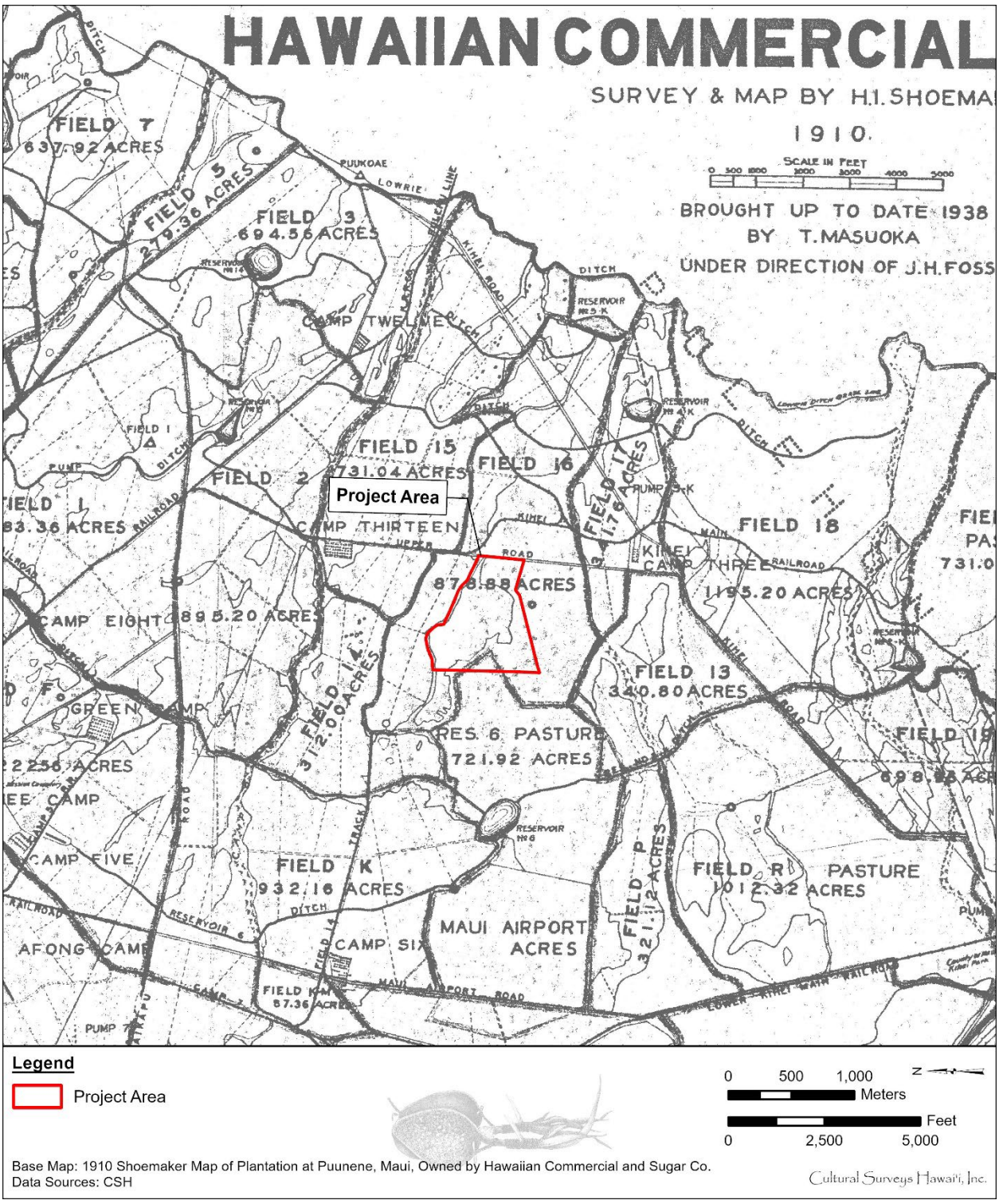


Figure 10. Portion of the Shoemaker (1910) map of the HC&S Plantation in Pu‘unēnē showing the current project area



Figure 11. KPC locomotive servicing HC&S mill as “Hawaii Commercial & Sugar No. 4” (Condé and Best 1973:231)

More water was required from wells and the East Maui watershed. The manager for the KPC, W.F. Pogue, asked the management of HC&S for an even larger allocation of water for the Kīhei lands. In 1901, Samuel T. Alexander ordered the construction of a new ditch, tapping the water sources from Nāhiku to Honomanū. It was determined that the KPC would receive 2/9ths of the capacity from the enterprise (Dean 1950) (Figure 12).

The KPC failed to live up to the expectations of its promoters with an inadequate water supply as the key difficulty. With the waters of the Ko‘olau Ditch flowing to the Kīhei fields, production appeared to have hit its peak. Although 5,609 tons of sugar was delivered in 1903, high costs required a change of managers in Kīhei, and a reduction of the HC&S milling charge to $7 per ton. The incoming HC&S manager, Frank Fowler Baldwin, determined that the best course of action was to buy out the company for $375,000 (Condé and Best 1973).

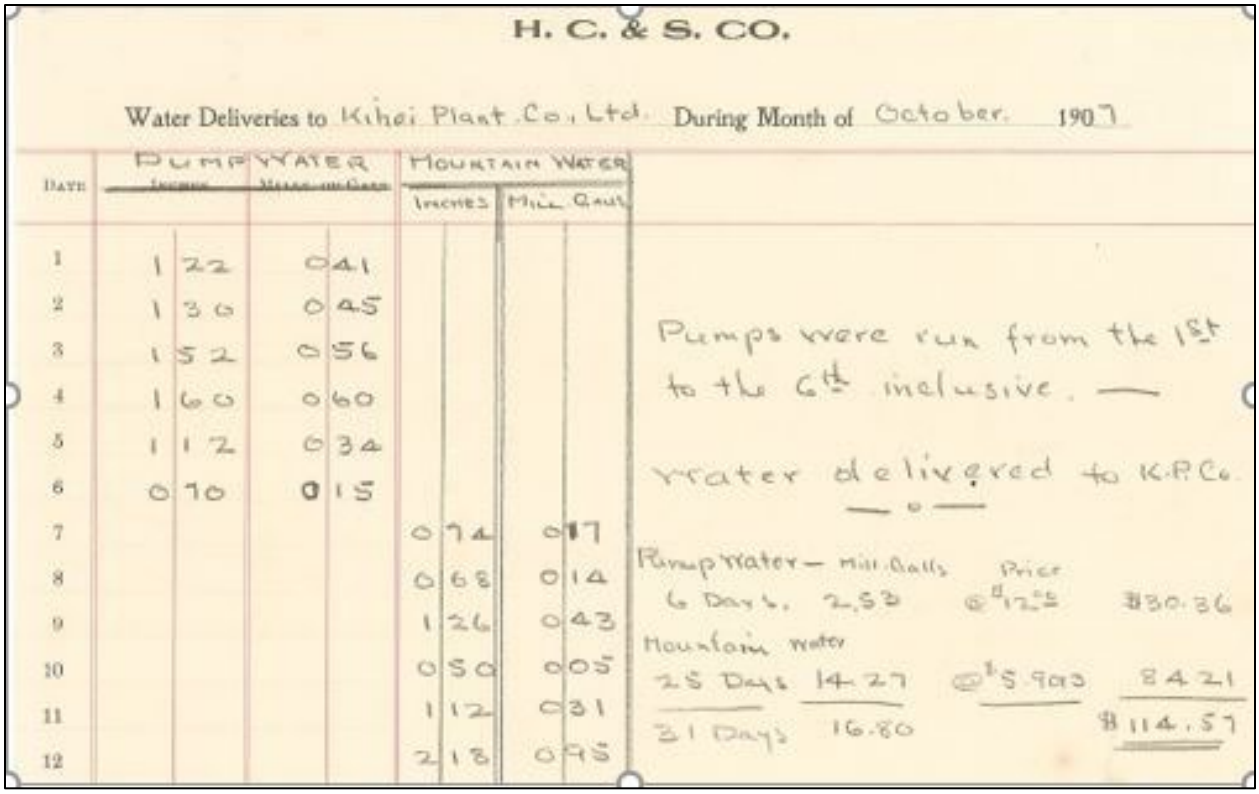
In 1908, the lands of the KPC were divided up between five new major business entities of HC&S; the Kailua Plantation Company (994 acres), the Kalialinui Plantation Company (923 acres), the Kula Plantation Company (996 acres), the Makawao Plantation Company (982 acres), and the Pulehu Plantation Company (978 acres) acquired the remaining acreage not included in the railroad right-of-way. Water rights reverted to HC&S, and were apportioned between the new plantations (Dean 1950). Sugar operations continued in North Kīhei until ca. 1968, when HC&S leased lands to a corn research farm.

4.5 Early to Mid 1900s

In 1899, HC&S was planning its new mill at Pu‘u Nēnē which processed its first cane in 1902 (Bartholomew and Bailey 1994:121). From the time it opened and for a several years after, Pu‘u Nēnē was home to the largest sugar mill in the world (Figure 13). Being the largest, at the height of its production, Pu‘u Nēnē mill covered a vast 33,000 acres. A total of 16,000 was used for sugar cane and the remaining acreage saw residential camps (Figure 14), a hospital, a grade school, a church, and recreational facilities (Figure 15) for the employees (Bartholomew and Bailey 1994:121).

The McCandless Brothers were retained by the plantation to drill 12 wells at the site. The water was to be used for the operation of the mill, as well as for irrigation. All 12 wells were successes, according to the records of the head engineer, James Sutton McCandless (1936).

In 1900, most of the port town of Kahului was burned to prevent the spread of bubonic plague. The fire jumped a canebreak and destroyed 575 acres of immature cane. The HC&S Company determined that cultivating the Pu‘unēnē plains required far more water than the original Hamakua Ditch could provide. The Lowrie Ditch project was undertaken to provide an additional source of water to the central Maui plains. The ditch was begun at the Pāpa‘a‘ea Reservoir, at 1,000 ft. elevation, and maintained a four-foot drop per mile following the ditch’s initial plunge from the Kailua reservoir. Steep mountain gulches were traversed using the force of the constant weight of water flowing in a series of siphons. The Halehaku Gulch, at 250 feet deep, and the Māliko Gulch, at over 350 feet deep, were both crossed by giant siphons fabricated of three-eighths-inch iron, and set in place by Japanese laborers. At a weir located above Pā‘ia, the allocation of water began. The first tenth of the water flow in the Lowrie Ditch was divided out to the Pā‘ia Plantation (an 11/20ths share) and the Haikū Plantation (a 9/20ths share). The distance traveled, from Kailua to the plantation’s Kīhei boundary, was 21.9 miles (Thrum 1900).



H. C. & S. CO.

Water Deliveries to Kihei Plant Co., Ltd. During Month of October. 1907

Date	Pump Water Inches	Pump Water Mill. Gals.	Mountain Water Inches	Mountain Water Mill. Gals.
1	1 22	041		
2	1 30	045		
3	1 52	056		
4	1 60	060		
5	1 12	034		
6	0 70	015		
7			0 74	017
8			0 68	014
9			1 26	043
10			0 50	005
11			1 12	031
12			2 18	095

Pumps were run from the 1st to the 6th inclusive. —

Water delivered to K.P.Co.

— o —

Pump water — mill. Gals. Price

6 Days. 2.53 @ $12.25 $30.36

Mountain water

25 Days 14.27 @ $5.903 84.21

31 Days 16.80 $114.57

Figure 12. Portion of an accounting statement for water delivered to the KPC in 1907 (CSH archives)



Figure 13. Hawaiian Commercial & Sugar Company mill (Bartholomew and Bailey 1994)



Figure 14. “Hospital Camp” at Pu‘u Nēnē (Bartholomew and Bailey (1994)

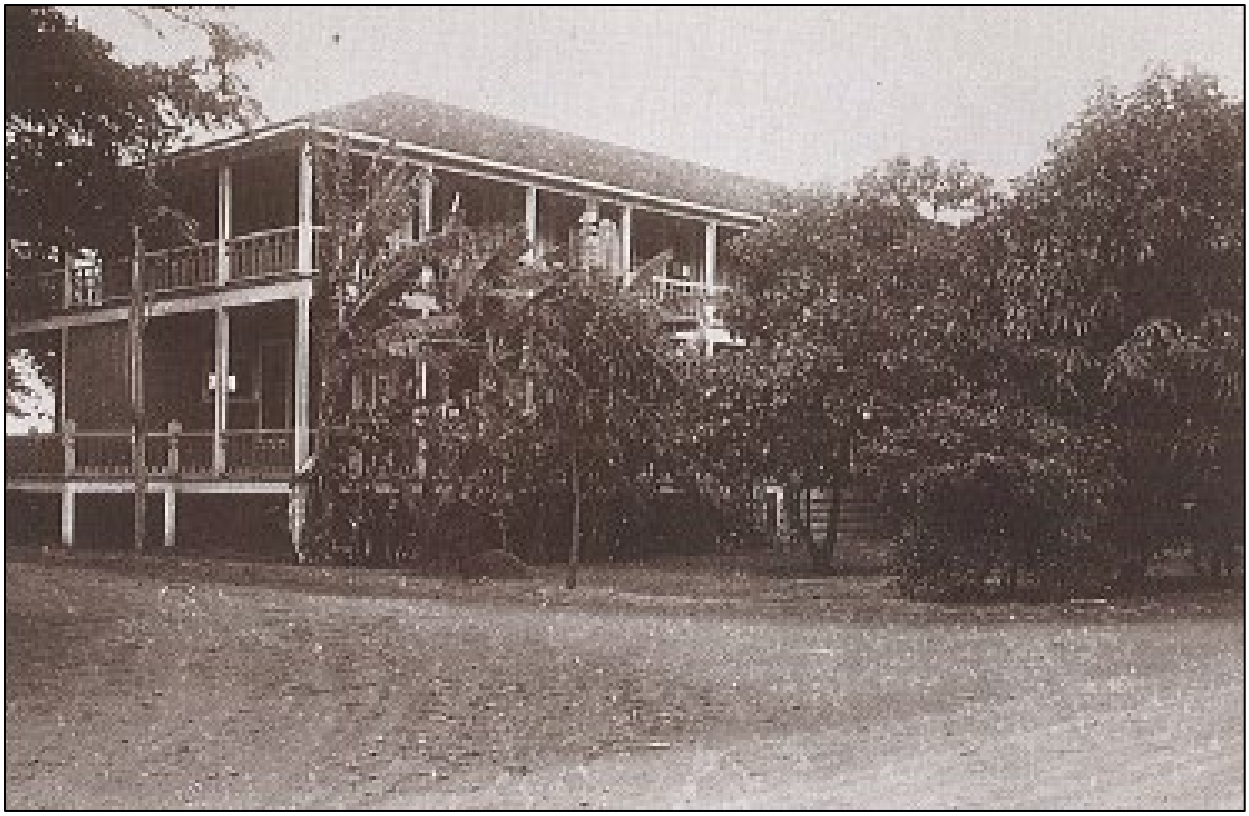


Figure 15. Pu‘u Nēnē Clubhouse. A recreational unit provided by HC&S (Bartholomew and Bailey 1994)

The Pu‘unēnē Mill was completed in 1902, supplementing the work done by the Pā‘ia Mill, which had been constructed by Alexander & Baldwin in 1880. Both mills, and the network of railroad lines connecting the company’s fields and villages, continued to grow. Between 1900 and 1905, acreage harvested doubled, from 2,484 to 4,827 acres. Tons of sugar more than doubled, from 17,857 to 39,411 and the adoption of heavier rails and a wider rail gauge caused HC&S to completely renovate the plantation railroad (Condé and Best 1973).

In 1906, an east breakwater was constructed by the Territorial Government of Hawai‘i to protect the anchorage at Kahului Harbor. The first wharf was constructed in 1910 and was followed by additional dredging and the construction of the west breakwater by the United States government. The reinforcement of both breakwaters, and the completion of Piers 1 and 2 in 1927 replaced older wharves damaged during a tidal wave in 1923.

The plantation villages of the Pu‘unēnē area grew quickly to surround the new mill. Between a huge influx of immigrant workers in 1909, and the burning of village areas of Pā‘ia and Kahului to control smallpox in 1910, changes to the camp system were in full swing. The plantation workforce continued to expand until 1917, when the United States declared war on Germany, and the accompanying draft depleted the labor pool. By 1919, postwar requirements for sugar had driven the price to $471.40 per ton: an all-time high (Burns 1991). Nine main camps were in place across the Pu‘unēnē plains by the 1920’s, including MeGerrow Camp, Yung Hee Camp, Afong Camp, Spanish B Camp, Alabama Camp, Green Camp, Camp 4, Sam Sing Camp and Camp 8.

Harold T. Stearns traversed the island of Maui between 1932 and 1942, conducting studies of the geology and ground-water resources. Between 1939 and 1940, Gordon A. MacDonald completed geologic maps for the study. Their combined work highlighted the then-recent explorations for water in Pūlehu Nui, both as a source of drinking water, and for dust control during construction of the airport (Stearns and MacDonald 1942). They reported that the isthmus of Maui “was without trees and covered with drifting sand prior to the planting of cane. Old residents report that red dust storms were nearly a daily occurrence. It seems possible that very little water existed under the Maui isthmus, prior to irrigation. If so, the annual pumpage of 45.500 million gallons [average over the 10-year period between 1928 and 1938] represents mostly return flow from the 78.271 million gallons of surface water imported for irrigation. [This measurement establishes that] recovery from wells is about 58% of surface water deliveries.”

In 1936, a schoolteacher at the Pu‘unēnē School began a competitive swimming program. Soichi Sakamoto trained promising young swimmers in the plantation ditches adjacent to the schoolyard. Although Sakamoto was a respected health and science teacher, his swimmers were not allowed to use the HC&S pool, which was reserved for plantation supervisors and their families. Sakamoto’s goal was to train his students for the 1940 Tokyo Olympics. Training was difficult, not only because Sakamoto demanded dedication from his team, but also because HC&S supervisors on horseback had been ordered to chase the swimmers out of the ditches.

In 1937, Sakamoto’s fledgling team won recognition against a team comprised of territorial champions. The harassment by the irrigation supervisors stopped, and special training hours were instituted by the plantation for the use of the supervisors’ pool. Eventually, a pool was constructed at Camp 5. In 1939, one of Sakamoto’s girls, Fujiko “Katsutani” Matsui, won the 200-meter breaststroke event at the National Amateur Athletic Union Games. Another of Sakamoto’s

swimmers, Keo Nakama, won six titles at the 1939 Australian Nationals and placed high enough to qualify for the 1940 Olympic Games.

In 1939, Pu‘u Nēnē was chosen as the primary location for the Maui Airport. As plans were put into motion, military needs turned the idea of Maui‘s airport into the Pu‘u Nēnē Naval Air Station (NAS) instead (Bartholomew and Bailey 1994:121). At the end of the war, the station was abandoned and the airport was constructed at its current location in Kahului (Bartholomew and Bailey 1994:121).

Japan’s war with China caused the 1940 Olympics to be transferred to Finland, but conditions in Europe prevented the games from taking place at all. Fujiko Matsui again won the 200-meter breaststroke event at the 1940 National Amateur Athletic Union Games and qualified for the Olympics, but the swimmer from Pu‘unēnē School was thwarted from competition by the cancellation of the Olympic Games.

In the early 1940’s, the harbor town of Kahului was transformed from a sleepy plantation merchantile area to an important military defense depot. Following the entry of the United States in World War II, the rapid construction of military defensive structures demanded the immediate use of plantation wharf space, heavy equipment, and operators. Plantation employees from Wailuku and Kahului were pressed into emergency service until military construction personnel arrived in the Hawaiian Islands. By early 1942, the Navy’s 39th Construction Battalion had reinforced the pre-war construction gangs composed of Pacific Naval Air Bases (PNAB) personnel and plantation labor. Completion of Naval Air Station was accelerated, and coastal defenses were further strengthened (Woodbury 1946).

Immediately following the end of World War II, Pu‘uunēnē NAS was completely dismantled. Over one thousand acres of fertile growing land in north Kīhei were returned to sugar cultivation by the Hawaiian Commercial & Sugar Company. On the development side, more improvements were made to the lands of Kahului NAS to create a modern civilian airport where the U.S. Navy’s second Carrier Air Service Unit (CASU) had once been based.

In the early morning on April 1, 1946, coastal residents of Kahului, Kahului NAS, Spreckelsville, Kaunoa, and Pā‘ia found themselves floundering in a quickly rising tide of ocean where their houses had once been. A tidal wave flattened the Officer’s Club at Kahului NAS, uprooted trees, and destroyed residences.

The 1946 tsunami caught the manager of the HC&S Company, Frank F. Baldwin, and his wife Harriet in their home at Spreckelsville Beach. Frank Baldwin watched the first wave wash through his garage and pick up his four cars as if they were toys. He recalled that the tidal wave of 1923 had done the same thing, and felt there was no further cause for alarm. But an unexpected second wave struck their home and washed Frank Baldwin through a glass wall. Servants helped Frank and Harriet Baldwin escape, but their house was destroyed (Burns 1991).

4.5.1 World War II (1941-1945)

With the outbreak of war between Japan and the United States, Pu‘u Nēnē NAS became the command headquarters for both Navy and Army units on the island of Maui. Plantation heavy equipment and plantation operators worked side by side with U.S. Engineering Department personnel to accelerate construction of defensive positions and immediately lengthen runways at the base. The call for an immediate extension of the runways to military specifications involved

extensive engineering to reroute miles of irrigation culverts for HC&S. The dispersion of facilities planned for Pu‘u Nēnē NAS would come to utilize over 2,500 acres of land, and involve housing for over 5,000 men (Command History 1945).

The attack on Pearl Harbor, December 7th, 1941, forced the “Project Dog” program at Pu‘u Nēnē NAS to assign its research to safer bases in the mainland United States. Wartime operations for VJ-3 would concentrate exclusively on providing radio-controlled aircraft as realistic targets for fleet anti-aircraft gunnery training exercises (Foundation 2002). Under wartime conditions, responsibilities for VJ-3 included maintaining an intense schedule of weather flights, rescue flights, and anti-submarine reconnaissance flights in the waters surrounding Maui.

Early in 1942, the first Carrier Air Service Unit, CASU-4, was commissioned, and the utility squadron personnel of VJ-3 were reinforced by Naval Air Station Officers. In June, 1942, Navy Fighting Squadron 72, the first of over 150 squadrons of U.S. Navy fighter, bomber, and scout aircraft, arrived for advanced training prior to moving into forward combat areas (Wilcox 2004). For four days in early June, 1942, as the Battle of Midway raged 600 miles to the northwest, NAS Puunene personnel were ordered into shelters and revetments, expecting bombing raids by Japanese aircraft sweeping across the Hawaiian archipelago (Vint 2000). With the success of American naval forces at Midway, the threat of imminent invasion vanished, and efforts to outfit military bases in the Hawaiian Islands for wartime training were redoubled.

Anti-aircraft gun emplacements and protective aircraft revetments were given top construction priority by the U.S. Pacific Naval Air Bases supervisors. Heavy equipment and civilian operators from Wailuku Sugar Company and Hawaiian Commercial & Sugar Company were employed at Pu‘u Nēnē NAS, with their pay charged back to the U.S. government. Milling at the plantation sugar mills was confined to daylight hours until “blackout” procedures were approved (HC&S Archives).

U.S. Engineering Department (U.S.E.D.) civilian construction contractors were entirely replaced at Pu‘u Nēnē NAS by military PNAB personnel by July, 1942. Domestic water pipelines were laid by HC&S to supply military camps being constructed at ten separate locations across the central Maui plains, including the Camp 6 location proximate to NAS Puunene. The main government road and the railroad line that served the wharf at North Kīhei were rerouted, as NAS Puunene expanded. The Army National Guard’s 108th Regiment, 27th Infantry Division, took up defensive duties along Maui’s coastlines beginning March, 1942, and occupied formal headquarters at NAS Puunene. On November 16, 1942, 400 men forming an advance echelon of the Navy’s 39th Construction Battalion arrived at NAS Puunene, to begin construction of underground fuel bunkers, bombproof buildings, ammunition magazines and an aviation ground school.

The establishment in 1943 of Pu‘u Nēnē NAS as a “Top Gun” school for fighter-aircraft tactics was based on the Navy’s use of highly-decorated veteran fighter pilots, such as Commanders Edward “Butch” O’Hare, James “Jimmy” Flatley, and James Thach; to relay the latest intelligence from the front lines to new pilots rotating into combat (Feightner 1996). “Maui Group Local Naval Defense Forces”, based at Pu‘u Nēnē NAS, controlled the training airspace over the Kaho‘olawe aerial bombing ranges, and administered the training schedule (Lundstrom 1990). Aircraft carriers were modified for combat in the Pacific Ocean at the Pearl Harbor Navy Yard, while their air

groups were flown to one of nine Navy airfields in Hawaii for advanced training – Pu‘u Nēnē NAS being the premiere airfield (Morison 1953).

Army National Guard Divisions were assigned to occupation, guard, and training stations in the Hawaiian Islands during World War II. Shoreline defenses held by the 27th Infantry Division on Maui were replaced by men of the 40th Infantry Division. As elements of both the 27th and 40th Divisions were combined and sent to the South Pacific for combat duty, they were replaced on Maui by regiments from the 33rd Infantry Division. A resident of Maui during WWII said, “It was common to see groups of soldiers wearing their unit insignias all over Maui: the “Sunshine” [40th Division], and “Golden Cross” [33rd Division], and the last ones stationed here were the “Mohawks” [98th Division]” (Sanford 2006).

As of March 6, 1943, the 48th Construction Battalion replaced the 39th “Seabees”, and immediately began construction of a new sewer and water system for Pu‘u Nēnē NAS (Turner 1946). Newsletters published by the 39th Seabees (Shore Lines) and the 48th Seabees (Trade Wind) were joined by an official Pu‘u Nēnē NAS newspaper, “To All Hands” (Later renamed “The Island Breeze”). Although military news in these papers was censored, personnel changes, “scuttlebutt” gossip columns, and sports highlights featuring teams organized within military leagues on Maui attracted the largest readership (Figure 16).

The 127th SeaBees relieved the 48th SeaBees in May of 1944, and finished an extensive network of ammunition magazines located toward Kīhei of the main air base. The completion of expanded housing areas, a second CASU area, and additional “SeaBees” housing was accomplished before the end of 1944. Two Mobile Construction Battalion Units, CBMU 563 and CBMU 575, arrived to maintain the refrigeration and water purification systems.

On July 1, 1945, Pu‘u Nēnē NAS personnel numbered 565 officers and 2,798 enlisted men, including seven Navy nurses, eight WAVES (Women Accepted for Volunteer Emergency Service) officers, and 92 WAVES enlisted personnel (Monthly Station Report of On-Board Personnel, NAS Puunene, Confidential, 1 July 1945). Total aircraft on board numbered 271 (Monthly Station Report of On-Board Aircraft, Confidential, 1 June 1945). The total number of structures built numbered over 300 (Figure 17).

Immediately following the August 1945 surrender of Japan to the military forces of the United States, facilities essential to the operation of Kahului NAS began to be removed from Pu‘unēnē. The bowling alley, bakery, and other specialized structures at Pu‘unēnē NAS were relocated to Kahului NAS, only to be partially or entirely destroyed by a series of tidal waves that struck Kahului NAS facilities April 1, 1946 (*Flyer* 1946).

During 1946, Mauians were allowed to rent residential structures in Housing Area “A”, the area closest to the Reservoir 6 known as “Airport Village”. The cost was reportedly $36.00 per month (Cabos 2000). By 1947, postwar use of the airstrip at Pu‘unēnē for civilian aviation led some Mauians to believe that the site might be further expanded (Belknap 1947). But, by the end of 1948, the site of the former Naval Air Station at Kahului had been chosen to replace the Pu‘u Nēnē site for all future civilian flight operations.

By quitclaim deed dated December 31, 1948, the lands of the former air base were transferred from the United States back to the Territory of Hawai‘i. The remaining base facilities, most of which were wooden structures, had, by that time, been abandoned or demolished.



Figure 16. Torpedo Squadron 6 (VT-6) football team, fall of 1943, Puʻu Nēnē, Maui (Photo courtesy of the Naval Historical Center, Washington Navy Yard)

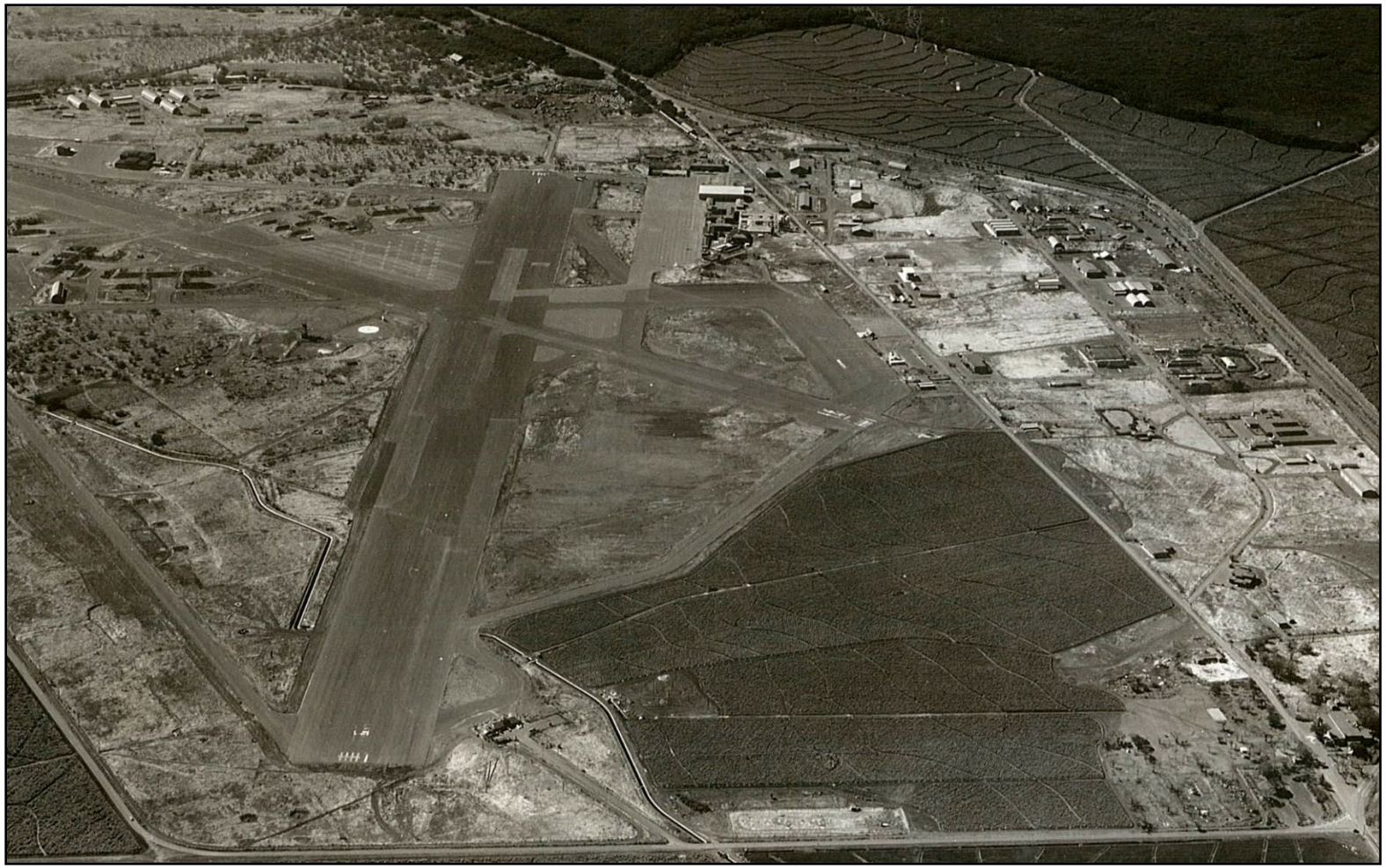


Figure 17. U.S. Air Forces oblique photograph taken 2-12-47. A number of the base buildings are dismantled, and a portion of the base is planted in sugar (photo courtesy of the Naval Historical Center, Washington Navy Yard, Washington, D.C.).

In May 1951, the operations of Hawaiian Airlines and Trans-Pacific Airlines (Aloha Airlines) were moved to the new civilian airport at Kahului, which utilized the runways of the former Naval Air Station Kahului. Thereafter, Pu‘unēnē airfield was placed on “caretaker status”, and sugar cultivation reclaimed much of the land area formerly dedicated to the aerodrome.

4.6 Contemporary Land Use

Postwar Maui saw the wholesale development of Kahului as a master-planned community providing fee-simple ownership of single-family homes. The majority of the homes, located between Baldwin High School and Pu‘unēnē Avenue, were purchased by plantation employees and servicemen returning from duty overseas. This trend continued throughout the 1950’s, with plantation camp populations falling in the outlying communities, including Pu‘unēnē, and rising in the central town site of Kahului’s new “Dream City” (Dean 1950).

The early postwar years (1946-1950) saw the construction of larger infrastructure, including projects such as the Maui Memorial Hospital in Wailuku. Areas once occupied by the military returned to cattle ranching, and pineapple and sugar cultivation. The pace of social change began to accelerate. The political power base of the County of Maui began to include Nisei, second-generation Japanese Americans, who had returned from service in Europe during WWII. Their involvement in county politics began to swing political power from the large agribusiness owners to the union leaders representing plantation workers eager for a change (Speakman 1978:148-149).

In the years during the Korean War (1950-1953), the modernization of the workforce and stronger unions brought a host of changes to the central region of Maui. Gone were the railroads of the prewar age, replaced by trucks and mechanized sugar and pineapple harvesters. The modernization of the Kahului Harbor meant that canned pineapple, bulk sugar and molasses could be loaded onto ships faster. Following statehood for Hawai‘i in 1959, mainland retail giants S.H. Kress & Co. and the National Dollar Stores Ltd. expanded their existing locations in Wailuku, and a Ben Franklin Store anchored the new Kahului Shopping Center. Manpower for the construction of new tourist resorts in the outlying leeward areas of Maui would come almost exclusively from Maui’s central district (Bartholomew and Bailey 1994:132).

Statehood also saw the establishment of the Kanahā Pond Wildlife Sanctuary (SIHP 50-50-05-1783). This project was accomplished by the State of Hawai‘i to protect the cultural remains of the original fish pond wall structure, and three endangered wetland bird species: the Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian coot (*Fulica alai*), and Hawaiian duck (*Anas wyvilliana*).

In 1966, what was once the quarry department of the Kahului Railroad and the ready-mix concrete and concrete products department of A&B Commercial Company combined to form Concrete Industries Inc., a wholly-owned subsidiary of Honolulu Concrete and Draying, Ltd.

By 1988, after 125 years of sugar operations, and varied attempts at diversified agriculture, the Wailuku Sugar Company mill was closed, scrapped, and the site redeveloped as an industrial park. The current land-use of the corridor connecting Kahului with Wailuku includes a mix of residential, warehousing, light industrial and commercial, with retail sales centered primarily in Kahului.

Until December 2016 when HC&S announced its closure, most of the land area of Wailuku Ahupua‘a was in sugar cultivation. HC&S was the last sugar plantation still in operation in the State of Hawai‘i.

The Hawaiian Cement Puunene Quarry started in the late-1970s with 28 acres. The quarry expanded in 1980 to 194 acres. The primary resource of the quarry is basalt that is crushed and used for road base course, concrete and pavement aggregate, railroad ballast, and many other purposes (Yanik 2018)

Section 5 Previous Archaeological Research

The earliest archaeological studies on the island of Maui were island-wide surveys conducted in the early 1900s (Stokes 1917; Walker 1931). These studies tended to focus on the generation of descriptive lists of large-scale architecture or traditional ceremonial *heiau* sites. No *heiau* or other archaeological sites were documented in the immediate vicinity of the current project area. Between 1931 and 1976, only sporadic archaeological studies were undertaken in the region and none in the vicinity of the project area. Following the passage of the National Historic Preservation Act in 1966 and HRS Chapter 6E, which established the Historic Preservation Program in 1976, archaeological studies occurred as a condition of development on a more frequent basis.

There have been six archaeological studies conducted in the vicinity of the current project, which include an archaeological reconnaissance survey and AIS investigations (Figure 18 and Table 3). These studies have identified NAS Puunene, consisting of 59 standing structures and 165 total features (SIHP # 50-50-09-04164), post-war ranching features (SIHP # 50-50-09-04801), the Kīhei Railroad bed (SIHP # 50-50-09-04802), the Haiku Ditch and reservoir (SIHP # 50-50-09-04803), and 90 other historic properties (SIHP #s 50-50-10-06693 through 10-06774) consisting of features associated with the sugar plantation, ranching, and/or WWII period (Figure 19).

5.1 Kennedy (1990)

In 1990, Archaeological Consultants of Hawaii, Inc. (ACH) completed an archaeological walk-through reconnaissance survey of the proposed Hawaiian Cement Puunene Quarry site, TMKs: [2] 3-8-004:001 and 002 pors. (Kennedy 1990). The survey included an inspection of Kolaloa Gulch and the surrounding agricultural fields. The study documented that the entire property was covered in sugarcane with the exception of Kolaloa Gulch. No historic properties were identified, and no further work was recommended.

5.2 Tomonari-Tuggle et al. (2001)

From 8 October to 4 November 1999, International Archaeological Research Institute, Inc. (IARII) conducted an intensive AIS of approximately 1,875 acres of the former NAS Puunene, TMK: [2] 2-3-008:008 (Tomonari-Tuggle et al. 2001). The study area is directly west of the current project area and was used primarily for sugarcane cultivation following the closure of NAS Puunene in 1946. The identified historic properties were categorized into five functions and summarized as follows:

> Sites and features recorded include [1] all of the existing features of NAS Puunene; [2] remains of a cattle ranch dating from the late 1940s to the 1950s; [3] the area of pre-war plantation Camp Six with surface artifacts but no surviving features; [4] abandoned features of the HC&S sugar operations such as a 1930s cane road and irrigation canals of various periods, including a possible pre-1914 section of the Haiku Ditch, and [5] remains of the Puunene Mill to Kīhei railroad line. Evidence for early 1960s Civil Defense activity and late 1980s timber processing was also identified. No pre-contact or early post-contact Hawaiian sites were identified. No human remains were found, nor were any sites or locations identified that have the potential for containing human remains. [Tomonari-Tuggle et al. 2001:iii]

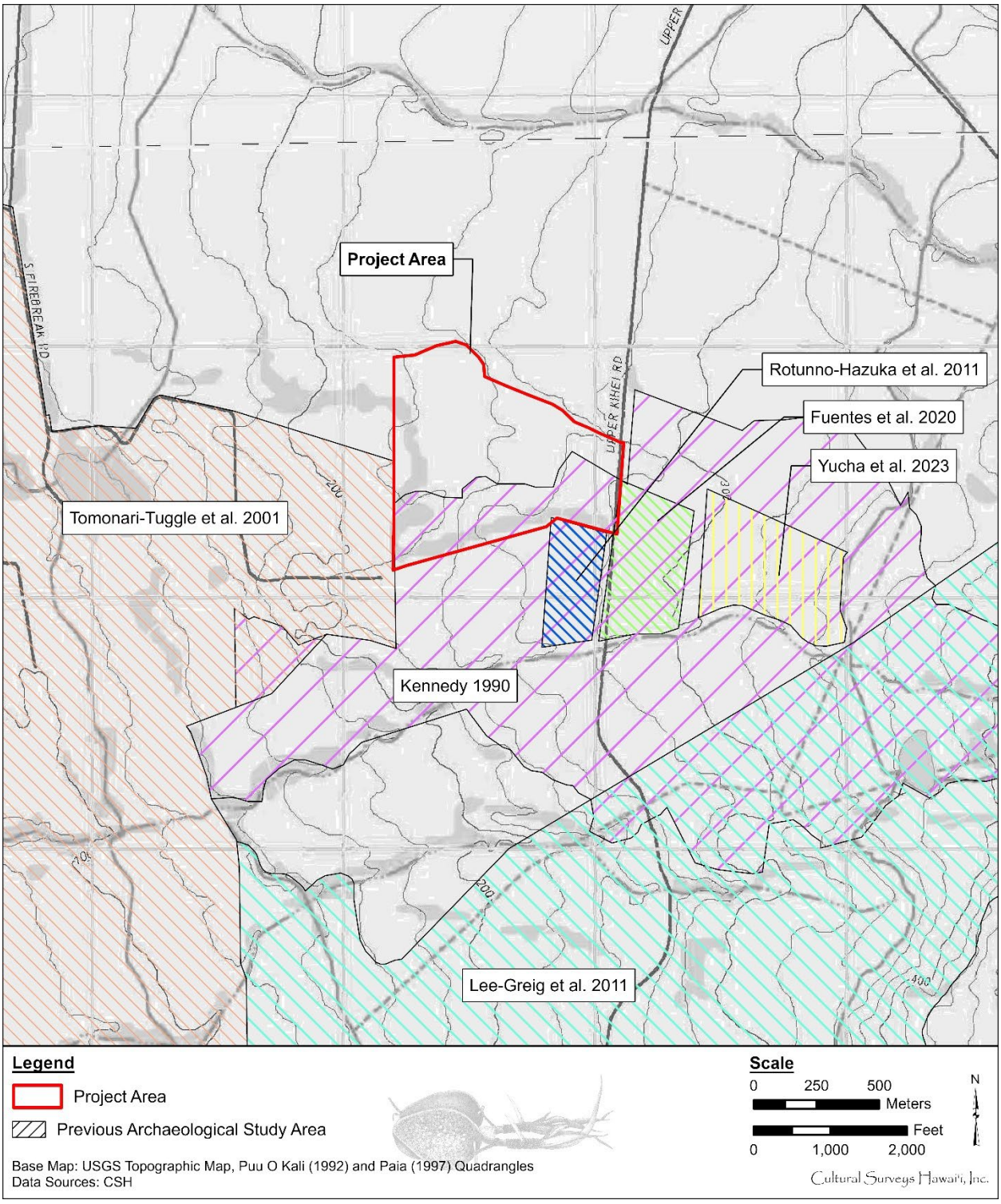


Figure 18. Portions of the 1992 Puu o Kali and 1997 Paia USGS topographic quadrangles depicting previous archaeological studies in the vicinity of the current project area (U.S. Geological Survey 1992, 1997)

Table 3. Previous archaeological studies in the vicinity of the project area

Reference	Type of Study	Location	Results (SIHP # 50-50-)
Kennedy (1990)	Archaeological reconnaissance survey	Hawaiian Cement Puunene Quarry; TMKs: [2] 3-8-004:001 and 002 pors.	No historic properties identified
Tomonari-Tuggle et al. (2001)	AIS	Former NAS Puunene; TMK: [2] 2-3-008:008	Identified 165 individual features of NAS Puunene (SIHP # 09-04164), 7 plantation features (SIHP # 09-04800), 2 postwar ranching features (SIHP # 09-04801), a railroad feature (SIHP # 09-04802) and 5 plantation irrigation features (SIHP # 09-04803)
Lee-Greig et al. (2011)	AIS	Approximately 3165 acres located northeast and extending *mauka* (toward the mountains) from the present project area	Identified 90 historic properties, SIHP #s 10-06684 through 10-06774, consisting of features associated with the sugar plantation, ranching and/or WWII period
Rotunno-Hazuka et al. (2011)	AIS	Hawaiian Cement Puunene Quarry Expansion Increment 1; TMK: [2] 3-8-001 por.	No historic properties identified
Fuentes et al. (2020)	AIS	Hawaiian Cement Puunene Quarry Expansion Increment 3; TMK: [2] 3-8-001 por.	No historic properties identified
Yucha et al. (2023)	AIS	Hawaiian Cement Puunene Quarry Expansion Increment 4; TMK: [2] 3-8-004:001 por.	No historic properties identified

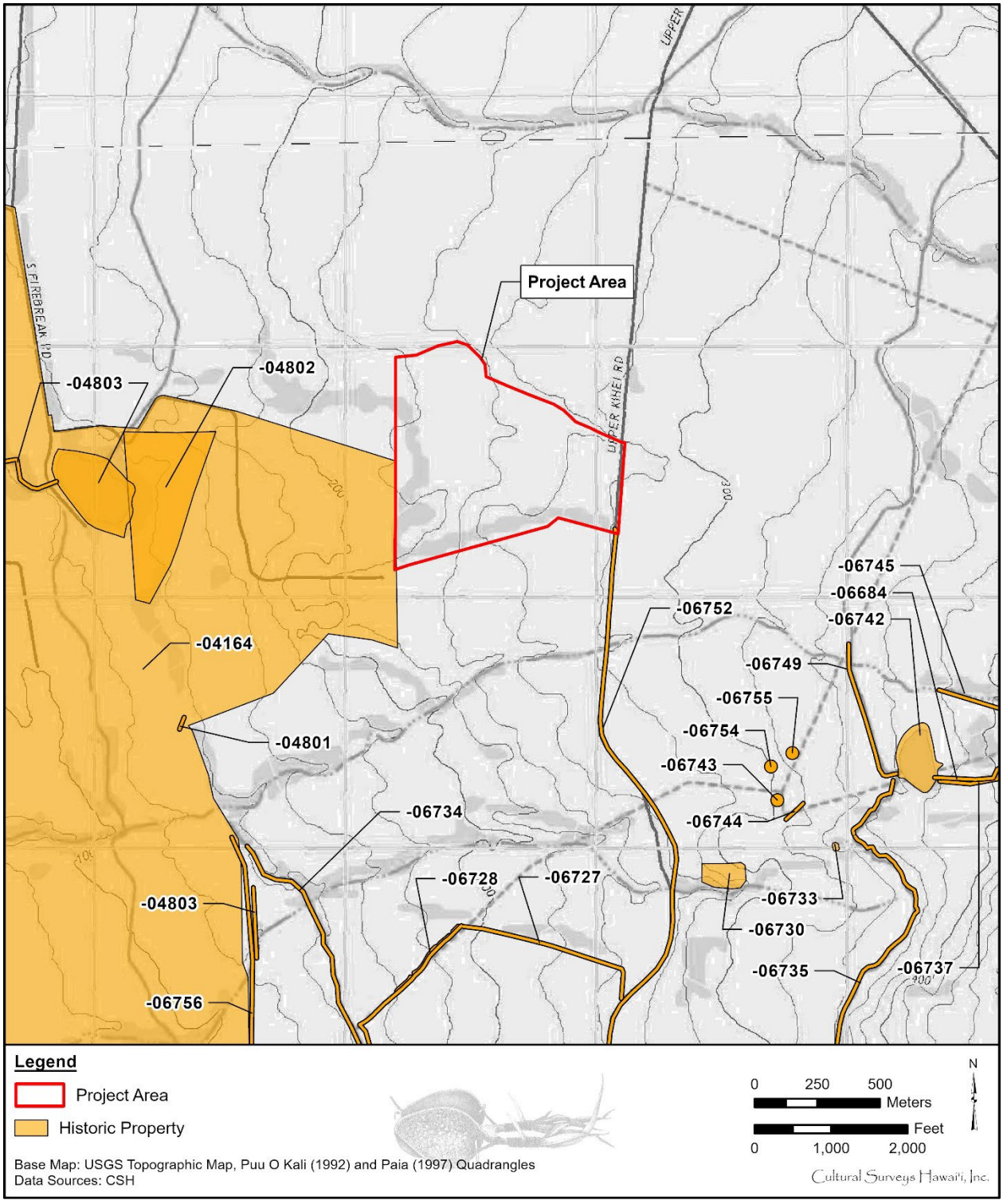


Figure 19. Portions of the 1992 Puu o Kali and 1997 Paia USGS topographic quadrangles depicting historic properties in the vicinity of the current project area (U.S. Geological Survey 1992, 1997)

The NAS Puunene was previously identified as SIHP # 50-50-09-04164. The study documented 165 features associated with SIHP # 09-04164. Four historic properties were newly identified, SIHP #s 50-50-09-04800 through 09-04803. SIHP # 09-04800 is a complex of seven sugar plantation features. SIHP # 09-04801 is a complex of ranching features (fences, corrals, watering troughs) from post-WWII. SIHP # 09-04802 is the Kīhei railroad, and SIHP # 09-04803 consists of five features relating to the Haiku ditch and reservoir.

SIHP # 09-04164, was assessed as eligible to the National and State Registers of Historic Places and significant under Criteria A (be associated with events that have made an important contribution to the broad patterns of our history), C (embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value), and D (have yielded, or is likely to yield, information important for research on prehistory or history). SIHP #s 09-04800, 09-04802, and 09-04803 were assessed as eligible to the National Register of Historic Places (NRHP) under Criteria A and D. SIHP # 09-04801 was assessed as not eligible to the NRHP as it likely dated to the early 1950s and not yet over 50 years old.

5.3 Lee-Greig et al. (2011)

From October through December 2009 and in February 2010, CSH conducted an AIS of approximately 3,165 acres in Pūlehunui for a proposed agricultural subdivision (Lee-Greig et al. 2011). Ninety historic properties (SIHP #s 50-50-10-06684 through 10-06774) were documented, consisting of features associated with the sugar plantation, ranching and/or WWII period (Table 4).

5.4 Rotunno-Hazuka et al. (2011)

In 2010, ASH conducted an AIS for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry, TMK: [2] 3-8-001 por. (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified, and the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). No further work was recommended.

5.5 Fuentes et al. (2020)

In 2014, ASH conducted an AIS of Increment 3 of the Hawaiian Cement Quarry, TMK: [2] 3-8-001 por. (Fuentes et al. 2020). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. Due to negative findings, the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A).

5.6 Yucha et al. (2023)

In December 2022, CSH conducted an AIS for the Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project, TMK: [2] 3-8-004:001 por. (Yucha et al. 2023). The investigation included a 100% pedestrian inspection and the excavation of 20 backhoe-assisted test excavations. No historic properties were identified, and the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). Overall, the stratigraphy throughout the majority of the project area included a modern agricultural plow zone surface (Ap horizon) overlying natural alluvial soil and chemically eroded bedrock.

Table 4. Historic properties documented by Lee-Greig et al. (2011:64-68)

SIHP # 50-50-10-	Feature	Feature Type	Function	Probable Age	Condition
06684	None	Irrigation Pipe	Water Control	Historic Plantation	Fair to Poor
06689	None	Fence Line	Animal Husbandry	Historic Ranch	Good
06704	None	Fence Line	Animal Husbandry	Historic Ranch	Fair
06727	None	Fence Line	Indeterminate	Historic Ranch	Poor
06728	None	Irrigation Ditch	Water Control	Historic Plantation	Remnant
06729	None	C-Shape	Indeterminate	Possible Historic	Good
06730	Overall	Plantation Camp 3	Habitation	Historic Plantation	Good to Remnant
	A	Platform	Habitation	Historic Plantation	Good to Fair
	B	Wall	Indeterminate	Historic Plantation	Fair
	C	Wall	Indeterminate	Historic Plantation	Fair
	D	Depression	Indeterminate	Historic Plantation	Fair to Poor
	E	Mound	Indeterminate	Historic Plantation	Good
	F	Wall/Depression	Indeterminate	Historic Plantation	Poor
	G	U-Shape	Indeterminate	Historic Plantation	Poor
	H	Depression/Hole	Habitation	Historic Plantation	Poor
	I	Terrace	Habitation	Historic Plantation	Remnant
06733	None	Reservoir	Agriculture	Historic Plantation	Good
06734	None	Irrigation Ditch	Water Control	Historic Plantation	Good
06735	Overall	Irrigation Ditch and Component Gates	Water Control	Historic Plantation	Good to Fair
	A	Irrigation Ditch	Water Control	Historic Plantation	Good
	B	Irrigation Gates	Water Control	Historic Plantation	Fair
06737	None	Irrigation Ditch	Water Control	Historic Plantation	Good
06742	None	Reservoir	Agriculture	Historic Plantation	Good
06743	None	Pump House	Agriculture	Historic Plantation	Remnant

SIHP # 50-50-10-	Feature	Feature Type	Function	Probable Age	Condition
06744	None	Fence Line	Animal Husbandry	Historic Ranch	Remnant
06745	None	Fence Line	Possible Boundary Marker	Historic Plantation	Poor
06748	None	Reservoir	Agriculture	Historic Plantation	Good
06749	None	Irrigation Ditch	Water Control	Historic Plantation	Good
06752	None	Historic Road	Transportation	Historic Plantation	Good to Poor
06754	None	WWII-Era Bomb Shelter	WWII Military	WWII Military	Excellent
06755	None	Concrete Cistern	Water Control	Historic Plantation	Good
06756	None	Historic Road	Transportation	Historic Plantation	Good to Poor
06757	None	Historic Road	Transportation	Historic	Poor
06758	None	Irrigation Pipeline	Agriculture	Historic Plantation	Good to Fair
06759	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06760	None	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06761	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06762	None	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06763	None	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06764	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06765	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06766	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06767	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06768	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06769	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06770	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06771	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair

SIHP # 50-50-10-	Feature	Feature Type	Function	Probable Age	Condition
06773	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair
06774	Multiple	Field Clearing Mounds	Agriculture	Historic Plantation to Modern Era	Good to Fair

Section 6 Consultation Results

6.1 Introduction

Throughout the course of this assessment, an effort was made to contact and consult with NHO, agencies, and community members including descendants of the area, in order to identify individuals with cultural expertise and/or knowledge of the *ahupua‘a* of Pūlehunui. CSH initiated its outreach effort in December 2024 through letters, emails, and/or telephone calls.

6.2 Community Outreach Letter

Letters along with maps and aerial photographs of the project area were mailed with the following text:

> *Aloha mai kākou,*
>
> With this letter, Cultural Surveys Hawai‘i (CSH) humbly requests your *mana‘o* and *‘ike* (experience, insights, and perspectives) regarding past and ongoing cultural, practices, beliefs, and resources within the Pūlehunui Ahupua‘a.
>
> Consultation with traditional cultural practitioners, *kūpuna*, *kama‘āina*, and Hawai‘i’s diverse ethnic communities is an important and deeply valued part of our work and the environmental review process for proposed projects in Hawai‘i. Your contributions will revitalize and keep alive knowledge of cultural practices, storied places, and life experiences that will remind Hawai‘i’s children of their history for generations to come.
>
> Project Description
>
> At the request of Hawaiian Cement ,CSH is conducting a cultural impact assessment (CIA) for Hawaiian Cement’s New Mining Area Project. The project area is depicted on a portion of the 1992 Puu O Kali and 1997 Paia U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangle (Figure 1) and a detailed 2020 ESRI aerial image (Figure 2).
>
> Hawaiian Cement proposes to develop a new mining area adjacent to their existing quarry area, approximately 125 acres, within a portion of TMK [2] 3-8-004:001 CPR 2. The parcel is currently owned by Mahi Pono Central A, LLC.
>
> Purpose of this Study
>
> The purpose of a CIA is to gather information on Hawai‘i’s cultural resources, practices, or beliefs that have occurred or still occur within the proposed project area and Pūlehunui Ahupua‘a. This is accomplished through consultation and background research using previously written documents, studies, and interviews. This information is used to assess potential impacts by the proposed project to the specific identified resources, practices, and beliefs in the project area and throughout Pūlehunui Ahupua‘a. As a traditional cultural practitioner and holder of long-term knowledge, your insight, input, and perspective provide a valuable

contribution to the assessment of potential effects of this project and an understanding of how to protect these resources and practices.

Insights focused on the following topics in the project area (shown on the attached Figures 1 and 2) are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and Pūlehunui Ahupua‘a
- Your specific traditional cultural practice and its connection to the proposed project area and Pūlehunui Ahupua‘a
- The different natural resources associated with your specific traditional cultural practice
- Legends, stories, or chants associated with your specific traditional cultural practices and their relationships to the proposed project area and Pūlehunui Ahupua‘a
- Referrals to other kūpuna, kama‘āīna, and traditional cultural practitioners knowledgeable about the proposed project area and Pūlehunui Ahupua‘a
- Your comments or thoughts on the potential impacts the proposed project may have on your ongoing traditional cultural practices and natural resources within the proposed project area and Pūlehunui Ahupua‘a
- Your knowledge of cultural sites and wahi pana (storied places) within the proposed project area and Pūlehunui Ahupua‘a
- Your comments or thoughts on the potential impacts the proposed project may have on cultural sites and wahi pana within the proposed project area and Pūlehunui Ahupua‘a

Consultation Information

Consultation is an important and deeply valued part of the CIA and environmental review process. Your contributions will revitalize and keep alive our combined knowledge of past and ongoing cultural practices, historic places, and experiences, reminding our children of their history generation after generation.

With your agreement to participate in this study, your contributions will become part of the comprehensive understanding of traditions of the area, and part of the public record. As part of this process, your knowledge may be used to inform future CIAs and other heritage studies of cultural practices and resources that need protection from impacts of proposed future projects. If you engage in consultation, and the *mana‘o* and *‘ike* you provide appears in the study, we would like to recognize your contribution by including your name. If you prefer not to allow your name to be included, your information can be attributed to an anonymous source.

The consultation interview structure and format are flexible. We will accommodate your preference on how to get together; talk story, over the phone, by email

correspondence, remotely via Zoom, MS Teams, Google Chat or other remote meeting platforms.

Your knowledge of the resources and potential effect of the project on traditional practices in the project area and Pūlehunui Ahupua‘a focusing on the topics in the bullet points above can also be submitted in a written statement. CSH will provide return postage of your written statement on request. CSH is happy to provide a list of topics for discussion, a more structured questionnaire of interview questions, or any other assistance that might be helpful.

[…]

Mahalo a nui,

[…]

6.3 Community Outreach Table

Below in Table 5 are names, affiliations, dates of contact, and comments from NHOs, individuals, organizations, and agencies contacted for this project. Results are presented below in alphabetical order.

Table 5. Community Outreach Table

Name	Affiliation	Comments
Ahia, Jennifer Noelani	Malama Kakanilua	Letter and figures sent via email 5 December 2024 Second round letter and figures sent via email 12 February 2025
Ampong, Foster	*Kama‘āina*	Letter and figures sent via email 5 December 2024 Second round letter and figures sent via email 12 February 2025
Apana, Clare	Cultural Practitioner; Malama Kakanilua; Aha Moku Council Burial Committee	Letter and figures sent via email 12 February 2025
Bisgard, Bill	Former engineer, Hawaiian Commercial and Sugar Company (HC&S)	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via USPS 12 February 2025
Buland, Holly	Assistant Director, Alexander & Baldwin Sugar Museum	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via email 12 February 2025

Name	Affiliation	Comments
Butler, Kelly	District Manager, Maui County Soil and Water Conservation District	Letter and figures sent via email 12 February 2025
Eaton, Antoinette “Toni”	Maui District Office Supervisor, Department of Hawaiian Home Lands	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via USPS 12 February 2025
Feiteira, Blossom	Advocacy Director, Kū Pono Ka Leo o Ka ‘Āina (KPKOA)	Letter and figures sent via email 12 February 2025 Email invalid
Ferreira, Stacy	Ka Pouhana, OHA	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via email 12 February 2025
Fisher, Scott	Director of ‘Āina Stewardship, Hawaiian Islands Land Trust (HILT)	Letter and figures sent via email 12 February 2025
Freeland, Denby	*Kapa* Artist	Letter and figures sent via email 12 February 2025
Gomes, Noah	Ethnographer, SHPD	Letter and figures sent via email 12 February 2025 Mr. Gomes replied to CSH: *Mahalo for reaching out. I do not have any recommendations for this project at this time. If something does come up, or comes my way, I will be sure to let you know.* CSH replied with thanks.
Hall, Dana	Hui Alanui o Makena	Letter and figures sent via email 12 February 2025
Hokoana, Lui	President, Central Maui Hawaiian Civic Club	Letters and figures sent via USPS 4 December 2024 Returned to sender
Holt-Padilla, Hokulani	Kumu Hula, Pā‘ū o Hi‘iaka/Cultural Specialist/Chancellor of Maui College	Letter and figures sent via email 12 February 2025
Ho‘opi‘i, Michelle	Maui/Lana‘i Island Burial Council, Wailuku Rep	Letter and figures sent via email 12 February 2025

Name	Affiliation	Comments
Iaukea, Lesley	Acting History & Culture Branch Chief, SHPD	Letter and figures sent via email 12 February 2025
Kahalehau, Clyde	Aha Moku, Maui – Na Hono A‘o Pi‘ilani - Wailuku Moku	Letter and figures sent via email 12 February 2025
Kalanikau, Paula	*Kama‘āina/Kupuna*	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via USPS 12 February 2025
Kalili, Dre	*Pelekikena* (President), Association of Hawaiian Civic Clubs	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via USPS 12 February 2025
Kaluna-Palafox, Vicky	Wailuku Representative, Wai ‘Aha Moku O Maui Committee	Letter and figures sent via email 12 February 2025
Kamaunu, Johanna	Former Maui/Lana‘i Burial Council - Wailuku	Letter and figures sent via email 12 February 2025
Kamaunu, Kaniloa	Aha Moku Council Wailuku Representative; Aha Moku Council Burial Committee	Letter and figures sent via email 12 February 2025
Kamekona, Carol Lee	Ahahui Kaahumanu - Wailuku	Letter and figures sent via email 12 February 2025
Kapahulehua, Leonard Kimokeo	Founder, Kimokeo Foundation	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via USPS 12 February 2025
Kapu, Ke‘eaumoku	CEO, Aha Moku o Maui/Koani Foundation (501C3)	Letter and figures sent via email 12 February 2025
Kapu, Uilani	Treasurer, Na Aikane o Maui	Letter and figures sent via email 12 February 2025
Kawaihae, Niniau	Community Engagement Director, OHA	Letter and figures sent via email 12 February 2025 Email invalid
Lake-Farm, Sissy	Executive Director, Maui Museum/ Kumu Hula, Nā Hanona Kūlike ‘o Pi‘ilani	Letters and figures sent via USPS 4 December 2024 Second round letters and figures sent via email 12 February 2025

Name	Affiliation	Comments
Lee, Carol-Marie Kaonohi‘okala	*Kama‘āina*	Letter and figures sent via email 12 February 2025
Lu‘uwai, Kalei	*Kama‘āina*	Letters and figures sent via USPS 4 December 2024
Maluo-Pearson, Kahulu	*Kumu Hula*, Hālau Kamaluokaleihulu	Letter and figures sent via email 12 February 2025
Nakahashi, Ikaika	Cultural Historian, SHPD	Letter and figures sent via email 12 February 2025 Mr. Nakahashi responded 20 February 2025 with recommendations to consult with Ke‘eaumoku Kapu and the County of Maui Department of ‘Ōiwi Resources. Outreach letters were sent to all parties.
Nakihei, Sarah	Maui Homestead Farmers and Ranchers Association	Letter and figures sent via email 12 February 2025
Pellegrino, Hokuao	Nohoana Farm Owner; Manager and Land Education Specialist for Kamehameha Schools Maui	Letter and figures sent via email 12 February 2025
Phillips, Kealana	Burial Sites Specialist (Maui, Molokai, and Lanai)	Letter and figures sent via email 12 February 2025 Mr. Phillips responded 14 February 2025 informing CSH that he forwarded our outreach letter to the Department of ‘Ōiwi. CSH responded with thanks.
Pundyke, Kawewehi	Wailuku Representative, ‘Āina ‘Aha Moku O Maui Committee; Program Director, Loiloa	Letter and figures sent via email 12 February 2025
Purdy, Malia	Executive Director, Hui No Ke Ola Pono	Letter and figures sent via email 12 February 2025
Pyle, Bill	Former HC&S employee	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via USPS 12 February 2025
Raymond, Ki‘ope	Hawaiian Studies Teacher, UH Maui	Letter and figures sent via email 12 February 2025

Name	Affiliation	Comments
		Mr. Raymond responded: *I have no comments at this time.* CSH replied with thanks.
Schattenburg-Raymond, Lisa	Horticulturalist/Former Executive Director, Maui Nui Botanical Gardens	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via USPS 12 February 2025
Smith, Jade Alohalani	Representative; Moku o Kaupo	Letters and figures sent via USPS 4 December 2024 Second round letter and figures sent via USPS 12 February 2025
Tanahy, Dalani	Kapa Maker	Letter and figures sent via email 12 February 2025

To date, there has been no responses to include in this CIA report. It should be noted that this does not suggest the community is against or in favor of the project, but simply that they did not respond to the invitation for consultation.

Section 7 Traditional Cultural Practices

Timothy R. Pauketat succinctly describes the importance of traditions, especially in regard to the active manifestation of one's culture or aspects thereof. According to Pauketat,

> People have always had traditions, practiced traditions, resisted traditions, or created traditions […] Power, plurality, and human agency are all a part of how traditions come about. Traditions do not simply exist without people and their struggles involved every step of the way. [Pauketat 2001:1]

It is understood that traditional practices are developed within the group, in this case, within the Hawaiian culture. These traditions are meant to mark or represent aspects of Hawaiian culture that have been practiced since ancient times. As with most human constructs, traditions are evolving and prone to change, resulting from multiple influences including modernization as well as other cultures. It is well known that within Hawai‘i, a "broader 'local' multicultural perspective exists" (Kawelu 2015:3). While this "local" multicultural mix is deservedly celebrated, it must be noted that it often comes into contact with "traditional Hawaiian culture." This contact among cultures and traditions has undoubtedly resulted in numerous cultural entanglements. These cultural entanglements have prompted questions regarding the legitimacy of newly evolved traditional practices. The influences of "local" culture are well noted throughout this section and understood to represent survival or "the active sense of presence, the continuance of native stories, not a mere reaction, or a survivable name. Native survivance stories are renunciations of dominance, tragedy and victimry" (Vizenor 1999:vii). Acknowledgement of these "local" influences helps to inform nuanced understandings of entanglement and of a "living [Hawaiian] contemporary culture" (Kawelu 2015:3). This section strives to articulate traditional Hawaiian cultural practices practiced within the *ahupua‘a* in ancient times, and the aspects of these traditional practices that continue to be practiced today; however, this section also challenges "tropes of authenticity" (Cipolla 2013) and acknowledges the multicultural influences and entanglements that may "change" or "create" a tradition.

This section integrates information from Sections 1–4 in examining cultural resources and practices identified within or in proximity of the project area in the broader context of the encompassing Pūlehunui landscape.

7.1 Agricultural and Gathering Practices

A total of 13 land commission claims were made in Pūlehunui, and nine were awarded (LCAs 0327B, 9671, 9019, 4672, 9672, 9673, 8866, 4567, and 5230). The majority of the lands awarded were *kula* used for potato (both sweet potato and Irish potato) cultivation and were primarily located along the upper elevations of Kula Moku (Waihona ‘Aina 2000).

In H. Kuihelani's testimony submitted to the Boundary Commission in 1862, recalled gathering *ma‘o* at Kama‘oma‘o for use in making *kapa* (Maly and Maly 2003:357–358).

The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs and in particular the long-lasting Irish potato. Although the whaling trade centered on Lāhainā, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that "From the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei]."

After 1830, dryland agriculture in the old Kula District expanded with a focus on Irish potato cultivation. Kula became the area of highest potato production and was known as “the potato district” (the area between 2000 and 5000 ft elevation). Potato production thrived in Kula from 1830-1850 until successful potato cultivation and production in California and Oregon resulted in a decline in the Hawai‘i trade (Burgett and Spear 1995:6–7). During this time, sugar cultivation and ranching were established in the Kula region (Brown and Haun 1989:C-7 and C-6). Much of the produce, sugar, and livestock moved down the Kalepolepo and Kekuawaha‘ula‘ula Trails to the landing at Kalepolepo, just south of the project area.

As the demand for locally produced agriculture dropped with the closure of the nearby entrepot at Kalepolepo, upland agricultural pursuits gradually gave way to ranching activities. Lower Kula consisted primarily of pastureland for ranching (Wong Smith in Donham 1992:B-6). The *kiawe* tree was imported and cultivated around 1840 as a source of cattle feed, and the low plains of Pulehunui were soon covered in *kiawe* forests (Handy and Handy 1972:510–511).

In 1898, KPC was organized. Water was the most critical component in sugar cultivation along the arid coastline of Maui’s leeward shores. Two ditches were developed to supplement the water needs of the 4,873 acres of sugar under cultivation at Kīhei (Gilmore 1936). Water tunneled from springs in the West Maui Mountains flowed through ditches in Wailuku to irrigate fields as far away as Mā‘alaea. Water from the windward rain belt of Kailua ran through a network of ditches from East Maui to Pā‘ia, to irrigate fields in Pu‘unēnē (Wilcox 1996). In 1908, the lands of the KPC were divided up between five new major business entities of HC&S; the Kailua Plantation Company (994 acres), the Kalialinui Plantation Company (923 acres), the Kula Plantation Company (996 acres), the Makawao Plantation Company (982 acres), and the Pulehu Plantation Company (978 acres). Sugar operations continued in North Kīhei until ca. 1968, when HC&S leased lands to a corn research farm.

7.2 Coastal and Marine Resources

The lands of coastal Pūlehunui were rich in marine resources. Hawaiian traditions and the presence of four fishponds are evidence that the coastal environs were also a focus of settlement and marine resource collection (Kolb et al. 1997).

Kolb et al. (1997:68) noted that the “ancient village of Kalepolepo was relatively small, and was built around an economy primarily based upon the exploitation of ocean resources--primarily the excellent fishing grounds as well as three large fishponds.”

Keālia Pond has been known as a source of high-quality salt from the pans in its immediate vicinity (James 2002:71). James (2002:71) also states that Keālia Pond “must have been an important producer of fish stock, particularly *awa* (milkfish) and *‘ama‘ama* (mullet)” and noted that a “*ko‘a* (fishing shrine) or possible *heiau* platform stands near the site.”

James (2002:74) noted the belief that Kō‘ie‘ie Fishpond was “a royal pond always stocked with the best fish.”

In H. Kuihelani’s testimony submitted to the Boundary Commission in 1862, he discussed his family’s *kuleana* as overseers of Mau‘oni and Kanahā fishpond, which belonged to the *ali‘i* at the time, Kauikeaouli. He also noted tha salt that was also gathered there was given to the *ali‘i* (Maly and Maly 2003:357–358).

The wetland environment of coastal Pūlehunui attracts many species of waterfowl in the winter months when water levels in the pond rise with seasonal flooding. These would have also served as a potential source of nourishment for subsistence communities in the region (James 2002:72).

Kanahā is a wetland sanctuary that is home to a large population of native Hawaiian stilts (*ā'eo*). Over fifty species of birds have been observed here, including herons, geese, ducks, owls, plovers, sandpipers, tattlers, coots, pheasants and doves (Pukui et al. 1974:83).

7.3 *Mo‘olelo* and *Wahi Pana*

Ke Kula o Kama'oma'o, or the Plains of Kama‘oma‘o, is a region of the central Maui isthmus. In traditional times, Kama‘oma‘o was known as a wandering place of the souls (Beckwith 1970). It was on this plain that souls waited to be ushered to their next life, to eternity. Hoyt (1976) mentions that Kama‘oma‘o was a place known for the "Marchers of the Night." Perhaps this could explain why this region was not populated at all but give insight as to its purpose as a battle field.

> These plains are home owl deities, considered one of the oldest guardian gods in Hawaiian mythology. Pueo-nui-akea was the name of owl who traversed these plains and restored life to wandering souls (Beckwith 1970:124).

Fornander (1919) recalls the story of Pumaia who was a heroic young man that fell to the hands of a spirit. This spirit, Puukolea, had a dual body, capable of shape-shifting in ways the mere human, Pumaia, could not. After falling to Puukolea, Pumaia's spirit returned home but continued to be chased by Puukolea. Pumaia fled till he reached the plains of Kama‘oma‘o. There an owl by the name of Pueonuiokona began battling Puukolea and ultimately killed him, his entrails were scattered about the plains.

Pu‘u Nēnē is easily noticeable as a cinder cone protruding from the plains of Kama‘oma‘o. Pu‘u Nēnē, is literally translated as "goose hill" according to Pukui and others (1974:49). The hill, named for the Hawaiian goose or *nēnē*, was a cinder cone built by lavas of the Kula series (Stearns and MacDonald 1942:83), elevation 187 feet (56 meters), that was located some 4 miles northeast of the Pu‘u Nēnē Mill.

Mau‘oni and Kanahā fishponds are located on the north shore of the central isthmus. According to *mo‘olelo*, Kanahā is named for Kanahaokalani, the brother of Kahamaluihiikeaoihilani, a high chiefess who broke the *kapu* of the ponds by walking on the center *kuapa* of the ponds. Mau‘oni is named for the identity she travelled by to protect her status as a chiefess of the highest rank (Sterling 1998: 87–88) .

Two *heiau* were known to be erected in Pūlehunui: Haleokane Heiau (Walker Site 221) and Niniwai Heiau (Walker Site 222 and 223) (Walker in Sterling 1998:253).

Section 8 Summary and Recommendations

8.1 Results of Background Research

Background research for this project yielded the following information (presented in approximate chronological order):

1. The current project area is located on the western flank of Haleakalā in the *moku* of Kula and *ahupua‘a* of Pūlehunui. Overall, Pūlehunui Ahupua‘a begins at Kilohana Peak, on the summit ridge of Haleakalā, and ends at a mid-point on the west shore of the central plains at a shared boundary with Waikapū Ahupua‘a, encompassing a total area of 16,687.78 acres (McCully 1879).
2. The lands of coastal Pūlehunui were rich in marine resources. Hawaiian traditions and the presence of four fishponds are evidence that the coastal environs were also a focus of settlement and marine resource collection (Kolb et al. 1997).
3. Ke Kula o Kama‘oma‘o, or the Plains of Kama‘oma‘o, is a region of the central Maui isthmus close to the present project area that was known by Hawaiians in traditional times as a wandering place of the souls (Beckwith 1970).
4. About the year 1776, Kama‘oma‘o Plain saw the battle of Kakanilua between Kalani‘ōpu‘u and Kahekili. Kalani‘ōpu‘u‘s army was annihilated in what was recognized as one of the most legendary battles of pre-contact Hawai‘i (Kamakau 1992:85).
5. During the early and middle 1800’s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease and nucleation around the developing port towns (Kuykendall 1938:312–313).
6. A total of 13 land commission claims were made in Pūlehunui, and nine were awarded (LCAs 0327B, 9671, 9019, 4672, 9672, 9673, 8866, 4567, and 5230). Only one of these awards, LCA 5230, is immediately surrounding and inclusive of the current project area.
7. The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs and in particular the long-lasting Irish potato. Kula became the area of highest potato production and was known as “the potato district” (the area between 2000 and 5000 ft elevation). During this time, sugar cultivation and ranching were established in the Kula region (Brown and Haun 1989:C-7 and C-6).
8. During World War II, Pu‘u Nēnē Naval Air Station became the command headquarters for both Navy and Army units on the island of Maui (Command History 1945).
9. The Hawaiian Cement Puunene Quarry started in the late-1970s with 28 acres. The quarry was further expended in 1980 to 194 acres. The primary resource of the quarry is basalt that is crushed and used for road base course, concrete and pavement aggregate, railroad ballast, and many other purposes (Yanik 2018).

8.2 Summary of Community Consultation

CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 43 individuals

or groups; two responded, none provided written testimony, and none of these *kama‘āina* and/or *kūpuna* met with CSH for more in-depth interview(s).

8.3 Impacts and Mitigations

8.3.1 Identification of Cultural Resources and Practices

Based on the results of community consultation and background research conducted as part of this CIA, CSH has identified the following cultural resources and practices within Pūlehunui Ahupua‘a:

1. Agricultural and gathering practices
2. Coastal and marine resources
3. *Mo‘olelo* and *wahi pana*

8.3.2 Identification of Impacts to Cultural Resources and Practices

No impacts to ongoing cultural resources and practices were identified within the project area during background research and community consultation for this CIA.

8.3.3 Mitigation Possibilities Identified During Background Research and Consultation

The results of community consultation, underscored by background research conducted for this CIA, inform the following mitigation possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups:

1. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3. In the event that *iwi kūpuna* (Native Hawaiian skeletal remains) are identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended.
2. In the event that *iwi kūpuna* and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

Section 9 References Cited

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PRELIMINARY DRAINAGE AND SOIL EROSION CONTROL STUDY

D

PRELIMINARY DRAINAGE & SOIL EROSION CONTROL STUDY

FOR

PROPOSED NEW QUARRY SITE

AT PULEHUNUI, WAILUKU, MAUI, HAWAII

TAX MAP KEY: (2) 3-8-04:01 (PORTION)

PREPARED FOR:

HAWAIIAN CEMENT
P. O. BOX 488
KAHULUI, HAWAII - 96732

PREPARED BY:

Tanaka
ENGINEERS, INC.
CIVIL ENGINEERING ● LAND SURVEYING ● CONSTRUCTION MANAGEMENT & INSPECTIONAL SERVICES

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII - 96793

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FIGURE 7 - TYPICAL CUT SECTION

I. INTRODUCTION:

Hawaiian Cement plans to lease additional lands for quarrying purposes to replace its existing quarry sites which is anticipated to be completely mined out shortly.

The proposed quarry site (125 acres) is located about 2 miles east (mauka) of Mokulele Highway in Pulehunui, Wailuku, Maui, Hawaii. The site is part of Parcel 1 of Tax Map Key (2) 3-8-04. The land is presently a citrus tree orchard. The general location, vicinity and plat maps are shown on Figures 1, 2 and 3, respectively.

Quarrying is expected to be done incrementally at a maximum area of 30 acres. After mining is completed for each increment, the exposed areas will be stabilized and suitable fill will be installed for the intended agricultural use.

The existing crusher and batching plants and related accessories at the present quarry site will be used in conjunction with the proposed mining operations at the proposed new quarry site.

II. PURPOSE:

The purpose of this preliminary study are as follows:

A. To determine the effect of this project on drainage conditions;

B. To determine the requirements for grading and Best Management Practices (BMPs) to control soil erosion during quarry operations.

III. BASIS OF STUDY:

The Drainage Calculations are based on the design criteria as set forth by the "Rules of the Design of Storm Drainage Facilities" in the County of Maui [1] hereinafter referred to as "Maui County Drainage Standards".

The proposed quarrying operations are regulated by the Department of Labor, Mine Safety and Health Administration.

IV. EXISTING ONSITE SOIL:

The predominant type of soil at the site belongs to Waiakoa and Pulehu Series [2]. The Waiakoa Series Soils include Waiakoa Extremely Stony Silty Clay Loam (WID2) on 3 to 25 percent slopes, Waiakoa Silty Clay Loam (WeB) and Waiakoa Very Stony Silty Clay Loam (WgB) on 3 to 7 percent slopes. Pulehu Series include Pulehu Silt Loam (PpA and PpB) on 0 to 7 percent slopes, Pulehu Cobbly Clay Loam (PtA) on 0 to 3 percent slopes and Pulehu Cobbly Silt Loam (PrB) on 3 to 7 percent slopes. All these types of soils are characterized by moderate to rapid permeability, slow runoff and slight to no more than slight erosion hazard. See Figure 4 for Soils Map.

V. ONSITE DRAINAGE:

A. Existing Conditions:

The proposed quarry site was fallow former sugar cane lands that have been planted as a citrus tree orchard. This site has an average slope of about 2 percent. The ground elevation ranges from approximately 220 to 290 feet above mean sea level.

The proposed site lies to the north of Kolaloa Gulch. Another existing drainageway lies to the north of and adjacent to the proposed project site.

Runoff from the southern half of the proposed quarry site flows in an east to west direction towards an adjoining parcel owned by the State of Hawaii [TMK: (2) 3-8-08:01].

Runoff from the northern portion of the site flows from east to west where it flows towards the previously mentioned drainageway immediately to the north of the proposed project site.

Existing storm runoff from mauka (east) lands is diverted by Upper Kihei Road into the adjacent drainageway along the north boundary of the project site and the storm runoff from lands to the north are diverted by said drainageway and do not affect the proposed project site.

Existing storm runoff from previously quarried lands to the south that are lower in elevation also do not affect the proposed project site.

The proposed mining operations will result in a large depression in the project area that will contain storm runoff in the project area after quarrying operations are completed.

B. Onsite Runoff:

The proposed new quarry site encompassing 125 acres of leased land will be mined in increments. Areas not in active quarrying will remain as citrus tree orchards. Therefore, for hydrologic analysis, a typical area of 30 acres with an overland flow of 1,600 feet long will be considered.

The rational method was used to determine runoff rate and volume for a 10-year and 50-year storm intensity, respectively. It was estimated that a typical 30-acre area in active quarry operations will increase the existing 10-year (1 hour) runoff rate by 21.9 c.f.s., from 26.1 c.f.s. to 48.0 c.f.s., while the increase of 50-year runoff volume is about 23,898 c.f. or 797 c.f. for each acre of grading area. The 50-year runoff volume increase will be the minimum volume to be retained onsite in order to attain a zero runoff increase during mining operations.

The onsite retention basins created at the low corners of the new quarry will remain in place after quarrying operations have ceased. Maintenance of these basins (low spots) will not be needed as no onsite runoff will escape this large quarry depression.

Drainage calculations are shown in the attached Preliminary Drainage Calculations.

VI. PROPOSED DRAINAGE FACILITIES AND GRADING:

The proposed mining operations is anticipated to increase the storm runoff especially during active excavation when the ground is bare.

Increase in runoff volume (50-year, 1-hr. storm) due to mining operations will be retained onsite by means of retention ponds to be constructed at the downstream end of the grading area(s). The ponds will be sized to contain at least the 50 year, 1-hour runoff volume increase. Aside from keeping the runoff at pre-quarrying levels, the retention ponds will also have the effect of reducing

or precluding the potential for sediment contained in the runoff from entering downstream properties.

A typical cut section of the graded area is shown on Figure 7. Each incremental grading will be limited to 30 acres maximum.

When quarrying is completed on each increment, the exposed areas will be stabilized with suitable fill for the intended agricultural use.

The exact depth of the final quarry is not known. Hawaiian Cement will quarry the rock out of the project area until the useable rock is exhausted and move horizontally to the next quarry phase, when the previously mined area will be stabilized. Past quarrying operations have yielded a mining depth of approximately 20 feet. Since the quarrying operations leaves a large depression in the land, onsite storm runoff generated by the project area is not anticipated to leave the site.

VII. FLOODING HAZARD:

The proposed new quarry site is located within Zone X as plotted on Panel 1500030580F of the Flood Insurance Rate Map for the County of Maui. Zone X is designated as areas of minimal flooding. Refer to Figure 6.

VIII. BEST MANAGEMENT PRACTICES:

Generally, the control of soil erosion and sediment will be in conformance with the applicable sections of the County of Maui Construction Best Management Practices [6].

The following are some of the measures to control soil erosion during quarrying operations.

A. Control dust with water from water wagons as needed, including week-ends and holidays, as necessary.

B. Mine area incrementally to extent possible. Exposed area at any given time should not be larger than 30 acres.

C. Areas where mining is completed should be stabilized.

IX. CONCLUSION:

Based on this preliminary study, the proposed mining operation will slightly increase the existing runoff quantities, however it is not anticipated to have adverse drainage effects on adjacent and downstream properties. The retention pond(s) to be constructed at the lower reaches of each incremental grading will keep or lower pre-quarrying runoff levels. The retention basin will also have the effect of reducing the potential for sediment contained in the runoff from entering neighboring properties.

Further, after mining is completed in each increment, the area will be stabilized with suitable fill for the intended agricultural use.

There will be no appreciable offsite runoff that will flow into or out of the the quarry area. Most of the offsite flows will be intercepted by Upper Kihei Road and the adjacent drainageway to the north.

X. REFERENCES:

1. Rules for the Design of Storm Drainage Facilities in the County of Maui, Title MC-15, Department of Public Works and Waste Management, County of Maui, Chapter 4.

2. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, prepared by U. S. Department of Agriculture, Soil Conservation Service, August 1972.

3. Flood Insurance Rate Maps for the County of Maui, September 19, 2012.

4. Rainfall-Frequency Atlas of the Hawaiian Islands, Technical Paper No. 43, U. S. Department of Commerce, Weather Bureau, 1962.

5. Erosion and Sediment Control Guide for Hawaii, prepared by U. S. Department of Agriculture, Soil Conservation Service, March 1981.

6. Construction Best Management Practices (BMPs) for the County of Maui, Dept. of Public Works and Waste Management, County of Maui, May 2001.

7. Guide for Obtaining and Developing Base (100-Year) Flood Elevations, prepared by Federal Emergency Management (FEMA), April, 1995.

PRELIMINARY DRAINAGE CALCULATIONS

I. Onsite

A. Reference: Rules for the Design of Storm Drainage Facilities in the County of Maui

B. Methodology: Rational Method

Recurrence Interval: 10-year, 1-hour rainfall (runoff rate)
50-year, 1-hour rainfall (runoff volume)

Drainage Area: 30 acres

Time of Concentration, Tc: Determined from Plate 1

Runoff Coefficient, C:

Existing Condition: C = 0.30 (unimproved)

New Condition: C = 0.50 (bare soil)

C. Runoff Rate

10 Year (1-Hour) Storm:

1. Existing Condition:

I_{10} = 2"

L = 1,600 Ft.

S = 2% (Poor Grass)

Tc = 27 min. (Plate 3)

i = 2.9 in./hr. (Plate 4)

Q = CiA

= 0.30 x 2.9 x 30 = 26.1 c.f.s.

2. New Condition (During Quarrying):

I_{10} = 2"

L = 1,600 Ft.

S = 2% (Bare Soil)

Tc = 21 min. (Plate 3)

i = 3.2 in./hr. (Plate 4)

Q = CiA

= 0.50 x 3.2 x 30 = 48.0 c.f.s.

3. Increase of Runoff Rate During Active Quarry Operations for Each Incremental Area of 30 Acres:

Increase = 48.0 - 26.1

= 21.9 c.f.s. (10-Year, 1-Hour Storm)

D. Runoff Volume:

1. Existing Conditions:

Anticipated 50 Yr. (1-Hr.) Runoff

Volume = 53,548 c.f. (See attached Hydrograph 1)

2. Quarrying Conditions:

Anticipated 50 Yr. (1-Hr.) Runoff

Volume = 77,446 c.f. (See attached Hydrograph 2)

3. Therefore; 50 Year (1 Hour) Storm Volume Increase:

Volume Increase = 77,446 - 53,548

= 23,898 c.f.

4. Minimum Runoff Volume to be Retained Onsite

$$\frac{\text{Increase}}{\text{Acre}} = \frac{23{,}898}{30}$$

= 797 c.f. for each acre of grading area

Hydrograph Plot

Hydraflow Hydrographs by Intelisolve | Thursday, Oct 10 2024, 3:38 PM

Hyd. No. 1

Hawaiian Cement New Quarry (EXIST. CONDITION)

Hydrograph type	= Rational	Peak discharge	= 16.53 cfs
Storm frequency	= 50 yrs	Time interval	= 1 min
Drainage area	= 15.000 ac	Runoff coeff.	= 0.3
Intensity	= 3.673 in/hr	Tc by User	= 27.00 min
IDF Curve	= HAWAIIAN CEMENT NEW QUARRY.IDF	Asc/Rec limb fact	= 1/1

Hydrograph Volume = 26,774 cuft



Hydrograph Plot

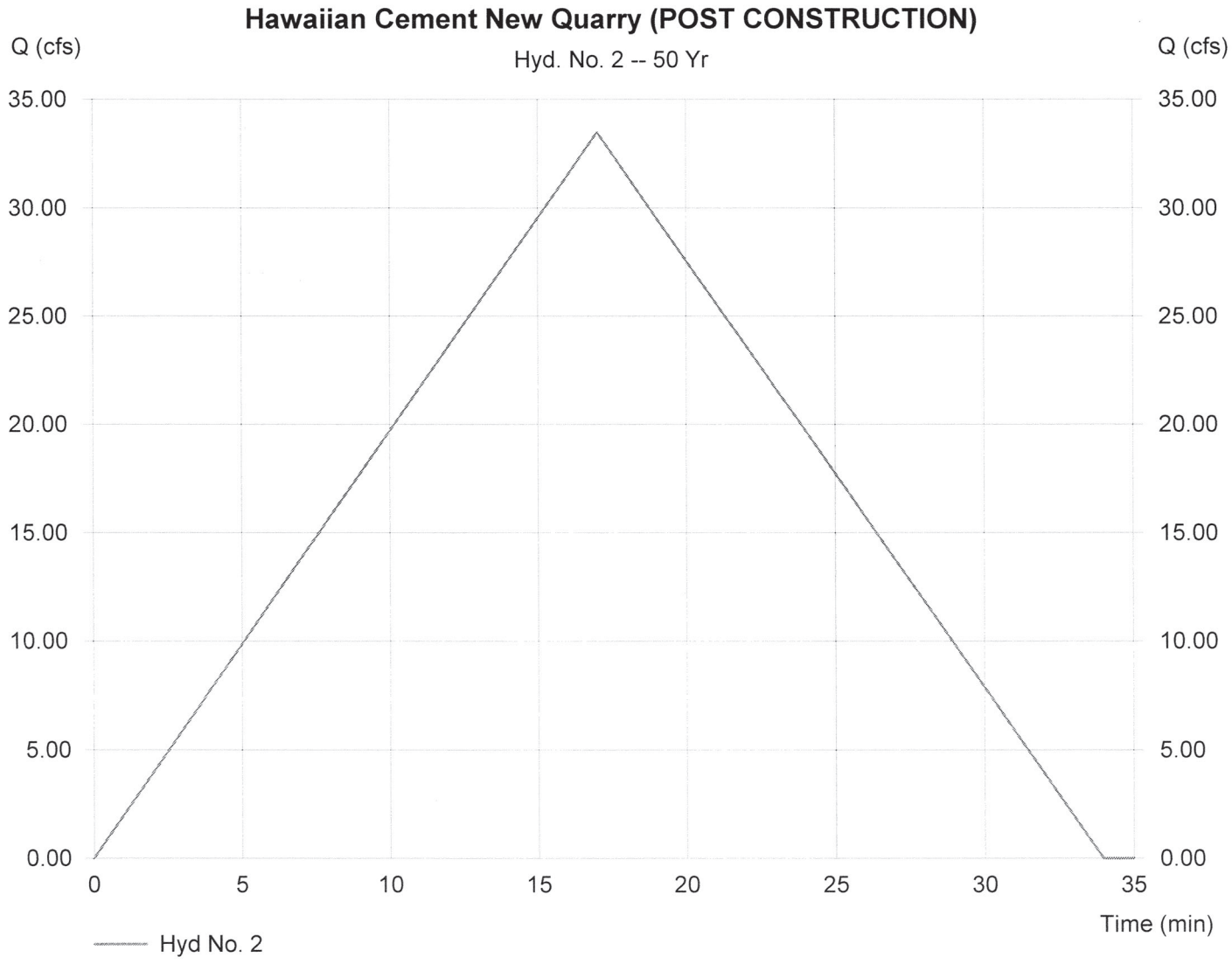
Hydraflow Hydrographs by Intelisolve | Thursday, Oct 10 2024, 3:39 PM

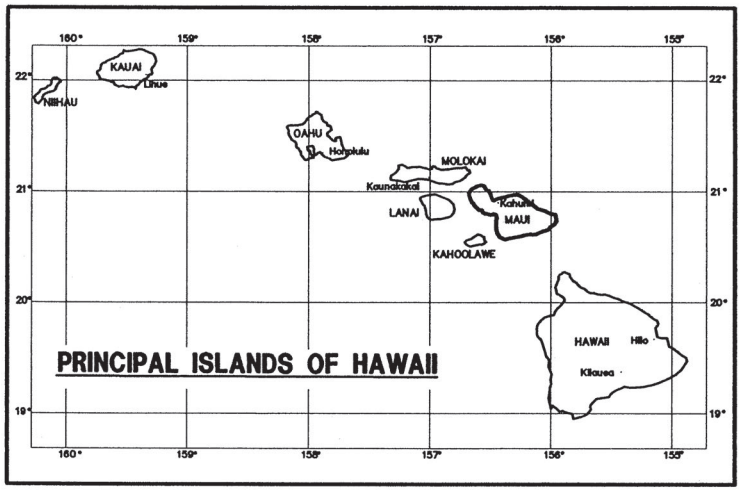
Hyd. No. 2

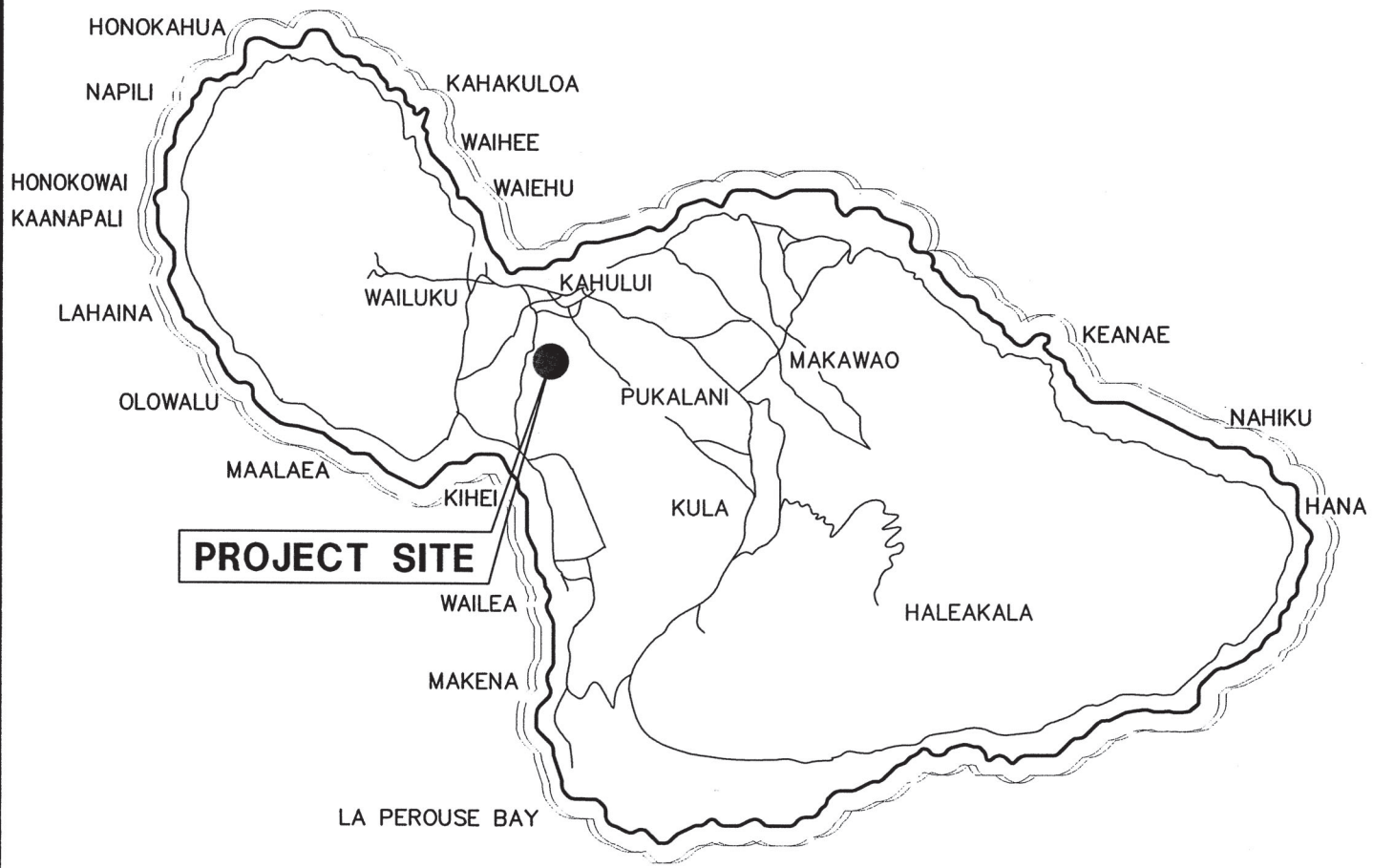
Hawaiian Cement New Quarry (POST CONSTRUCTION)

Hydrograph type	= Rational	Peak discharge	= 33.48 cfs
Storm frequency	= 50 yrs	Time interval	= 1 min
Drainage area	= 15.000 ac	Runoff coeff.	= 0.5
Intensity	= 4.464 in/hr	Tc by User	= 17.00 min
IDF Curve	= HAWAIIAN CEMENT NEW QUARRY.IDF	Asc/Rec limb fact	= 1/1

Hydrograph Volume = 34,153 cuft







N

LOCATION MAP

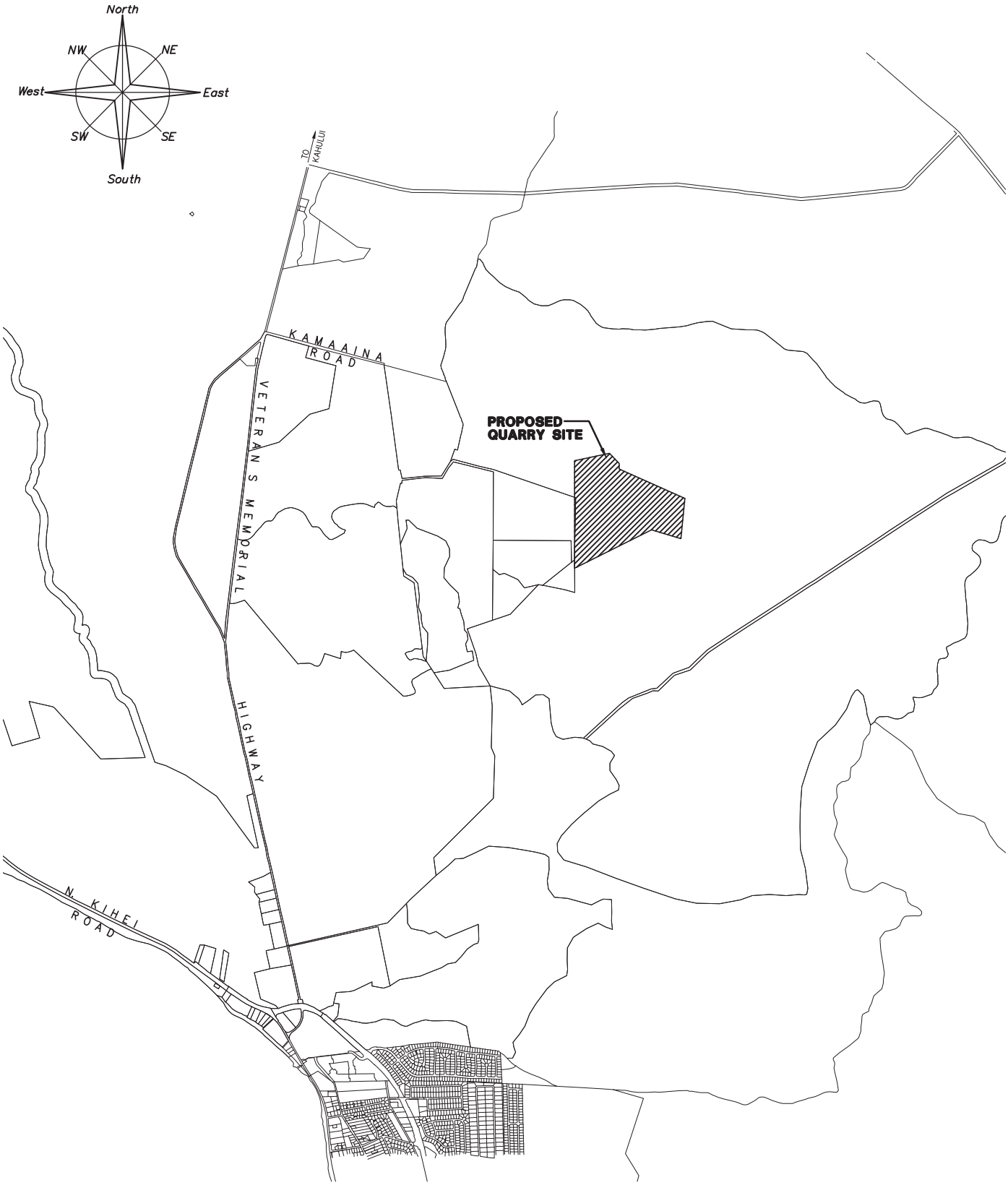
ISLAND OF MAUI

(Layout1)
Z:\DRAW1\2005\05-065\PROP-QUARRY-SITE-ADDITION-LOCATIONMAP.dwg 22-OCT-2012 : Revised BY:Nancy

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS – CIVIL & STRUCTURAL ENGINEERS

JOB NO. 05-065
FIGURE 1



VICINITY MAP

NOT TO SCALE

Tax Map Key (2) 3-8-04: 01 (Portion)

OCTOBER 2024

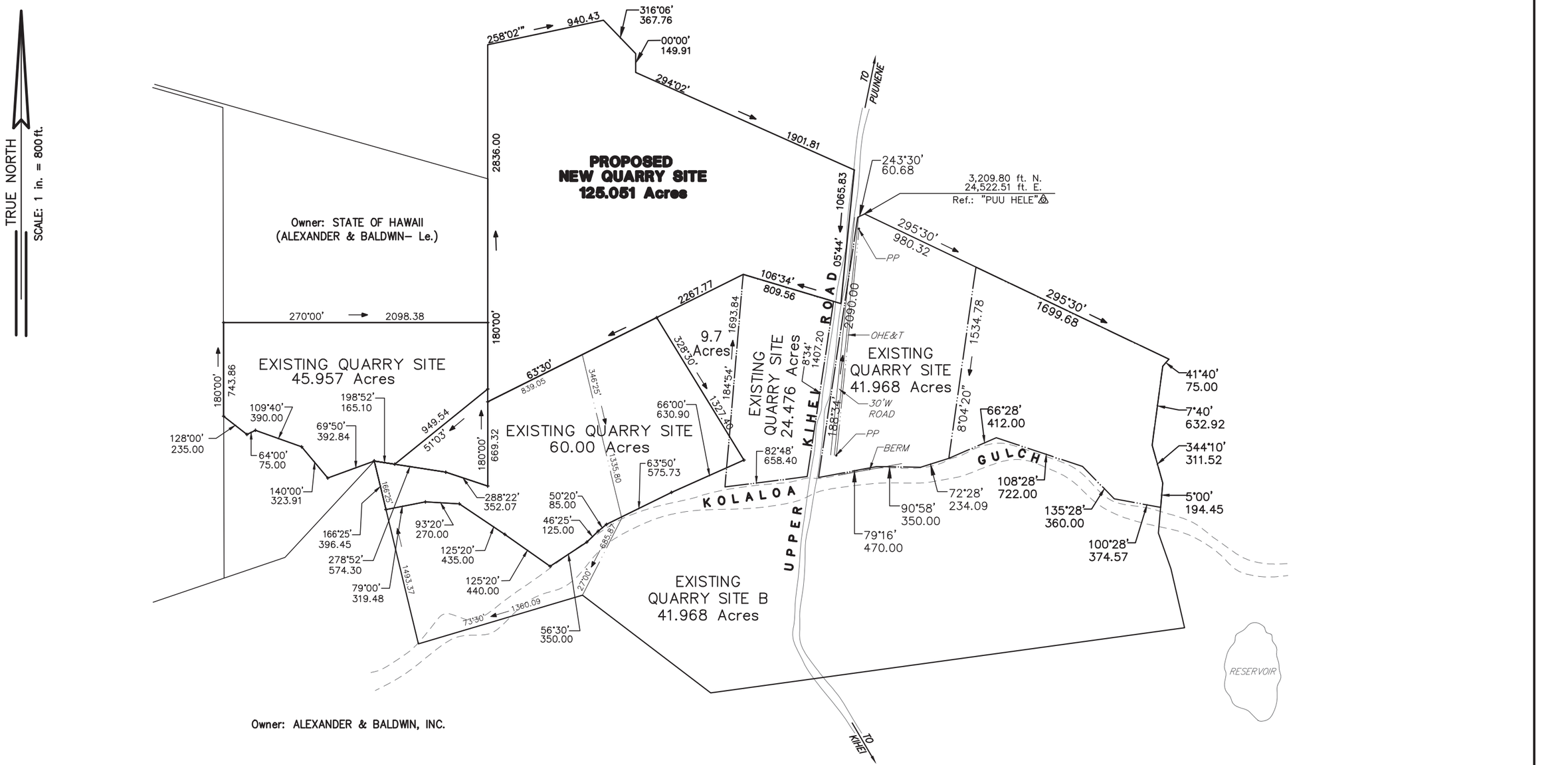
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JOB NO. 24-021

FIGURE 2

W:\2024\24-021\PROP-QUARRY-SITE-ADDITION-VICINITYMAP.dwg, Layout1 (2), 10/15/2024 4:00:39 PM (Layout1)
Z:\DRAW1\2005\05-065\PROP-QUARRY-SITE-ADDITION-VICINITYMAP.dwg 05-OCT-2012 : Revised BY:Nancy



PLAN SHOWING NEW HAWAIIAN CEMENT QUARRY MINING SITE

AT PULEHUNUI, WAILUKU (KULA), MAUI, HAWAII

800 400 0 800 1600
GRAPHIC SCALE IN FEET

Prepared for:
HAWAIIAN CEMENT
P.O. BOX 488
KAHULUI, HAWAII 96733

Tax Map Key (2) 3–8–04: 01 (Portion)

FIGURE 3

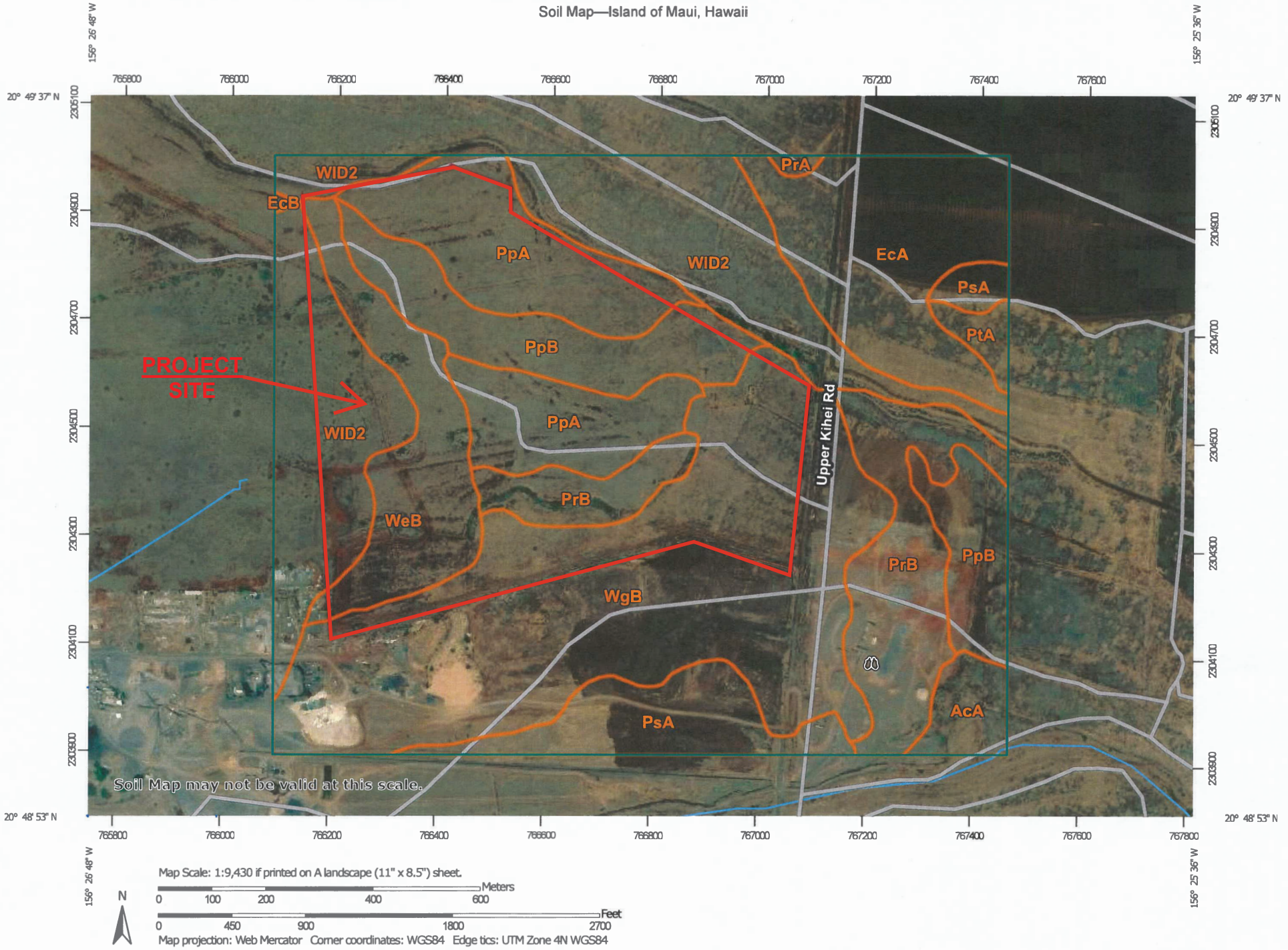
OCTOBER 2024
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W:\2024\24-021\6-5-12_HCMNT_QUARRY_SITE.dwg, Layout1, 10/15/2024 4:10:24 PM

Soil Map—Island of Maui, Hawaii



Map Scale: 1:9,430 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 4N WGS84

FIGURE 4

USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

10/10/2024
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Island of Maui, Hawaii
Survey Area Data: Version 22, Sep 11, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 29, 2017—Oct 11, 2020

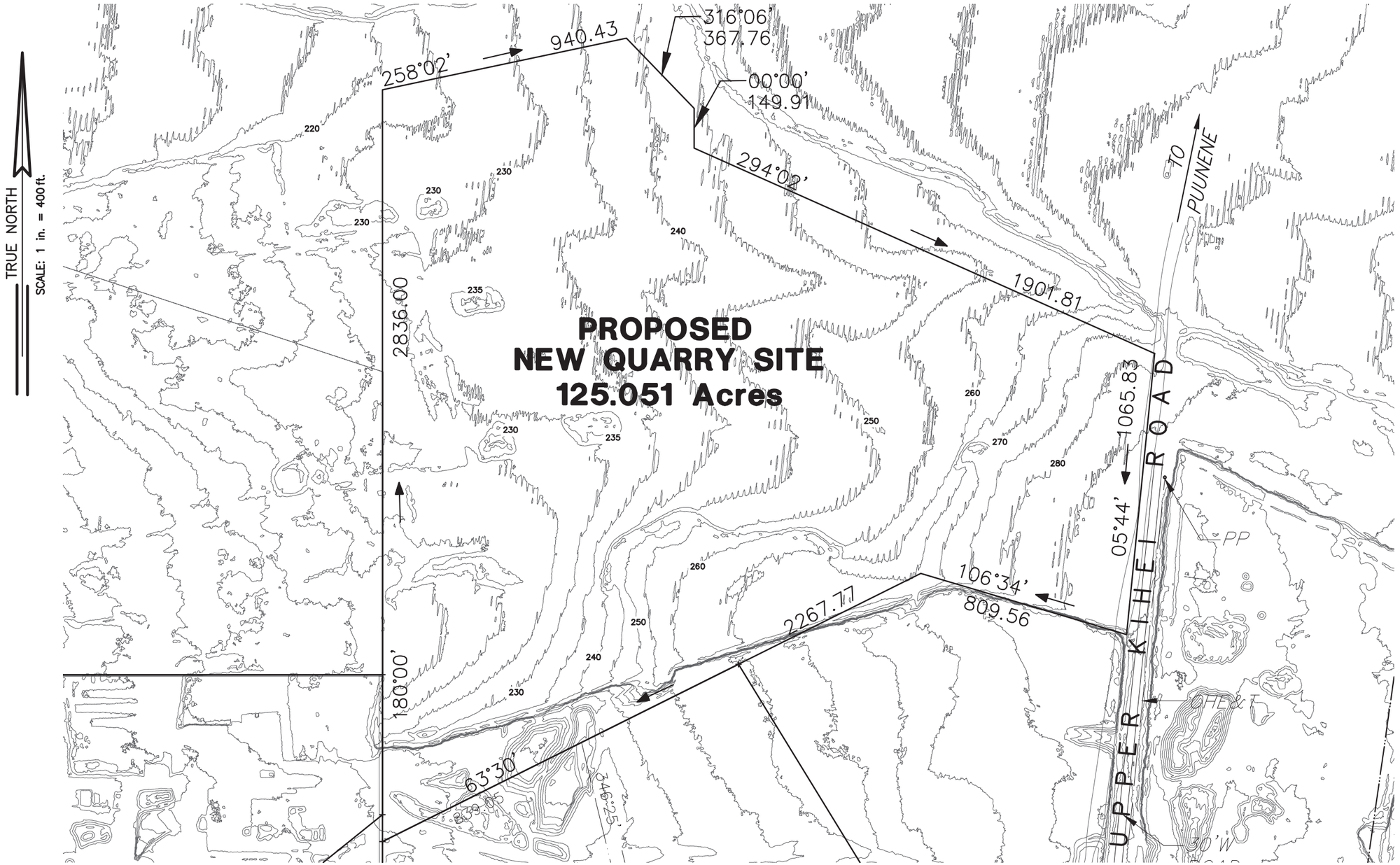
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

FIGURE 4

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AcA	Alae cobbly sandy loam, 0 to 3 percent slopes, MLRA 158	6.4	1.7%
EcA	Ewa cobbly silty clay loam, 0 to 3 percent slopes, MLRA 158	35.7	9.5%
EcB	Ewa cobbly silty clay loam, 3 to 7 percent slopes, MLRA 163	0.2	0.1%
PpA	Pulehu silt loam, 0 to 3 percent slopes	42.0	11.1%
PpB	Pulehu silt loam, 3 to 7 percent slopes	33.2	8.8%
PrA	Pulehu cobbly silt loam, 0 to 3 percent slopes	0.7	0.2%
PrB	Pulehu cobbly silt loam, 3 to 7 percent slopes	35.5	9.4%
PsA	Pulehu clay loam, 0 to 3 percent slopes , MLRA 163	20.6	5.5%
PtA	Pulehu cobbly clay loam, 0 to 3 percent slopes	3.0	0.8%
WeB	Waiakoa silty clay loam, 3 to 7 percent slopes	25.2	6.7%
WgB	Waiakoa very stony silty clay loam, 3 to 7 percent slopes, MLRA 158	106.1	28.1%
WID2	Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded, MLRA 157	68.3	18.1%
Totals for Area of Interest		**377.1**	**100.0%**

FIGURE 4



EXISTING TOPOGRAPHY MAP

SCALE: 1 in. = 400 ft.

400 200 0 400 800

GRAPHIC SCALE IN FEET

Tax Map Key (2) 3-8-04: 01 (Portion)

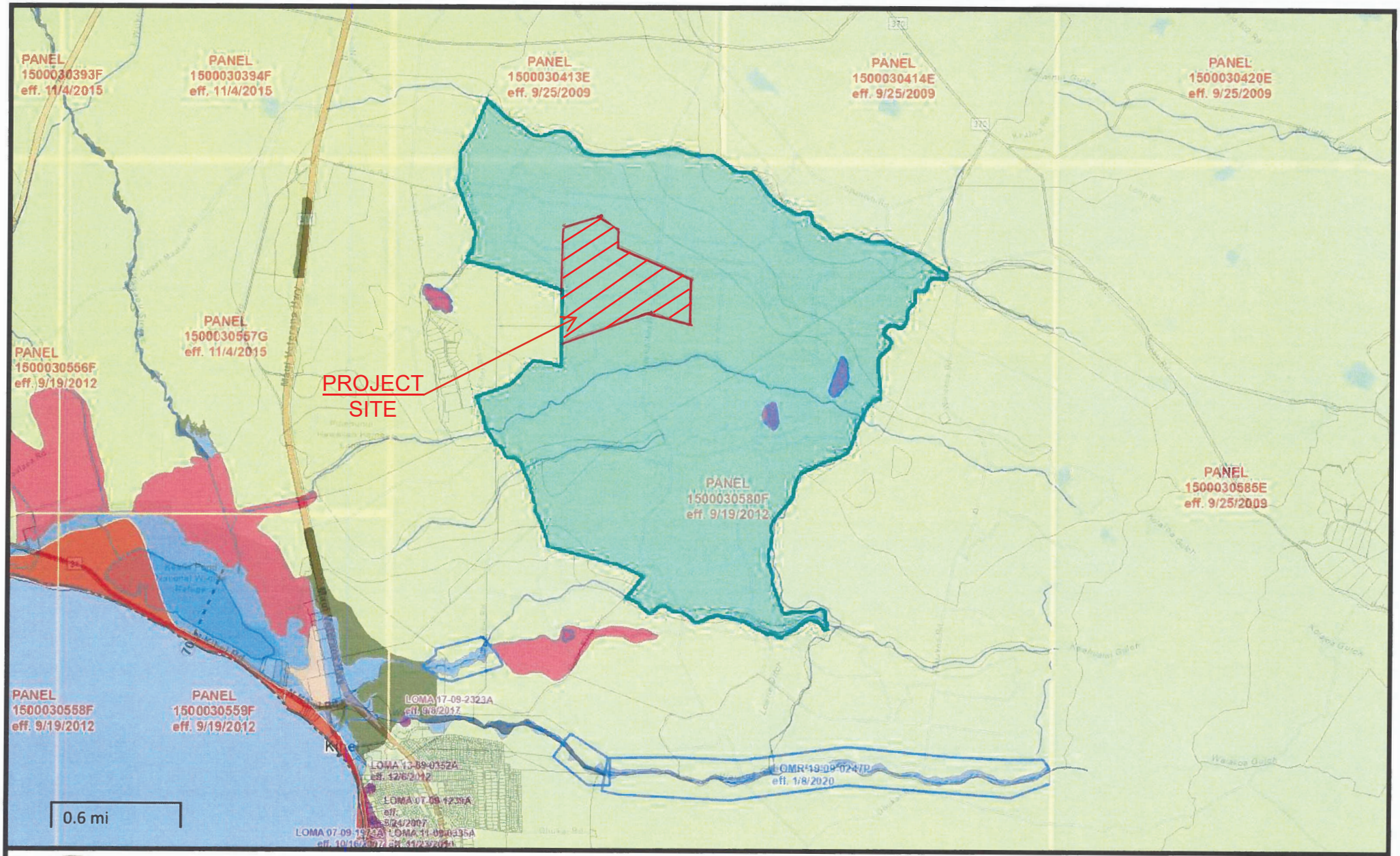
FIGURE 5

871 KOLU STREET, SUITE 201
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JOB NO. 24-021

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Flood Hazard Map

Title:

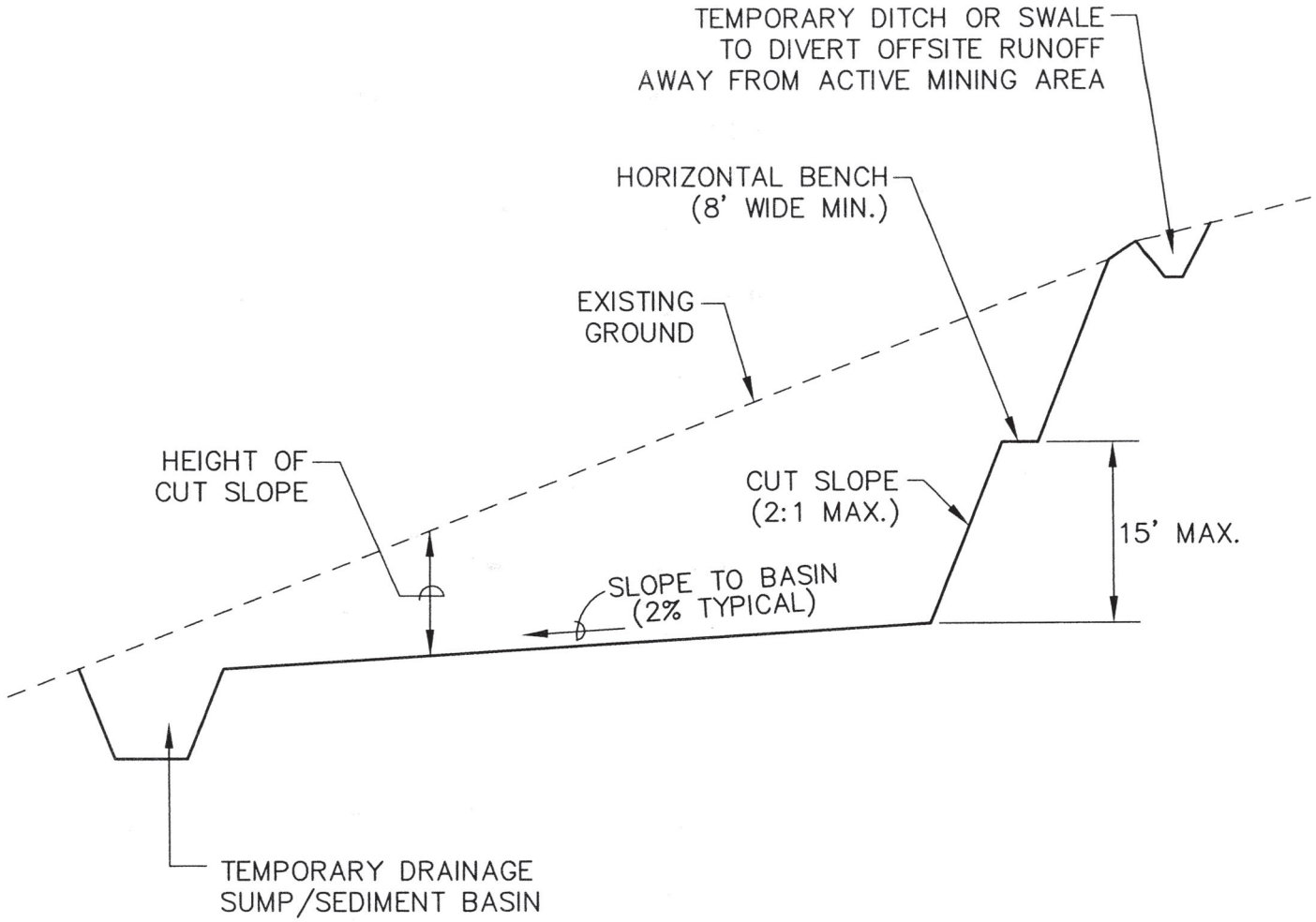
Notes:

Map generated on 10/09/2024

Map Legend

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

FIGURE 6



TYPICAL CUT SECTION

NOT TO SCALE

(Layout1)
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Tax Map Key (2) 3-8-04: 01 (Portion)

OCTOBER 2012

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

JOB NO. 05-065

FIGURE 7

COUNTY SPECIAL USE PERMIT COMPLIANCE REPORT

E

MUNEKIYO HIRAGA
Planning. Project Management. Sustainable Solutions.

Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

June 13, 2025

Ana Lilis, Deputy Director
County of Maui
Department of Planning
2200 Main Street, Suite 315
Wailuku, Hawai'i 96793

SUBJECT: County Special Use Permit for the Hawaiian Cement Pu'unēnē Quarry; Pūlehunui, Kahului, Maui; TMK (2)3-8-004:001(por.); CUP 2006/0002

Dear Ms. Lilis:

At its regularly scheduled meeting on May 24, 2022, the Maui Planning Commission (Commission) approved an amendment request for the County Special Use Permit (CUP) (CUP 2006/0002) for the Hawaiian Cement Pu'unēnē Quarry at Pūlehunui, Kahului, Hawai'i. The Commission's approval was subject to eight (8) conditions. See **Exhibit "A"**.

Condition Number 5 of the 2014 CUP time extension approval recommended:

> *That the Applicant shall submit to the Department two (2) copies of a detailed report addressing its compliance with the conditions established with the County Special Use Permit CUP 2006/0002 and the State Land Use Commission Special Permit SP 92-380. The compliance report shall be submitted to the Department for review and approval prior to a time extension request or an amendment to the existing County Special Use Permit.*

On behalf of Hawaiian Cement, we are submitting this compliance report in order to fulfill Condition Number 5 of the CUP time extension approval. We note that an earlier compliance report was submitted in 2022.

Condition Number 1:

That the County Special Use Permit shall be valid until July 21, 2032 or the expiration date for the State Land Use Commission Special Permit, whichever is longer, subject to extension by the Planning Director upon a timely request for extension filed at least ninety (90) days prior to its expiration. The Commission may require a public hearing on the time extension.

Response: The Applicant acknowledges this condition. Future time extension requests, if needed, will be submitted in a timely manner as noted in this condition.

Condition Number 2:

That the County Special Use Permit shall not be transferred without the prior written approval of the Planning Director.

Response: The Applicant acknowledges this condition and notes that a transfer of permit is not contemplated.

Condition Number 3:

That the Applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject County Special Use Permit and shall procure at its own cost and expense, and shall maintain during the entire period of this County Special Use Permit, a policy or policies of comprehensive liability insurance in the minimum amount of ONE MILLION AND N0/100 DOLLARS (1,000,000.00) naming the County of Maui as an additional named insured, insuring and defending the Applicant and County of Maui against any and all claims or demands for property damage, personal injury and/or death arising out of this permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by the applicant of said rights; and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the non-observance or non-performance of any of the terms and conditions of this permit. A copy of a policy naming County of Maui as an additional named insured shall be submitted to the Department of Planning (Department) within ninety (90) calendar days from the date of transmittal of the decision and order.

Response: The Applicant acknowledges this condition. A current Certificate of Insurance is provided herein as **Exhibit "B"**.

Condition Number 4:

That full compliance with all applicable governmental requirements shall be rendered.

Response: The Applicant acknowledges this condition.

Condition Number 5:

That the Applicant shall submit to the Department two (2) copies of a detailed report addressing its compliance with the conditions established with the County Special Use Permit CUP 2006/0002 and State Land Use Commission Special Permit SP 92-380. The compliance report shall be submitted to the Department for review and approval prior to a time extension request or an amendment to the existing County Special Use Permit.

Response: The Applicant acknowledges this condition and notes that this report addresses compliance with the CUP conditions. As previously noted, a compliance report for the CUP was also submitted in 2022. A report addressing compliance with the State Land Use Commission Special Permit was most recently submitted on September 30, 2024 to the State Land Use Commission and Department of Planning. See **Exhibit "C"**.

Condition Number 6:

That the quarry area is expanded by approximately 42 acres and includes the 9.697-acre portion of the quarry within the permitted area, known as Area "C".

Response: The Applicant acknowledges this condition relative to a previously approved expansion of the quarry area. It is noted in the concurrently submitted amendment application that the Applicant proposes to remove all previously approved quarry areas on TMK (2)3-8-004:001, and to replace them with a proposed new quarry area on a different approximately 125-acre portion of the same parcel.

Condition Number 7:

That the quarry area is expanded by approximately 45.4 acres at TMK: (2) 3-8-004:001(por.).

Response: The Applicant acknowledges the approval of the amended area that was approved for the CUP. However, as previously noted, a new amendment application has been prepared to remove said 45.4 acre portion of the permitted quarry area as well as all previously approved permitted quarry area from the CUP. The Applicant is requesting the new amendment to permit a new area on the same TMK parcel.

Condition Number 8:

That the Applicant comply with the reclamation plan identified as "Exhibit 15" of the staff report and to stabilize the soil after the use is complete. (Exhibit 15 attached)

Response: As previously noted, the Applicant is proposing to withdraw the CUP permit from the 45.4-acre portion that was approved by the MPC in 2022. The owner of the 45.4-acre portion had changed and the new owner will be ending the Applicant's lease for the property in January 2027. The Applicant will comply with the reclamation plan for the existing quarry area.

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233, or Karlynn Fukuda at (808) 244-2015 or via email at planning@munekiyohiraga.com.

Very truly yours,



Finn Gibson
Analyst

FG:de
Attachments
cc: Dave Gomes, Hawaiian Cement (w/attachments)
K:\DATA\HawnCemt\PuuneneSupplQuarry\Apps\CUP Compliance Report\CUP Compliance Report.docx

List of Exhibits

Exhibit A. County Special Use Permit Amendment Approval Letter Dated June 23, 2022

Exhibit B. Certificate of Insurance

Exhibit C. 2024 State Special Use Permit Annual Compliance Report

EXHIBIT A.

County Special Use Permit Amendment Approval Letter Dated June 23, 2022

MICHAEL P. VICTORINO
Mayor

MICHELE CHOUTEAU MCLEAN, AICP
Director

JORDAN E. HART
Deputy Director

JUN 29 2022

DEPARTMENT OF PLANNING
COUNTY OF MAUI
ONE MAIN PLAZA
2200 MAIN STREET, SUITE 315
WAILUKU, MAUI, HAWAII 96793

June 23, 2022

Ms. Karlynn Fukuda, Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: AMENDMENTS TO STATE LAND USE COMMISSION SPECIAL PERMIT AND COUNTY SPECIAL USE PERMIT FOR THE HAWAIIAN CEMENT PUUNENE ROCK QUARRY, PULEHUNUI, KAHULUI, ISLAND OF MAUI, HAWAII; TMK: (2) 3-8-004:001 (POR.) (SUP1 91-0013) (SP 92-380) (CUP 2006/0002)

At its regular meeting on May 24, 2022, the Maui Planning Commission (Commission) approved amendments to both the State Special Permit (SP 92-380) and County Special Use Permit (CUP 2006/0002) subject to their existing conditions. Added were the following underlined conditions to both permits (see 7 and 8):

1. That the County Special Use Permit shall be valid until July 21, 2032, or the expiration date for the State Land Use Commission Special Permit, whichever is longer, subject to extension by the Planning Director (Director) upon a timely request for extension filed at least 90 days prior to its expiration. The Commission may require a public hearing on the time extension.

2. That the County Special Use Permit shall not be transferred without the prior written approval of the Director.

3. That the Applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject County Special Use Permit and shall procure at its own cost and expense, and shall maintain during the entire period of this County Special Use Permit, a policy or policies of comprehensive liability insurance in the minimum amount of

ONE MILLION AND NO/100 DOLLARS (1,000,000.00) naming the County of Maui (County) as an additional named insured, insuring and defending the Applicant and County against any and all claims or demands for property damage, personal injury and/or death arising out of this permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by the Applicant of said rights; and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the non-observance or non-performance of any of the terms and conditions of this permit. A copy of a policy naming the County as an additional named insured shall be submitted to the Department of Planning (Department) within 90 calendar days from the date of transmittal of the decision and order.

4. That full compliance with all applicable governmental requirements shall be rendered.

5. That the Applicant shall submit to the Department two copies of a detailed report addressing its compliance with the conditions established with the County Special Use Permit CUP 2006/0002 and State Land Use Commission Special Permit SP 92-380. The compliance report shall be submitted to the Department for review and approval prior to a time extension request or an amendment to the existing County Special Use Permit.

6. That the quarry area is expanded by approximately 42 acres and includes the 9.697-acre portion of the quarry within the permitted area, known as Area "C".

7. That the quarry area is expanded by approximately by 45.4 acres at TMK: (2) 3-8-004:001 (por.);

8. That the Applicant comply with the reclamation plan identified as "Exhibit 15" of the staff report and to stabilize the soil after the use is complete. (Exhibit 15 attached)

The Commission has adopted the Department's Report and Recommendation as its Findings of Fact, Conclusions of Law, and Decision and Order will forward the approval of SP 92-380 to the State Land Use Commission for further action.

If additional clarification is required, please contact Staff Planner Paul Fasi at paul.fasi@mauicounty.gov or at (808) 270-7814.

Sincerely,

MICHELE MCLEAN, AICP
Planning Director

xc: Ann Cua, Planning Program Administrator (PDF)
Paul F. Fasi, Staff Planner (PDF)
State Land Use Commission
Project File

MCM:PFF:rma
K:\WP_DOCS\PLANNING\CUP\2006\0002_Hawaiian Cement (Puunene)\2021 Amendment\MPCappvl2.doc

EXHIBIT B.

Certificate of Insurance

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 01/08/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
MARSH USA LLC
333 South 7th Street, Suite 1400
Minneapolis, MN 55402-2400

CN103060364-HAWAC-GAWX-25- 2010 2037 HAWCE AI Y

INSURED
HAWAIIAN CEMENT
99-1300 HALAWA VALLEY STREET
AIEA, HI 96701

CONTACT NAME: Marsh | U.S. Operations & Technology
PHONE (A/C, No, Ext): 866-966-4664 **FAX (A/C, No):** 212-948-5382
E-MAIL ADDRESS: Minneapolis.CertRequest@marsh.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Liberty Mutual Fire Ins Co	23035
INSURER B : Berkshire Hathaway Specialty Insurance	22276
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** CHI-010368719-71 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:			TB2641446115025	01/01/2025	01/01/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 5,000,000 $ 1,000,000 $ 10,000 $ 5,000,000 $ 5,000,000 $ 5,000,000
A	**AUTOMOBILE LIABILITY** X ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [ ] HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY			AS2641446115035	01/01/2025	01/01/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 5,000,000 $ $ $
B	[ ] **UMBRELLA LIAB** [X] OCCUR X **EXCESS LIAB** [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			47XSF32875102	01/01/2025	01/01/2026	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
A A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [N] **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WA264D446115365 (AOS) WC2641446115065 (MN)	01/01/2025 01/01/2025	01/01/2026 01/01/2026	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: Puunene Quarry and the TMKs (TMK 3-8-004: 001 and 002; TMKs 3-8-008: 001 and 031)

County of Maui and the State of Hawaii are included as an additional insured as required by permits SP92-380, SUP1 91/0013 and CUP 2006/0002 as respects the General Liability and Auto Liability. Blanket Additional Insured for General Liability is included where required by written contract and does not include professional liability coverage. Blanket Additional Insured for Automobile Liability is included where required by written contract. Excess liability applies to general liability, products and completed operations, automobile liability, and employers liability.

CERTIFICATE HOLDER

County of Maui
Department of Planning
200 S. High Street
Wailuku, Maui, HI 96793

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE of Marsh USA LLC

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED INSURED FOR COVERED AUTOS LIABILITY COVERAGE

This endorsement modifies insurance provided under the following:

AUTO DEALERS COVERAGE FORM
BUSINESS AUTO COVERAGE FORM
MOTOR CARRIER COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

This endorsement identifies person(s) or organization(s) who are "insureds" for Covered Autos Liability Coverage under the Who Is An Insured provision of the Coverage Form. This endorsement does not alter coverage provided in the Coverage Form.

SCHEDULE

Name Of Person(s) Or Organization(s):
Any person or organization where the named insured has agreed by written contract to include such person or organization as a designated insured.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

Each person or organization shown in the Schedule is an "insured" for Covered Autos Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in Paragraph **A.1.** of Section **II** - Covered Autos Liability Coverage in the Business Auto and Motor Carrier Coverage Forms and Paragraph **D.2.** of Section **I** - Covered Autos Coverages of the Auto Dealers Coverage Form.

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Policy Number: AS2-641-446115-035
Issued By: Liberty Mutual Fire Insurance Co.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NOTICE OF CANCELLATION TO THIRD PARTIES

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
MOTOR CARRIER COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
EXCESS AUTOMOBILE LIABILITY INDEMNITY COVERAGE PART
SELF-INSURED TRUCKER EXCESS LIABILITY COVERAGE PART
COMMERCIAL GENERAL LIABILITY COVERAGE PART
EXCESS COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART

Schedule		
Name of Other Person(s)/ Organization(s):	**Email Address or mailing address:**	**Number Days Notice:**
Per schedule of certificate holders on file with the company	Per schedule of certificate holder on file with the company	90

A. If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule above. We will send notice to the email or mailing address listed above at least 10 days, or the number of days listed above, if any, before the cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

All other terms and conditions of this policy remain unchanged.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

Schedule

Name Of Additional Insured Person(s) Or Organization(s):	**Location(s) Of Covered Operations**
Any person or organization for whom you have agreed in a written contract or agreement, prior to an "occurrence" or offense, that such person or organization be added as an additional insured to your policy.	All locations as required by a written contract or agreement entered into prior to an "occurrence" or offense.

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

A. **Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

Schedule

Name Of Additional Insured Person(s) Or Organization(s):	**Location And Description Of Completed Operations**
Any person or organization for whom you have agreed in a written contract or agreement, prior to an "occurrence" or offense, that such person or organization be added as an additional insured to your policy.	All locations as required by a written contract or agreement entered into prior to an "occurrence" or offense.

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

 © Insurance Services Office, Inc., 2018

Policy Number TB2-641-446115-025
Issued by Liberty Mutual Fire Insurance Co.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NOTICE OF CANCELLATION TO THIRD PARTIES

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
MOTOR CARRIER COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
EXCESS AUTOMOBILE LIABILITY INDEMNITY COVERAGE PART
SELF-INSURED TRUCKER EXCESS LIABILITY COVERAGE PART
COMMERCIAL GENERAL LIABILITY COVERAGE PART
EXCESS COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART

A. If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule of this endorsement. We will send notice to the email or mailing address listed above at least 10 days, or the number of days listed above, if any, before the cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

All other terms and conditions of this policy remain unchanged.

Schedule

Name of Other Person(s) / Organization(s):	**Email Address or mailing address:**	**Number Days Notice:**
"Per Schedule On File With The Company"	"Per Schedule On File With The Company"	90

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NOTICE OF CANCELLATION TO THIRD PARTIES

A. If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule below. We will send notice to the email or mailing address listed below at least 10 days, or the number of days listed below, if any, before cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

Schedule

Name of Other Person(s) / Organization(s):	Email Address or mailing address:	Number Days Notice:
Schedule on file with the Company	Schedule on file with the Company	90

All other terms and conditions of this policy remain unchanged.

Issued by Liberty Mutual Fire Insurance Company 16586

For attachment to Policy No. WA2-64D-446115-365 Effective Date Premium $

Issued to Knife River Corporation Endorsement No.

© 2016 Liberty Mutual Insurance

NOTICE OF CANCELLATION TO THIRD PARTIES

A. If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule below. We will send notice to the email or mailing address listed below at least 10 days, or the number of days listed below, if any, before cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

Schedule

Name of Other Person(s) / Organization(s):	Email Address or mailing address:	Number Days Notice:
Schedule on file with the Company	Schedule on file with the Company	90

All other terms and conditions of this policy remain unchanged.

Issued by Liberty Mutual Fire Insurance Company 16586

For attachment to Policy No. WC2-641-446115-065 Effective Date Premium $

Issued to Knife River Corporation Endorsement No.

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EXHIBIT C.

2024 STATE SPECIAL USE PERMIT ANNUAL REPORT

MUNEKIYO HIRAGA
Planning. Project Management. Sustainable Solutions.

Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

September 30, 2024

Via email to: dbedt.luc.web@hawaii.gov

Dan Giovanni, Chair
State of Hawai'i
State Land Use Commission
P.O. Box 2359
Honolulu, Hawai'i 96804

Via email to: Danny.Dias@co.maui.hi.us, currentdivision@mauicounty.gov; and planning@mauicounty.gov

Kate Blystone, Director
County of Maui
Department of Planning
Attention: Danny Dias, Planner
2200 Main Street, Suite 315
Wailuku, Hawai'i 96793

SUBJECT: State Special Use Permit Annual Compliance Report for Hawaiian Cement Pu'unēnē Quarry, TMK: (2)3-8-004:001(por.), and 002(por.), (2)3-8-008:001(por.) and 031(por.), Pulehunui, Maui, Hawai'i (SP 92-380) (SUP1 91-0013)

Dear Mr. Giovanni and Ms. Blystone:

The State Land Use Commission (SLUC) at a regularly scheduled meeting on November 20, 2014, voted to approve a time extension request and amendments to the existing SLUC Special Permit (SUP) (SP92-380) for Hawaiian Cement's (Permittee) Pu'unēnē Quarry. The SUP time extension and amendment was granted through July 21, 2032. The approval was subject to 11 conditions. See **Exhibit "A"**.

Condition Number 11 of the SUP approval stated:

> *"An annual progress report shall be submitted to the Planning Director and the State Land Use Commission prior to the anniversary date of the approval of the permit. The report shall include, but not be limited to, the status of the development and to what extent the conditions of approval are being complied with. This condition shall remain in effect until all conditions*

of approval have been complied with and the Planning Director acknowledges that further reports are not required."

On behalf of Hawaiian Cement, we are submitting this compliance report to meet Condition No. 11 of the SUP. No changes in the operations have occurred since 2013. However, we note that Hawaiian Cement has filed an application with the County of Maui, Department of Planning (Department) to amend the SUP to account for a planned expansion area. The application and request are currently in process by the Department and is awaiting scheduling before the Maui Planning Commission.

Condition No. 1:

That the State Land Use Commission Special Use Permit shall be valid to July 21, 2032, subject to further extensions by the Land Use Commission upon a timely request for extension filed at least one-hundred twenty (120) days prior to its expiration. The appropriate Planning Commission shall make a recommendation to the Land Use Commission and may require a public hearing on the time extension.

Response: The permittee concurs with the condition and understands that the SUP for the Puʻunēnē Quarry would expire in July 2032. No time extension is being sought at this time.

Condition No. 2:

That the conditions of this Land Use Commission Special Use Permit shall be enforced pursuant to Sections 205-12 and 205-13, Hawaii Revised Statutes. Failure to comply with one or more of the conditions herein shall result in a notice of violation issued by the appropriate enforcement agency, notifying the permit holder of the violation and providing the permit holder no more than sixty (60) days to cure the violation. If the permit holder fails to cure the violation within sixty (60) days of said notice, the appropriate enforcement agency shall issue an order which may require one or more of the following: that the violative activity cease; that the violative development be removed; that a civil fine be paid not to exceed ONE THOUSAND AND NO/100 DOLLARS ($1,000.00) per violation; that a civil fine not to exceed FIVE THOUSAND AND NO/100 DOLLARS ($5,000.00) shall be issued if violation not cured within six months of the issuance of the order. The order shall become final thirty (30) days after the date of its mailing or hand-delivery unless written request for a hearing is mailed or delivered to the planning department within said

(30) days. Upon receipt of a request for a hearing, the Planning Department shall specify a time and place for the permit holder to appear and be heard. The hearing shall be conducted by the Planning Director or the Director's designee in accordance with the provisions of Chapter 91, HRS, as amended.

Response: The permittee understands the requirements of this condition.

Condition No. 3:

That the subject State Land Use Commission Special Use Permit shall not be transferred without the prior written approval of the Land Use Commission. The appropriate Planning Commission shall make a recommendation to the Land Use Commission. However, in the event that a contested case hearing preceded issuance of said State Land Use Commission Special Use Permit, a public hearing shall be held by the appropriate Planning Commission upon due published notice, including actual written notice to the last known addresses of parties to said contested case and their counsel.

Response: The permittee concurs with this condition. No permit transfer request is being sought for the SUP.

Condition No. 4:

That the applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject State Land Use Commission Special Use Permit and shall procure at its own cost and expense, and shall maintain during the entire period of this State Land Use Commission Special Use Permit, a policy or policies of comprehensive liability insurance in the minimum amount of ONE MILLION AND NO/100 DOLLARS ($1,000,000.00) naming the County of Maui and State of Hawaii as an additional named insured, insuring and defending the applicant, County of Maui and State of Hawaii against any and all claims or demands for property damage, personal injury and/or death arising out of this permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by the applicant of said rights; and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the nonobservance or nonperformance of any of the terms

and conditions of this permit. A copy of a policy naming County of Maui as an additional named insured shall be submitted to the Department within ninety (90) calendar days from the date of transmittal of the decision and order.

Response: Please find attached, as **Exhibit "B"**, a current Certificate of Insurance for the Puʻunēnē Quarry, naming the State of Hawaiʻi as an additional insured.

Condition No. 5:

That full compliance with all applicable governmental requirements shall be rendered.

Response: The permittee understands and complies with this condition.

Condition No. 6:

That a restoration plan be submitted, showing upon termination of operations, depleted and excavated areas shall be graded to blend with the surrounding natural contours and that appropriate vegetative cover consisting of trees, shrubs, and ground cover shall be established.

Response: The permittee understands this condition. A restoration plan, approved by the landowner, has previously been submitted to the SLUC and has been complied with upon termination of previously quarried areas. It is noted that the restoration plan has been amended per the agreement with the Applicant and landowner (see Section 1.2). A copy of the currently approved restoration plan is included as **Exhibit "C"**.

Condition No. 7:

That a detailed drainage plan be submitted to the Department of Public Works and Department of Transportation for their review and approval.

Response: A detailed drainage plan was submitted and approved by the Department of Public Works (DPW). Said plan approvals have been previously submitted by the permittee.

Condition No. 8:

That a detailed solid waste management plan be submitted to the Public Works for their review and approval.

Response: A solid waste management plan was submitted to the DPW for their review and approval. Said plan approval has been previously submitted by the permittee.

Condition No. 9:

That a regular maintenance program for the access road be submitted to Department of Transportation Highways Division and Department of Public Works for review and approval to ensure that loose aggregate, which may have fallen from trucks coming from the quarry site, shall be removed.

Response: A maintenance program was prepared for the access road and was submitted to the State of Hawai'i, Department of Transportation (SDOT), Highways Division and DPW for review and approval. The SDOT approved said plan. See **Exhibit "D"**. Additionally, the maintenance plan has been submitted to the DPW for review and approval, and their approval is pending.

Condition No. 10:

That the applicant shall continue to comply with air pollution control and all other permits for rock crushing, asphalt batching, and all other operations, including the restoration of the site.

Response: The permittee understands this condition and is continuing to comply with air pollution control and other related permits for the quarry operation. Copies of the Covered Source Permit (which expired on April 19, 2016) and an acceptance letter from the Department of Health (DOH) for a renewal application are attached as **Exhibit "E"**.

Condition No. 11:

An annual progress report shall be submitted to the Planning Director and the State Land Use Commission prior to the anniversary date of the approval of the permit. The report shall include, but not be limited to the status of the development and to what extent the conditions of

approval are being complied with. This condition shall remain in effect until all of the conditions of approval have been complied with and the Planning Director acknowledges that further reports are not required.

Response: This report is being submitted to satisfy this condition for 2024. To date, approximately 81 percent of the acres in the permitted area have been quarried for use.

Condition No. 12:

That prior to commencement of quarry operations into the Expansion Areas, the applicant shall provide evidence of approval from the State Department of Transportation regarding a maintenance program for the driveway and surrounding roadway.

Response: As previously noted in the response to Condition No. 9, the SDOT has approved the roadway maintenance program for the Puʻunēnē Quarry. Refer to **Exhibit "D"**.

Condition No. 13:

That prior to commencement of quarry operations into the Expansion Areas, the applicant shall provide evidence of approval from the State Department of Health regarding modifications to the Clean Air Branch permit.

Response: The permittee understands this condition. As noted, a Covered Source Permit renewal application has been filed and accepted by the DOH. Refer to **Exhibit "E"**.

Condition No. 14:

That prior to commencement of quarry operations into the Expansion Areas, the applicant shall submit an archaeological inventory survey to the State Historic Preservation Division for their review; and shall comply with their subsequent comments.

Response: The permittee had an Archaeological Assessment report prepared for the previously approved expansion area at the Puʻunēnē Quarry. Due to the negative findings of the survey, an assessment report was prepared in lieu of an Archaeological Inventory Survey. The report was submitted to the State Historic Preservation Division (SHPD) for review and approval on

January 25, 2023. SHPD approved said report via letter dated June 22, 2023. See **Exhibit "F"**. The SHPD concurred that no further archaeological work is required for the site.

Condition No. 15:

That the new quarry operations shall be confined to the areas depicted on Exhibit 2 of the Planning Department staff report as "24.476 Acres" and "41.968 Acres" (attached as "Proposed Quarry Mining Site" map, dated July 7, 2005).

Response: The permittee understands this condition. New quarry activities are limited to the approved expansion area identified on the "Proposed Quarry Mining Site" map that was attached to the SLUC Decision and Order.

It is noted that a request to amend the SUP to add approximately 51.67 acres to the quarry operation was approved by the SLUC in December 2014. Additionally, the Applicant filed a request to amend the SUP to add additional areas for its quarry operation in February 2021. The amendment request is currently in process.

Condition No. 16:

That prior to commencement of quarry operations on Quarry Site "C," the Applicant shall submit an archaeological inventory survey of Quarry Site "C" to the State Historic Preservation Division for their review and shall comply with their subsequent comments.

Response: The Applicant had an Archaeological Assessment prepared for Quarry Site "C" and the document was submitted to the SHPD in October 2014. The SHPD provided comments on the report via letter in May 2015. See **Exhibit "G"**. Revised reports were prepared and re-submitted to SHPD by the Applicant's consultant, with the most recent being dated March 2020. See **Exhibit "H"**. Additionally, based on discussions with SHPD, an Archaeological Monitoring Plan (AMP) dated March 2020 was also prepared and submitted to the SHPD. See **Exhibit "I"**. The SHPD accepted both the Archaeological Assessment and AMP via letter dated April 17, 2020. See **Exhibit "J"**.

Condition No. 17:

That the new quarry operations on Quarry Site "C" shall be confined to the area identified as Quarry Site "C" on the attached Exhibit "A" entitled Plan Showing Hawaiian Cement Quarry Mining Sites (Revised December 13, 2013).

Response: The Applicant concurs with this condition and has confined the Quarry Site "C" operations as illustrated in the map attached to the December 2014 Decision and Order document. Refer to **Exhibit "A"**.

Should you have any further questions regarding this report, please do not hesitate to contact me at (808) 244-2015.

Very truly yours,



Karlynn Fukuda
President

KF:yp
Enclosures
cc: Dave Gomes, Hawaiian Cement (w/enclosures)
Keoni DeRego, Hawaiian Cement (w/enclosures)
K:\DATA\HawnCemt\PuuneneQuarry\SUP Compliance Report\1SUP Compliance Report 2024\SUP Comp.docx

List of Exhibits

EXHIBIT A. Decision and Order Approving a Time Extension to a Special Use Permit

EXHIBIT B. Certificate of Insurance

EXHIBIT C. Restoration Plan (Amended)

EXHIBIT D. State Department of Transportation Approval of Maintenance Plan

EXHIBIT E. Current State Department of Health Permits

EXHIBIT F. State Historic Preservation Division Approval Letter Dated April 8, 2012

EXHIBIT G. Letter from State Historic Preservation Division Dated May 12, 2015

EXHIBIT H. Archaeological Assessment Completed for the Proposed Amendment Site and State Historic Preservation Division Acceptance Letter Dated June 22, 2023

EXHIBIT I. Archaeological Monitoring Plan Dated March 2020

EXHIBIT J. State Historic Preservation Division Archaeological Assessment and Archaeological Monitoring Plan Acceptance Letter Dated April 17, 2020

EXHIBIT A.

Decision and Order Approving a Time Extension to a Special Use Permit

LAND USE COMMISSION
STATE OF HAWAII
2014 DEC -3 P 12: 05

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

In The Matter Of The Application Of	DOCKET NO. SP92-380
HAWAIIAN CEMENT	DECISION AND ORDER APPROVING AN AMENDMENT TO SPECIAL USE PERMIT; AND CERTIFICATE OF SERVICE
For An Amendment To Special Use Permit That Established A Rock Quarrying/Crushing Operation And Related Uses On Approximately 172.401 Acres Of Land Situated Within The State Land Use Agricultural District At Pulehunui, Wailuku, Maui, Hawai`i, Tax Map Keys: 3-8-04: Portion Of 1 And 3-8-08: Portion Of 1 And Portion Of 31	

DECISION AND ORDER APPROVING AN AMENDMENT TO SPECIAL USE PERMIT

AND

CERTIFICATE OF SERVICE

THIS IS TO CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF THE DOCUMENT ON FILE IN THE OFFICE OF THE STATE LAND USE COMMISSION, HONOLULU, HAWAI`I.

Date December 3, 2014

BY _____
Executive Officer



LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12:05

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In The Matter Of The Application Of)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT)	DECISION AND ORDER
)	APPROVING AN
For An Amendment To Special Use Permit)	AMENDMENT TO SPECIAL
That Established A Rock Quarrying/Crushing)	USE PERMIT; AND
Operation And Related Uses On)	CERTIFICATE OF SERVICE
Approximately 172.401 Acres Of Land Situated)	
Within The State Land Use Agricultural)	
District At Pulehunui, Wailuku, Maui,)	
Hawai`i, Tax Map Keys: 3-8-04: Portion Of 1)	
And 3-8-08: Portion Of 1 And Portion Of 31)	
)	

DECISION AND ORDER APPROVING AN AMENDMENT
TO SPECIAL USE PERMIT

AND

CERTIFICATE OF SERVICE

LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12:05

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In The Matter Of The Application Of HAWAIIAN CEMENT For An Amendment To Special Use Permit That Established A Rock Quarrying/Crushing Operation And Related Uses On Approximately 172.401 Acres Of Land Situated Within The State Land Use Agricultural District At Pulehunui, Wailuku, Maui, Hawai'i, Tax Map Keys: 3-8-04: Portion Of 1 And 3-8-08: Portion Of 1 And Portion Of 31	DOCKET NO. SP92-380 DECISION AND ORDER APPROVING AN AMENDMENT TO SPECIAL USE PERMIT

DECISION AND ORDER APPROVING AN AMENDMENT TO SPECIAL USE PERMIT

On February 20, 2013, Hawaiian Cement ("Applicant") filed a request with the County of Maui Department of Planning ("DP") to amend the special use permit issued in the above-entitled docket pursuant to section 205-6, Hawai'i Revised Statutes ("HRS"), and sections 15-15-95 and 15-15-96, Hawai'i Administrative Rules ("HAR") by (1) expanding the existing Pu'unēnē Quarry by an additional 41.968 acres of land identified as Tax Map Key ("TMK"): 3-8-04: por. 1 ("Quarry Site 'C'"); (2) including 9.697 acres of land identified as TMK: 3-8-04: por. 1 within the existing quarry operation as part of the permitted area; (3) deleting Condition Number 16 of the

Decision and Order Approving Amendment to Special Permit filed December 18, 2006; and (4) extending the life of the special use permit by 15 years (collectively "Request").

On May 27, 2014, the County of Maui Planning Commission ("Planning Commission") considered the Applicant's Request. There was no public testimony received by the Planning Commission. After due deliberation, at its meeting on May 27, 2014, the Planning Commission recommended approval of the Request to the State of Hawai`i Land Use Commission ("LUC").

On July 30, 2014, the LUC received a copy of the decision and a portion of the record of the Planning Commission's proceedings on the Applicant's Request. On October 15, 2014, the LUC received the remaining portion of the record.

The LUC has jurisdiction over the Applicant's Request. Section 205-6, HRS, and sections 15-15-95 and 15-15-96, HAR, authorize the LUC to approve special use permits and amendments thereto for areas greater than 15 acres.

On November 20, 2014, the LUC met in Kahului, Maui, Hawai`i, to consider the Applicant's Request. Karlynn Fukuda and Dave Gomes appeared on behalf of the Applicant. Kristin Tarnstrom, Esq., and Paul Fasi appeared on behalf of the DP. Bryan C. Yee, Esq., and Rodney Funakoshi also were present on behalf of the State of Hawai`i Office of Planning ("OP").

At the meeting, the Commission heard public testimony from Wil Cambra, Keoni Gomes, Clare Apana, and Johanna Kamaunu. Following the receipt of public testimony, the Applicant provided a presentation on its Request.

As part of its testimony, the DP noted that it had thoroughly reviewed the Applicant's Request and affirmed the Planning Commission's recommendation on the matter. Upon questioning, the DP acknowledged receipt of the December 10, 2007, revised map of the boundaries of the then 105.957-acre Pu`unēnē Quarry approved pursuant to the Findings of Fact, Conclusions of Law, and Decision and Order filed November 25, 1996.

The OP stated that it had no objections to the Applicant's Request.

Following discussion, a motion was made and seconded to approve the Applicant's Request, subject to the following amendment to Condition Number 1 and additional Condition Numbers 16 and 17 as follows:

1. That the State Land Use Commission Special Use Permit shall be valid to July 21, 2032, subject to further extension by the Land Use Commission upon a timely request for extension filed at least one-hundred twenty (120) days prior to its expiration. The appropriate Planning Commission shall make a recommendation to the Land Use Commission and may require a public hearing on the time extension.

16. That prior to commencement of quarry operations on Quarry Site "C," the Applicant shall submit an archaeological inventory survey of Quarry Site "C" to the State Historic Preservation Division for their review and shall comply with their subsequent comments.

17. That the new quarry operations on Quarry Site "C" shall be confined to the area identified as Quarry Site "C" on the attached Exhibit "A" entitled *Plan Showing Hawaiian Cement Quarry Mining Sites* (Revised December 13, 2013).

Following deliberation by the Commissioners, a vote was taken on the motion. There being a vote tally of 7 ayes, 0 nays, and 1 excused, the motion carried.

ORDER

The LUC, having duly considered the complete record of the Applicant's Request and the oral arguments presented by the Applicant, OP, and the DP, and a motion having been made at a meeting on November 20, 2014, in Kahului, Maui, Hawai`i, and the motion having received the affirmative votes required by section 15-15-13, HAR, and there being good cause for the motion,

HEREBY ORDERS that the Applicant's Request to (1) expand the existing Pu`unēnē Quarry by an additional 41.968 acres of land identified as TMK: 3-8-04: por. 1 and further identified as Quarry Site "C"; (2) include 9.697 acres of land identified as TMK: 3-8-04: por. 1 within the existing quarry operation as part of the permitted area; (3) delete Condition Number 16 of the Decision and Order Approving Amendment to Special Permit filed December 18, 2006; and (4) extend the life of the special use permit by 15 years be APPROVED, subject to the following amendment to Condition Number 1:

1. That the State Land Use Commission Special Use Permit shall be valid to July 21, 2032, subject to further extension by the Land Use

Commission upon a timely request for extension filed at least one-hundred twenty (120) days prior to its expiration. The appropriate Planning Commission shall make a recommendation to the Land Use Commission and may require a public hearing on the time extension.

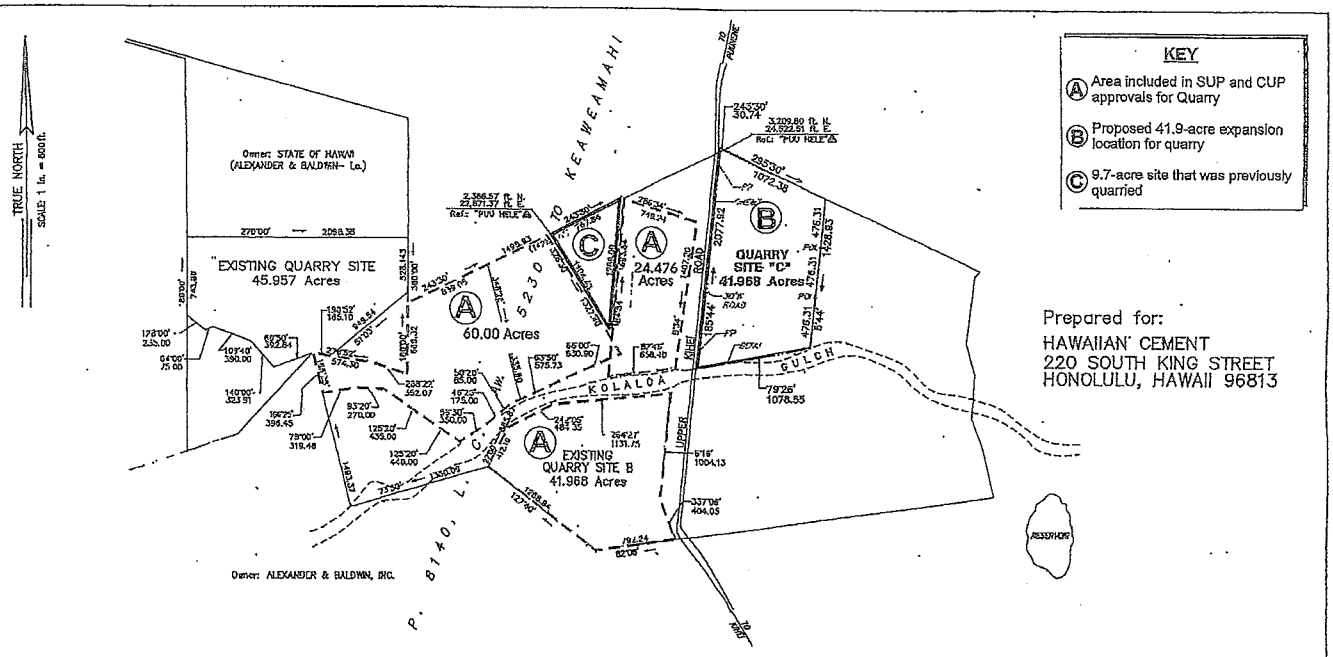
IT IS FURTHER ORDERED that the Applicant's Request be APPROVED, subject to the following additional Condition Numbers 16 and 17:

16.[1] That prior to commencement of quarry operations on Quarry Site "C," the Applicant shall submit an archaeological inventory survey of Quarry Site "C" to the State Historic Preservation Division for their review and shall comply with their subsequent comments.

17. That the new quarry operations on Quarry Site "C" shall be confined to the area identified as Quarry Site "C" on the attached Exhibit "A" entitled *Plan Showing Hawaiian Cement Quarry Mining Sites* (Revised December 13, 2013).

IT IS FURTHER ORDERED that all other conditions to the Decision and Order Approving a Time Extension filed July 15, 2005, and the Decision and Order Approving Amendment to Special Use Permit filed December 18, 2006, shall remain in full force and effect.

[1] This new condition replaces the previous Condition No. 16 of the Decision and Order Approving Amendment to Special Permit filed December 18, 2006, which is deleted with this Decision and Order.



PLAN SHOWING
HAWAIIAN CEMENT QUARRY MINING SITES
AT PULEHUNUI, WAILUKU (KULA), MAUI, HAWAII

300 400 0 800 1600
GRAPHIC SCALE IN FEET

Tax Map Key (2) 3-8-04: 01 (Portion)

REVISED: DECEMBER 13, 2013
REVISED: OCTOBER 15, 2012
REVISED: JUNE 14, 2012
DECEMBER 10, 2007

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS — CIVIL & STRUCTURAL ENGINEERS

JOB NO. 05-085

EXHIBIT "A"

ADOPTION OF ORDER

This ORDER shall take effect upon the date this ORDER is certified by this Commission.

Done at Honolulu, Hawai'i, this 3rd, day of December, 2014, per motion on November 20, 2014.

LAND USE COMMISSION

APPROVED AS TO FORM

STATE OF HAWAI'I

Deputy Attorney General

By
Chad McDonald
Chairperson and Commissioner

Filed and effective on:

12/3/14

Certified by:

DANIEL ORODENKER
Executive Officer

LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12: 05

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

In The Matter Of The Application Of HAWAIIAN CEMENT For An Amendment To Special Use Permit That Established A Rock Quarrying/Crushing Operation And Related Uses On Approximately 172.401 Acres Of Land Situated Within The State Land Use Agricultural District At Pulehunui, Wailuku, Maui, Hawai`i, Tax Map Keys: 3-8-04: Portion Of 1 And 3-8-08: Portion Of 1 And Portion Of 31	DOCKET NO. SP92-380 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a DECISION AND ORDER APPROVING AN AMENDMENT TO SPECIAL USE PERMIT was served upon the following by either hand delivery or depositing the same in the U.S. Postal Service by regular or certified mail as noted:

CERTIFIED MAIL: KARLYNN FUKUDA
Munekiyo & Hiraga Inc.
305 S. High Street
Wailuku, Hawai`i 96793
Petitioner Representative

DEL.: LEO ASUNCION, Acting Director
State Office of Planning
P. O. Box 2359
Honolulu, Hawai`i 96804-2359

REGULAR MAIL: BRYAN C. YEE, Esq.
Deputy Attorney General
425 Queen Street
Honolulu, Hawai`i 96813
Attorney for State Office of Planning

REGULAR MAIL: KRISTIN TARNSTROM, Esq.
Department of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawai`i 96793
Attorney for the County of Maui

REGULAR MAIL: WILLIAM SPENCE, Director
Department of Planning
County of Maui
200 South High Street
Wailuku, Hawai`i 96793

Dated: Honolulu, Hawai`i, December 3, 2014

DANIEL ORODENKER

Executive Officer

EXHIBIT B.

Certificate of Insurance

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 05/15/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MARSH USA LLC 333 South 7th Street, Suite 1400 Minneapolis, MN 55402-2400	**CONTACT NAME:** Marsh | U.S. Operations **PHONE (A/C, No, Ext):** 866-966-4664 **FAX (A/C, No):** 212-948-5382 **E-MAIL ADDRESS:** Minneapolis.CertRequest@marsh.com
CN103060364-HAWAC-GAWX-23- 2010 2037 HAWCE AI Y	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** Liberty Mutual Fire Ins Co 23035 **INSURER B :** Berkshire Hathaway Specialty Insurance 22276 **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**
INSURED HAWAIIAN CEMENT 99-1300 HALAWA VALLEY STREET AIEA, HI 96701	

COVERAGES **CERTIFICATE NUMBER:** CHI-010368719-67 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC OTHER:			TB2641446115023	06/01/2023	01/01/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 1,000,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			AS2641446115033	06/01/2023	01/01/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 5,000,000 $ $ $
B	**UMBRELLA LIAB** X OCCUR X **EXCESS LIAB** CLAIMS-MADE DED RETENTION $			47XSF32875101	06/01/2023	01/01/2025	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
A A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N: N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WA264D446115013 (AOS) WC2641446115064 (MN)	06/01/2023 06/01/2024	01/01/2025 01/01/2025	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
A	General Liab. Excess			TL2641446115043	06/01/2023	01/01/2025	Each Occ / Pers. & Adv. Injury GL Agg. / Prod.-Comp Ops Agg	4,000,000 4,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: Puunene Quarry and the TMKs (TMK 3-8-004: 001 and 002; TMKs 3-8-008: 001 and 031)

County of Maui and the State of Hawaii are included as an additional insured as required by permits SP92-380, SUP1 91/0013 and CUP 2006/0002 as respects the General Liability and Auto Liability. Blanket Additional Insured for General Liability is included where required by written contract and does not include professional liability coverage. Blanket Additional Insured for Automobile Liability is included where required by written contract. Excess liability applies to general liability, products and completed operations, automobile liability, and employers liability.

CERTIFICATE HOLDER

County of Maui
Department of Planning
200 S. High Street
Wailuku, Maui, HI 96793

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE of Marsh USA LLC

© 1988-2016 ACORD CORPORATION. All rights reserved.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED INSURED FOR COVERED AUTOS LIABILITY COVERAGE

This endorsement modifies insurance provided under the following:

AUTO DEALERS COVERAGE FORM
BUSINESS AUTO COVERAGE FORM
MOTOR CARRIER COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

This endorsement identifies person(s) or organization(s) who are "insureds" for Covered Autos Liability Coverage under the Who Is An Insured provision of the Coverage Form. This endorsement does not alter coverage provided in the Coverage Form.

SCHEDULE

Name Of Person(s) Or Organization(s):
Any person or organization where the named insured has agreed by written contract to include such person or organization as a designated insured.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

Each person or organization shown in the Schedule is an "insured" for Covered Autos Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in Paragraph **A.1.** of Section **II -** Covered Autos Liability Coverage in the Business Auto and Motor Carrier Coverage Forms and Paragraph **D.2.** of Section **I -** Covered Autos Coverages of the Auto Dealers Coverage Form.

© Insurance Services Office, Inc., 2011

Policy Number: AS2-641-446115-033
Issued By: Liberty Mutual Fire Insurance Co.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NOTICE OF CANCELLATION TO THIRD PARTIES

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
MOTOR CARRIER COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
EXCESS AUTOMOBILE LIABILITY INDEMNITY COVERAGE PART
SELF-INSURED TRUCKER EXCESS LIABILITY COVERAGE PART
COMMERCIAL GENERAL LIABILITY COVERAGE PART
EXCESS COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART

Schedule		
Name of Other Person(s)/ Organization(s):	**Email Address or mailing address:**	**Number Days Notice:**
Per schedule of certificate holders on file with the company	Per schedule of certificate holder on file with the company	90

A. If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule above. We will send notice to the email or mailing address listed above at least 10 days, or the number of days listed above, if any, before the cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

All other terms and conditions of this policy remain unchanged.

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with its permission.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. **Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

Schedule

Name Of Additional Insured Person(s) Or Organization(s):	**Location(s) Of Covered Operations**
Any person or organization for whom you have agreed in a written contract or agreement, prior to an "occurrence" or offense, that such person or organization be added as an additional insured to your policy.	All locations as required by a written contract or agreement entered into prior to an "occurrence" or offense.

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

© Insurance Services Office, Inc., 2018

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

A. **Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

Schedule

Name Of Additional Insured Person(s) Or Organization(s):	Location And Description Of Completed Operations
Any person or organization for whom you have agreed in a written contract or agreement, prior to an "occurrence" or offense, that such person or organization be added as an additional insured to your policy.	All locations as required by a written contract or agreement entered into prior to an "occurrence" or offense.

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

 © Insurance Services Office, Inc., 2018

Policy Number TB2-641-446115-023
Issued by Liberty Mutual Fire Insurance Co.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NOTICE OF CANCELLATION TO THIRD PARTIES

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
MOTOR CARRIER COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
EXCESS AUTOMOBILE LIABILITY INDEMNITY COVERAGE PART
SELF-INSURED TRUCKER EXCESS LIABILITY COVERAGE PART
COMMERCIAL GENERAL LIABILITY COVERAGE PART
EXCESS COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
COMMERCIAL LIABILITY - UMBRELLA COVERAGE FORM

A If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule of this endorsement. We will send notice to the email or mailing address listed above at least 10 days, or the number of days listed above, if any, before the cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

All other terms and conditions of this policy remain unchanged.

Schedule

Name of Other Person(s) / Organization(s):	**Email Address or mailing address:**	**Number Days Notice:**
"Per Schedule On File With The Company"	"Per Schedule On File With The Company"	90

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Includes copyrighted material of Insurance Services Office, Inc., with its permission.

NOTICE OF CANCELLATION TO THIRD PARTIES

A. If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule below. We will send notice to the email or mailing address listed below at least 10 days, or the number of days listed below, if any, before cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

Schedule

Name of Other Person(s) / Organization(s):	Email Address or mailing address:	Number Days Notice:
Schedule on file with the Company	Schedule on file with the Company	90

All other terms and conditions of this policy remain unchanged.

Issued by Liberty Mutual Fire Insurance Company 16586

For attachment to Policy No. WA2-64D-446115-013 Effective Date Premium $

Issued to Knife River Corporation Endorsement No.

© 2016 Liberty Mutual Insurance

NOTICE OF CANCELLATION TO THIRD PARTIES

A. If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule below. We will send notice to the email or mailing address listed below at least 10 days, or the number of days listed below, if any, before cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

Schedule

Name of Other Person(s) / Organization(s):	Email Address or mailing address:	Number Days Notice:
Schedule on file with the Company	Schedule on file with the Company	90

All other terms and conditions of this policy remain unchanged.

Issued by Liberty Mutual Fire Insurance Company 16586

For attachment to Policy No. WC2-641-446115-063 Effective Date Premium $

Issued to Knife River Corporation Endorsement No.

© 2016 Liberty Mutual Insurance

EXHIBIT C.

Restoration Plan (Amended)

FIRST AMENDMENT TO AMENDED AND RESTATED LICENSE AGREEMENT

THIS FIRST AMENDMENT TO AMENDED AND RESTATED LICENSE AGREEMENT (this "***Amendment***") dated this ____ day of _____, 2017 (the "***Effective Date***") is made by and between the ALEXANDER & BALDWIN, LLC, SERIES T, a series of a Delaware limited liability company (which series was established after the conversion from Alexander & Baldwin, LLC, a Hawaii limited liability company), hereinafter referred to as "***Licensor***," whose principal place of business and post office address on Maui is 33 Lono Avenue, Kahului, Maui, Hawaii 96732 an in Honolulu is 822 Bishop Street, Honolulu, Hawaii 96813 and **HAWAIIAN CEMENT**, a Hawai'i general partnership, hereinafter referred to as "***Licensee***," whose post office address is 99-1300 Halawa Street, Aiea, Hawaii 96701.

A. Licensor and Licensee entered into that certain Amended and Restated License Agreement dated March 26, 2012, effective as of March 1, 2012 (the "***License Agreement***") whereby Licensor licensed exclusively to Licensee various portions from time to time within up to 350 acres of that certain rock extraction area (the "***Rock Extraction Area***") situate at Waikapu, Maui, Hawaii, being identified as a portion of TMK (2) 3-8-004-002 ("***Parcel 2***") and further described in the License Agreement, for rock extraction. Although the License Agreement provides that the Rock Extraction Area comprises a portion of Parcel 2, the Rock Extraction Area also comprises a portion of TMK (2) 3-8-004-001 ("***Parcel 1***").

B. Alexander & Baldwin, LLC, Series R, a series of a Delaware limited liability company (which series was established after the conversion from Alexander & Baldwin, LLC, a Hawaii limited liability company) ("***ABL Series R***") is the current fee owner of Parcels 1 and 2.

C. ABL Series R, as Grantor, and Licensor, as Grantee, entered into that certain unrecorded Grant of Easement effective as of January 1, 2017, as amended by that certain First Amendment to Grant of Easement effective as of May 5, 2017 (as amended, the "***Easement Agreement***") pursuant to which ABL Series R granted to Licensor and its successors and assigns, a perpetual and exclusive easement over, across, under, along and upon Parcels 1 and 2.

D. In connection with the Easement Agreement, ABL Series R, as Assignor, and Licensor, as Assignee, entered into that certain Assignment and Assumption of Amended and Restated License Agreement effective as of January 1, 2017 ("***Assignment and Assumption***") whereby ABL Series R transferred and assigned to Licensor all right, title and interest of ABL Series R in and to the License Agreement.

E. Licensor and Licensee desire to modify certain terms of the License Agreement as set forth in this Amendment.

NOW, THEREFORE, the parties hereto, in consideration of the premises and of the covenants herein contained, hereby mutually agree to the following terms and conditions:

1. **Amendments**.

1.1 Rock Extraction Area. The first sentence of Section 3 (License) of the License Agreement is hereby amended and restated as follows: "Licensor hereby licenses exclusively to Licensee (except for use by Licensor or its affiliated companies, including but not limited to Hawaiian Commercial and Sugar Company ("***HC&S***") as provided herein, various portions from time to time within up to 350 acres of that certain rock extraction area (the "***Rock Extraction Area***") situate at Waikapu, Maui, Hawaii, as more particularly shown on **Exhibit**

"A" attached hereto and made a part hereof, being identified as a portion of Tax Map Key Nos. (2) 3-8-004-001 and -002."

1.2 Section 3(a) of Exhibit C to the License Agreement is amended and restated as follows:

> (a) Overburden (soil), in place before the mining occurred, shall be replaced with the same material over the quarry floor at a depth not less than 24".

Except as amended by this Amendment, in all other respects, the License Agreement shall remain the same and in full force and effect.

2. **Other Agreements.**

2.1 Each individual signing on behalf of a party hereto is authorized to do so and no approval or consent of any person is required or, if required, has been obtained, in connection with the execution and performance of this Amendment.

2.2 This Amendment shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

2.3 This Amendment may be executed in any number of counterparts and by either party hereto on a separate counterpart, each of which when so executed and delivered shall be deemed an original and all of which taken together shall constitute but one and the same instrument. Electronically transmitted executed copies of this Amendment shall be fully binding and effective for all purposes whether or not originally executed documents are transmitted to the other party. Facsimile signatures on documents are to be treated the same as original signatures.

[*signatures appear on following page*]

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the day and year first above written.

ALEXANDER & BALDWIN, LLC, SERIES T
a Delaware limited liability company

By:_____
Name: _____
Its:_____, Series T

By:_____
Name: _____
Its:_____, Series T

Licensor

HAWAIIAN CEMENT, a Hawaii general partnership

By:_____
Name: JASON MACY
Its: PRESIDENT

By:_____
Name: _____
Its:_____

Licensee

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the day and year first above written.

ALEXANDER & BALDWIN, LLC, SERIES T
a Delaware limited liability company

By: _____
Name: NELSON N.S. CHUN
Its: SENIOR VICE PRESIDENT, Series T

By: _____
Name: ALYSON J. NAKAMURA
Its: SECRETARY, Series T

Licensor

HAWAIIAN CEMENT, a Hawaii general partnership

By: _____
Name: _____
Its: _____

By: _____
Name: _____
Its: _____

Licensee

EXHIBIT D.

State Department of Transportation
Approval of Maintenance Plan

Gomes, David

From: Karlynn Kawahara [karlynn@mhinconline.com]
Sent: Wednesday, October 31, 2007 10:59 AM
To: Gomes, David
Subject: FW: Hawaiian Cement Maintenance Plan

Attachments: 081506 Transmittal to DOT Regarding Letter from Hawaiian Cement.pdf

081506
mittal to DOT R

Hi Dave,

Got your message. I am researching the original permit and will try to e-mail to you soon. This is the DOT message on the maintenance plan.

Thank you,
Karlynn

Karlynn Kawahara
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793
Telephone: (808) 244-2015
Facsimile: (808) 244-8729
Email: karlynn@mhinconline.com

CONFIDENTIAL COMMUNICATION: This message is intended for the use of the designated recipient(s) named above. If you have received this message in error, kindly notify us immediately by email or telephone. Thank you.

-----Original Message-----
From: Douglas.Meller@hawaii.gov [mailto:Douglas.Meller@hawaii.gov]
Sent: Wednesday, November 15, 2006 3:18 PM
To: Karlynn Kawahara
Subject: Hawaiian Cement Maintenance Plan

Here are Freddie's comments on the proposed maintenance plan.

----- Forwarded by Douglas Meller/HWY/HIDOT on 11/15/2006 03:01 PM -----

Ferdinand Cajigal/HWY/HIDOT

11/15/2006 12:34 PM

To: Antonie Wurster/HWY/HIDOT@HIDOT

cc: Ronald Tsuzuki/HWY/HIDOT@HIDOT, Douglas Meller/HWY/HIDOT@HIDOT, David Shimokawa/ADMIN/HIDOT@HIDOT

Subject

Hawaiian Cement Maintenance Plan

Toni: I u nderstand that the matter will be heard by State Land Use Commission tomorrow. The maintenance plans is acceptable to us --- therefore recommend approval of the special use permit. My understanding
is that the Maui Planning Comminssion granted the applicant a 3 year extension, thus, we recommend the same. Fifteen years would be too long for uss..... fred

----- Forwarded by Ferdinand Cajigal/HWY/HIDOT on 11/15/2006 12:29 PM -----

	"Karlynn Kawahara" <karlynn@mhinconline.com>	
To		<ferdinand.cajigal@hawaii.gov>
cc	11/15/2006 12:01 PM	"David Gomes" <Dave.Gomes@hawaiiancement.com>
Subject		Hawaiian Cement Maintenance Plan

Hi Freddie,

Per your request, please see attached transmittal and maintenance plan for

Hawaiian Cement. Please let me know if you have trouble opening the file
or if you have questions.

Thank you,
Karlynn

Karlynn Kawahara
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793
Telephone: (808) 244-2015
Facsimile: (808) 244-8729
Email: karlynn@mhinconline.com

CONFIDENTIAL COMMUNICATION: This message is intended for the use of the designated recipient(s) named above. If you have received this message in
error, kindly notify us immediately by email or telephone. Thank you.
(See attached file: 081506 Transmittal to DOT Regarding Letter from Hawaiian Cement.pdf)

EXHIBIT E.

Current State Department of Health Permits

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

April 20, 2011

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
(7009 0960 0000 3848 6299)

11-251E CAB
File No. 0252-01

Mr. John DeLong
President
Hawaiian Cement
99-1300 Halawa Valley Street
Aiea, Hawaii 96701

Dear Mr. DeLong:

Subject: Covered Source Permit (CSP) No. 0252-01-C
Application for Renewal and Significant Modification No. 0252-06
Hawaiian Cement
653 TPH Aggregate Processing Facility
Located at: Camp 6, Puunene, Maui
Date of Expiration: April 19, 2016

The subject covered source permit is issued in accordance with Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1. The issuance of this permit is based on the plans, specifications, and information that you submitted as part of your application received on February 26, 2008 and the additional information that you submitted as part of your application received on June 19, August 2, September 10 and 27, 2010, and February 11, 2011. The permit supersedes in its entirety covered Source Permit No. 0252-01-C issued on September 23, 2003.

The covered source permit is issued subject to the conditions/requirements set forth in the following attachments:

Attachment I: Standard Conditions
Attachment II: Special Conditions
Attachment II – INSIG: Special Conditions – Insignificant Activities
Attachment III: Annual Fee Requirements
Attachment IV: Annual Emissions Reporting Requirements

The following forms are enclosed for your use and submittal as required:

Compliance Certification Form
Annual Emissions Report Form: Diesel Engine Generator and Stone Processing Plant
Monitoring Report Form: Diesel Engine Generator
Monitoring Report Form: Facility Production
Monitoring Report Form: Opacity Exceedances

The following forms are enclosed for your use and submittal as required:

Visible Emissions Form Requirements, State of Hawaii
Visible Emissions Form

This permit: (a) shall not in any manner affect the title of the premises upon which the equipment is to be located; (b) does not release the permittee from any liability for any loss due to personal injury or property damage caused by, resulting from or arising out of the design, installation, maintenance, or operation of the equipment; and (c) in no manner implies or suggests that the Hawaii Department of Health, or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to personal injury or property damage caused by, resulting from or arising out of the design, installation, maintenance, or operation of the equipment.

Sincerely,

STUART YAMADA, P.E., CHIEF
Environmental Management Division

CL:smk

Enclosures

c: Blake Shiigi, EHS – Maui
CAB Monitoring Section

ATTACHMENT I: STANDARD CONDITIONS
COVERED SOURCE PERMIT NO. 0252-01-C

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

This permit is granted in accordance with the Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control, and is subject to the following standard conditions:

1. Unless specifically identified, the terms and conditions contained in this permit are consistent with the applicable requirement, including form, on which each term or condition is based.

   (Auth.: HAR §11-60.1-90)

2. This permit, or a copy thereof, shall be maintained at or near the source and shall be made available for inspection upon request. The permit shall not be willfully defaced, altered, forged, counterfeited, or falsified.

   (Auth.: HAR §11-60.1-6; SIP §11-60-11)[2]

3. This permit is not transferable whether by operation of law or otherwise, from person to person, from place to place, or from one piece of equipment to another without the approval of the Department of Health, except as provided in HAR, Section 11-60.1-91.

   (Auth.: HAR §11-60.1-7; SIP §11-60-9)[2]

4. A request for transfer from person to person shall be made on forms furnished by the Department of Health.

   (Auth.: HAR §11-60.1-7)

5. In the event of any changes in control or ownership of the facilities to be constructed or modified, this permit shall be binding on all subsequent owners and operators. The permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, copies of which will be forwarded to the Department of Health and the U.S. Environmental Protection Agency (EPA), Region 9.

   (Auth.: HAR §11-60.1-5, §11-60.1-7, §11-60.1-94)

6. The facility covered by this permit shall be constructed and operated in accordance with the application, and any information submitted as part of the application, for the Covered Source Permit. There shall be no deviation unless additional or revised plans are submitted to and approved by the Department of Health, and the permit is amended to allow such deviation.

   (Auth.: HAR §11-60.1-2, §11-60.1-4, §11-60.1-82, §11-60.1-84, §11-60.1-90)

7. This permit (a) does not release the permittee from compliance with other applicable statutes of the State of Hawaii, or with applicable local laws, regulations, or ordinances, and (b) shall not constitute, nor be construed to be an approval of the design of the covered source.

   (Auth.: HAR §11-60.1-5, §11-60.1-82)

8. The permittee shall comply with all the terms and conditions of this permit. Any permit noncompliance constitutes a violation of HAR, Chapter 11-60.1 and the Clean Air Act and is grounds for enforcement action; for permit termination, suspension, reopening, or amendment; or for denial of a permit renewal application.

   (Auth.: HAR §11-60.1-3, §11-60.1-10, §11-60.1-19, §11-60.1-90)

9. If any term or condition of this permit becomes invalid as a result of a challenge to a portion of this permit, the other terms and conditions of this permit shall not be affected and shall remain valid.

   (Auth.: HAR §11-60.1-90)

10. The permittee shall not use as a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the terms and conditions of this permit.

    (Auth.: HAR §11-60.1-90)

11. This permit may be terminated, suspended, reopened, or amended for cause pursuant to HAR, Sections, 11-60.1-10 and 11-60.1-98, and Hawaii Revised Statutes (HRS), Chapter 342B-27, after affording the permittee an opportunity for a hearing in accordance with HRS, Chapter 91.

    (Auth.: HAR §11-60.1-3, §11-60.1-10, §11-60.1-90, §11-60.1-98)

12. The filing of a request by the permittee for the termination, suspension, reopening, or amendment of this permit, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

    (Auth.: HAR §11-60.1-90)

13. This permit does not convey any property rights of any sort, or any exclusive privilege.

    (Auth.: HAR §11-60.1-90)

14. The permittee shall notify the Department of Health and U.S. EPA, Region 9, in writing of the following dates:

a. The **anticipated date of initial start-up** for each emission unit of a new source or significant modification not more than sixty (60) days or less than thirty (30) days prior to such date;
b. The **actual date of construction commencement** within fifteen (15) days after such date; and
c. The **actual date of start-up** within fifteen (15) days after such date.

(Auth.: HAR §11-60.1-90)

15. The permittee shall furnish, in a timely manner, any information or records requested in writing by the Department of Health to determine whether cause exists for terminating, suspending, reopening, or amending this permit, or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Department of Health copies of records required to be kept by the permittee. For information claimed to be confidential, the Director of Health may require the permittee to furnish such records not only to the Department of Health but also directly to the U.S. EPA, Region 9, along with a claim of confidentiality.

(Auth.: HAR §11-60.1-14, §11-60.1-90)

16. The permittee shall notify the Department of Health in writing, of the **intent to shut down air pollution control equipment for necessary scheduled maintenance** at least twenty-four (24) hours prior to the planned shutdown. The submittal of this notice shall not be a defense to an enforcement action. The notice shall include the following:

a. Identification of the specific equipment to be taken out of service, as well as its location and permit number;
b. The expected length of time that the air pollution control equipment will be out of service;
c. The nature and quantity of emissions of air pollutants likely to be emitted during the shutdown period;
d. Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period; and
e. The reasons why it would be impossible or impractical to shut down the source operation during the maintenance period.

(Auth.: HAR §11-60.1-15; SIP §11-60-16)[2]

17. **Except for emergencies which result in noncompliance with any technology-based emission limitation in accordance with HAR, Section 11-60.1-16.5, in the event any emission unit, air pollution control equipment, or related equipment malfunctions or breaks down in such a manner as to cause the emission of air pollutants in violation of HAR, Chapter 11-60.1 or this permit**, the permittee shall immediately notify the Department of Health of the malfunction or breakdown, unless the protection of personnel or public health or safety demands immediate attention to the malfunction or breakdown and makes such notification infeasible. In the latter case, the notice shall be provided as

soon as practicable. Within five (5) working days of this initial notification, the permittee shall also submit, in writing, the following information:

a. Identification of each affected emission point and each emission limit exceeded;
b. Magnitude of each excess emission;
c. Time and duration of each excess emission;
d. Identity of the process or control equipment causing the excess emission;
e. Cause and nature of each excess emission;
f. Description of the steps taken to remedy the situation, prevent a recurrence, limit the excessive emissions, and assure that the malfunction or breakdown does not interfere with the attainment and maintenance of the National Ambient Air Quality Standards and state ambient air quality standards;
g. Documentation that the equipment or process was at all times maintained and operated in a manner consistent with good practice for minimizing emissions; and
h. A statement that the excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance.

The submittal of these notices shall not be a defense to an enforcement action.

(Auth.: HAR §11-60.1-16; SIP §11-60-16)[2]

18. The permittee may request confidential treatment of any records in accordance with HAR, Section 11-60.1-14.

(Auth.: HAR §11-60.1-14, §11-60.1-90)

19. This permit shall become invalid with respect to the authorized construction if construction is not commenced as follows:

a. Within eighteen (18) months after the permit takes effect, is discontinued for a period of eighteen (18) months or more, or is not completed within a reasonable time.

b. For phased construction projects, each phase shall commence construction within eighteen (18) months of the projected and approved commencement dates in the permit. This provision shall be applicable only if the projected and approved commencement dates of each construction phase are defined in Attachment II, Special Conditions, of this permit.

(Auth.: HAR §11-60.1-9, §11-60.1-90)

20. The Department of Health may extend the time periods specified in Standard Condition No. 19 upon a satisfactory showing that an extension is justified. Requests for an extension shall be submitted in writing to the Department of Health.

(Auth.: HAR §11-60.1-9, §11-60.1-90)

21. The permittee shall submit fees in accordance with HAR, Chapter 11-60.1, Subchapter 6.

    (Auth.: HAR §11-60.1-90)

22. All certifications shall be in accordance with HAR, section 11-60.1-4.

    (Auth.: HAR §11-60.1-4, HAR §11-60.1-90)

23. The permittee shall allow the Director of Health, the Regional Administrator for the U.S. EPA and/or an authorized representative, upon presentation of credentials or other documents required by law:

    a. To enter the premises where a source is located or emission-related activity is conducted, or where records must be kept under the conditions of this permit and inspect at reasonable times all facilities, equipment, including monitoring and air pollution control equipment, practices, operations, or records covered under the terms and conditions of this permit and request copies of records or copy records required by this permit; and
    b. To sample or monitor at reasonable times substances or parameters to ensure compliance with this permit or applicable requirements of HAR, Chapter 11-60.1.

    (Auth.: HAR §11-60.1-11, §11-60.1-90)

24. Within thirty (30) days of **permanent discontinuance of the construction, modification, relocation, or operation of a stationary source covered by this permit**, the discontinuance shall be reported in writing to the Department of Health by a responsible official of the source.

    (Auth.: HAR §11-60.1-8; SIP §11-60-10)[2]

25. Each permit renewal application shall be submitted to the Department of Health and the U.S. EPA, Region 9, no less than twelve (12) months and no more than eighteen (18) months prior to the permit expiration date. The Director may allow a permit renewal application to be submitted no less than six (6) months prior to the permit expiration date, if the Director determines that there is reasonable justification.

    (Auth.: HAR §11-60.1-101, 40 CFR §70.5(a)(1)(iii))[1]

26. The terms and conditions included in this permit, including any provision designed to limit a source's potential to emit, are federally enforceable unless such terms, conditions, or requirements are specifically designated as not federally enforceable.

    (Auth.: HAR §11-60.1-93)

27. The compliance plan and compliance certification submittal requirements shall be in accordance with HAR, Sections 11-60.1-85 and 11-60.1-86. As specified in HAR,

Section 11-60.1-86, the compliance certification shall be submitted to the Department of Health and the U.S. EPA, Region 9, once per year, or more frequently as set by any applicable requirement.

(Auth.: HAR §11-60.1-90)

28. **Any document (including reports) required to be submitted by this permit shall be certified as being true, accurate, and complete by a responsible official in accordance with HAR, Sections 11-60.1-1 and 11-60.1-4, and shall be mailed to the following address:**

Clean Air Branch
Environmental Management Division
Hawaii Department of Health
919 Ala Moana Boulevard, Room 203
Honolulu, HI 96814

Upon request and as required by this permit, all correspondence to the State of Hawaii Department of Health associated with this Covered Source Permit shall have duplicate copies forwarded to:

Chief
Permits Office, (Attention: Air-3)
Air Division
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

(Auth.: HAR §11-60.1-4, §11-60.1-90)

29. To determine compliance with submittal deadlines for time-sensitive documents, the postmark date of the document shall be used. If the document was hand-delivered, the date received ("stamped") at the Clean Air Branch shall be used to determine the submittal date.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

---

[1] The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

[2] The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

ATTACHMENT II: SPECIAL CONDITIONS
COVERED SOURCE PERMIT NO. 0252-01-C

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In addition to the standard conditions of the covered source permit, the following special conditions shall apply to the permitted facility:

Section A. Equipment Description

1. This permit encompasses the following equipment and associated appurtenances for the 653 TPH Stone Processing Plant:

   a. One 720 TPH Pioneer Grizzly Feeder, Model 50x24, Serial No. 408532.
   b. One 653 TPH Pioneer (Primary) Jaw Crusher, Model 4450, Serial No. 408531.
   c. One 840 TPH JCI 3-Deck Screen, Model JCI620332LP, Serial No. 00LP12132.
   d. One 525 TPH Deister 2-Deck Screen, Model 5x14, Serial No. 2001169.
   e. One 645 TPH Cedarapids (Secondary) Rollercone Crusher, Model MVP450.
   f. One 400 TPH Canica (Tertiary No. 1) Impact Crusher, Model 100VSI, Serial No. 125120-87.
   g. One 600 TPH Canica (Tertiary No. 2) Impact Crusher, Model 125VSI, Serial No. 125140-92.
   h. Two Simplicity 8' x 20' Triple Deck Tertiary Screens, Serial Nos. 3820-M160A-3887 and 3820-M160A-3886.
   i. 150 TPH Fisher Industries Stationary Air Classifier, Serial No. AS-67-607347.
   j. 525 TPH Syntron Feeder, Model F-480, Serial No. T102615.
   k. Two Jeffrey Feeders, Model 250, Serial Nos. 884516 and 884517.
   l. One Surge Rock Feeder.
   m. Various Conveyors;
   n. Enclosures; and
   o. Water spray system.
   p. One 950 HP Caterpillar Diesel Engine Generator, CAT C27 ATAAC Diesel Engine and CAT SR4B Generator, Diesel Engine Serial No. MJE00535.

   Backup Equipment:

   q. One 700 TPH Cedarapids Apron Feeder with Hopper, Model VGF4220-15, Serial No. 50058 (backup for 720 TPH Pioneer Grizzly Feeder).
   r. One 800 TPH Pioneer Jaw Crusher, Model 3042, Serial No. UH-3769 (backup for 653 TPH Pioneer Jaw Crusher).
   s. One 600 TPH Metso Minerals 4' x 8' Double Deck Scalping Screen, Model HRVX-9, Serial No. C001061401 (backup for 840 TPH JCI 3-Deck Screen).

   (Auth.: HAR §11-60.1-3)

2. An identification tag or name plate shall be displayed on each crusher, screen, feeder, and diesel engine generator listed above to show model no., serial/identification no., and manufacturer. The identification tag or name plate shall be permanently attached to the equipment in a conspicuous location.

   (Auth.: HAR §11-60.1-5, §11-60.1-90)

Section B. Applicable Federal Regulations

1. The stone processing plant, excluding the 800 TPH Pioneer Jaw Crusher, Model 3042, is subject to the provisions of the following federal regulations:

   a. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions; and
   b. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.1, §60.670)[1]

2. The diesel engine generator is subject to the provisions of the following federal regulations:

   a. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions;
   b. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines;
   c. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart A, General Provisions; and
   d. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR § 60.1, § 60.4200, § 63.1, § 63.6585)[1]

3. The permittee shall comply with all of the applicable provisions of these standards, including all emission limits, notification, testing, monitoring, and reporting requirements. The major requirements of these standards are detailed in the special conditions of this permit.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR Part 60)[1]

Section C. Operational and Emission Limitations

1. Operating Limits Diesel Engine Generator

   a. The total operating hours of the diesel engine generator shall not exceed 4,380 hours in any rolling twelve-month (12-month) period.
   b. The diesel engine generator shall be fired only on fuel oil no. 2 with:

      i. A maximum sulfur content not to exceed 0.0015% by weight; and
      ii. A cetane index or aromatic content as follows:

         1) Minimum cetane index of forty (40); or
         2) Maximum aromatic content of thirty-five (35) volume percent.

   c. For any six (6) minute averaging period, the diesel engine generator shall not exhibit visible emissions of twenty (20) percent opacity or greater, except as follows: during start-up, shutdown, or equipment breakdown, the diesel engine generator may exhibit visible emissions greater than twenty (20) percent opacity but not exceeding sixty (60) percent opacity for a period aggregating not more than six (6) minutes in any sixty (60) minutes.

   (Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-38, §11-60.1-90; SIP §60.1-24)[2]

2. Minimum Stack Height Diesel Engine Generator

   The stack height for the diesel engine generator shall be at least twenty-four (24) feet above base elevation.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

3. Operating Limits Stone Processing Plant

   a. The maximum production of material from the facility shall not exceed 1,000,000 tons in any rolling twelve-month (12-month) period.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

   b. The permittee shall not cause to be discharged into the atmosphere from the 653 TPH Pioneer (Primary) Jaw Crusher, fugitive emissions which exhibit greater than twelve (12) percent opacity.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

   c. The permittee shall not cause to be discharged into the atmosphere, fugitive emissions which exhibit greater than seven (7) percent opacity, from the:

i. 840 TPH JCI 3-Deck Screen;
ii. 525 TPH Deister 2-Deck Screen;
iii. Any transfer point on the belt conveyors (starting from the 720 TPH Pioneer Grizzly Feeder up to and including conveyor C9 and the conveyor transfer points from the Canica tertiary crushers to the Simplicity tertiary screens of application 0252-06 rev 100618); or
iv. Any other affected facility (as defined in § 60.670 and 60.671).

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

d. The permittee shall not cause to be discharged into the atmosphere, fugitive emissions which exhibit greater than fifteen (15) percent opacity, from the:

i. 645 TPH Cedarapids (Secondary) Rollercone Crusher;
ii. 400 TPH Canica (Tertiary No. 1) Impact Crusher; and
iii. 600 TPH Canica (Tertiary No. 2) Impact Crusher.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

e. The permittee shall not cause to be discharged into the atmosphere from the two (2) Simplicity 8' x 20' Triple Deck Tertiary Screens, any transfer point on the belt conveyors (beginning with conveyor C6 of application 0252-06 rev 100617 and all conveyor transfer points following conveyor C6 in the process line, excluding the conveyor transfer points from the Canica tertiary crushers to the Simplicity tertiary screens) or from any other affected facility (as defined in § 60.670 and 60.671), fugitive emissions which exhibit greater than ten (10) percent opacity.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

f. Backup Equipment

i. The permittee shall not cause to be discharged into the atmosphere from the 600 TPH Metso Minerals 4' x 8' Double Deck Scalping Screen and all associated conveyor transfer points, fugitive emissions which exhibit greater than ten (10) percent opacity.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

g. The stone processing plant shall be configured to the layout identified in the covered source permit application, or to an alternate configuration meeting the following:

i. The permittee shall not operate the stone processing plant in a configuration that would result in an increase in the number of emission points, such as the addition of more transfer or stacking conveyors; and
ii. The permittee shall not operate the stone processing plant in a configuration that would cause an increase in the capacity of the process flow.

iii. The permittee shall not operate the backup equipment at the same time as the equipment it replaces. The permittee may replace the:

1) 720 TPH Pioneer Grizzly Feeder with the 700 TPH Cedarapids Apron Feeder with Hopper;
2) 653 TPH Pioneer Jaw Crusher with the 800 TPH Pioneer Jaw Crusher; and
3) 840 TPH JCI 3-Deck Screen with the 600 TPH Metso Minerals 4' x 8' Double Deck Scalping Screen.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

4. Fugitive Emission Control

a. The permittee shall take measures to control fugitive dust (e.g., wet suppression, enclosures, dust screens, etc.) at the crushers, screens, material transfer points, stockpiles, and throughout the facility. The Department of Health may at any time require the permittee to further abate fugitive dust emissions if an inspection indicates poor or insufficient control.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

b. The permittee shall not cause or permit fugitive dust to become airborne without taking reasonable precautions and shall not cause or permit the discharge of visible emissions of fugitive dust beyond the lot line of the property boundary on which the emissions originate.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

c. Water spray bars shall be installed, maintained, and utilized as needed during operation of the plant to minimize fugitive dust at the following material drop off points:

i. Exit of the Primary Crusher;
ii. Exit of Secondary Crusher to Secondary Screen Exit Conveyor;
iii. Entrance and Exit of the Tertiary Crushers;
iv. Entrance to Tertiary Screens;
v. Entrance to Tertiary Crushing Bin from Secondary Screen Exit Conveyor and Recirculating Conveyor;
vi. Secondary Screen Exit Conveyor to Tertiary Screens Feed Conveyor;
vii. Tertiary Crushers Exit Conveyor to Tertiary Screens Feed Conveyor;
viii. Tertiary Screens Feed Conveyor to Tertiary Screens;
ix. Conveyor Transfer Points (P)C2 to (P)C4 and (P)C3 to (P)C4; and
x. Conveyor discharge to all stockpiles.

The Department of Health at any time may require additional water sprays, manual water spraying, and/or enclosures at pertinent locations if an inspection indicates that more fugitive dust control is needed.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

d. The stone processing plant shall not be operated if observation, or the routine inspection required in Special Condition D.3.b indicates a significant drop in water pressure and/or flow rate, plugged nozzle(s), leak in the piping system, or other problems which affect the efficiency of its water spray system. The permittee shall investigate and correct the problem before resuming operations. The normal operating flow rate (gal/min) for the water spray system shall be established in the performance test conducted pursuant to this Attachment, Section F, and may be incorporated into the permit.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

e. A water spray system and/or an on-site water truck shall be maintained and utilized during the facility's operating hours and at other times as necessary to minimize fugitive dust on haul roads, facility grounds, and storage piles.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

5. Maintenance

The stone processing plant, including the water spray system and enclosures, shall be maintained in good operating condition at all times with scheduled inspections and maintenance as recommended by the manufacturer, or as needed.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

6. Alternate Operating Scenario

a. The permittee may replace the diesel engine generator with a temporary replacement unit if any repair reasonably warrants the removal of the diesel engine generator from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation), permit requirements for the permitted diesel engine generator do not conflict with those required for the replacement unit, and the following provisions are adhered to:

i. The installation/operation of the temporary replacement diesel engine generator shall not exceed twelve (12) consecutive months.
ii. A request for replacing the diesel engine generator with a temporary replacement unit shall be submitted in accordance with Special Condition E.8.a.
iii. The temporary replacement unit must be similar in size to the diesel engine generator being replaced with equal or lesser emissions.

iv. The temporary replacement unit shall comply with all applicable conditions required for the primary unit including all air pollution control equipment requirements, operating restrictions, and emission limits.
v. The diesel engine generator shall be repaired and returned to service at the same location in a timely manner.
vi. Removal and return information shall be submitted as required by Special Condition E.8.b.

b. The Department of Health may require an ambient air quality assessment of the temporary unit, and/or provide a conditional approval to impose additional monitoring, testing, recordkeeping, and reporting requirements to ensure the temporary unit is in compliance with the applicable requirements of the permitted unit being temporarily replaced.
c. Records shall be maintained in accordance with Special Condition D.10.
d. The terms and conditions under each operating scenario shall meet all applicable requirements, including the special conditions of this permit.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

Section D. Monitoring and Recordkeeping Requirements

1. Records

All records, including support information, shall be maintained for at least five (5) years from the date of the monitoring sample, measurement, test, report, or application. Support information includes all maintenance, inspection, and repair records, and copies of all reports required by this permit. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department of Health or its representative(s) upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-81, §11-60.1-90)

2. Production

Invoice and inventory records shall be maintained to document the total amount of product produced from the facility on a monthly and twelve-month (12-month) rolling basis for the purpose of the limitation specified in Special Condition C.3.a and for annual emissions reporting. Monthly records shall include the type (e.g., cinder, gravel, fines, etc.) and the amount of material (tons) processed.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

3. Water Spray System

   a. A non-resetting water meter shall be installed, operated and maintained for the water spray system of the 653 TPH stone processing plant to determine the cumulative gallons of water used for fugitive dust control and gallon per minute flow rate of the water spray system for the plant.
   b. The water spray system, to include the water pump, piping system, spray nozzles and any gauges (i.e., water pressure, water flow meter, etc.) shall be checked routinely or at least once per week to insure proper operation of the water spray system.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

4. Visible Emissions (VE)

   a. The permittee shall conduct **monthly** (calendar month) VE observations of the diesel engine generator by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9. For each month, two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals. For the VE observations of the diesel engine generator, the observer shall comply with the following additional requirements:

      i. The distance between the observer and the emission source shall be at least three (3) stack heights, but not more than 402 meters (0.25 miles); and
      ii. The observer shall, when possible, select a position that minimizes interference from other sources of visible emissions. The required observer position relative to the sun (Method 9, 40 CFR Part 60, Appendix A-4, Section 2.1) shall be followed.

   b. Except in those months where a performance test is conducted pursuant to Special Condition D.5 below, the permittee shall conduct **monthly** (*calendar month*) VE observations for the stone processing plant. Observations shall be made at emission points subject to an opacity limit, and shall be performed by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9. For the monthly observation, two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals for each emission point. The observer shall comply with the following additional requirements:

      i. The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet);
      ii. The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources. The required observer position relative to the sun (Method 9; Section 2.1) shall be followed; and
      iii. The observer shall record the operating capacity (ton/hr) of the plant at the time the observations were made.

      The Department of Health may allow observation of a portion of the total emission points at the stone processing plant, if it can be demonstrated that operations have been in compliance with the permit. At a minimum, at least three (3) emission points

from the stone processing plant shall be observed each month. At a minimum, the three (3) selected points from the plant shall include one (1) crusher, one (1) screen, and one (1) transfer point or those points as specified by the Department of Health. The points observed shall be rotated so that each crusher, screen, and transfer point is eventually observed. The Department may require additional emission points to be observed. Allowance to observe a portion of the total required emission points shall be obtained in writing from the Department of Health.

c. Records shall be completed and maintained in accordance with the **Visible Emissions Form Requirements**.

(Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90)

5. Performance Test

Source performance tests shall be conducted on the stone processing plant pursuant to this Attachment, Section F. Test plans, summaries and results shall be maintained in accordance with the requirements of this section.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

6. Operating Hours

A non-resetting hour meter shall be installed, operated, and maintained on the diesel engine generator for the permanent recording of the total hours operated. The non-resetting meter shall not allow the manual resetting or other manual adjustments of the meter readings. The installation of any new non-resetting meters or the replacement of any existing non-resetting meters shall be designed to accommodate a minimum of five (5) years of equipment operation, considering any operational limitations, before the meter returns to a zero reading.

The meter shall permanently record the total hours of operation for the purpose of the hour limitations specified in Special Condition C.1.a. The following information shall be recorded for the diesel engine:

a. Date of meter readings;
b. Beginning and ending meter readings for each month;
c. Total hours of operation for each month; and
d. Total hours of operation on a rolling twelve-month (12-month) basis.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

7. Fuel Specification

Fuel purchase receipts, showing the fuel type, sulfur content (percent by weight), minimum cetane index or maximum aromatic content (volume percent), date of delivery, and amount

(gallons) of fuel delivered for the diesel engine generator shall be maintained for purposes of the fuel limits specified in Special Condition C.1.b, and annual emissions reporting. Fuel sulfur content, cetane index, and aromatic content may be demonstrated by providing the supplier's fuel specification sheet for the type of fuel purchased and received.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

8. Inspection, Maintenance, and Repair Log

Equipment inspection, maintenance, and repair work. An inspection, maintenance and repair log shall be maintained for the equipment covered under this permit. Inspection of, and replacement of parts and repairs to the diesel engine generator, crushers, screens, conveyors, and water spray system, shall be well documented. At a minimum, the following records shall be maintained:

a. The date of the inspection/maintenance/repair work;
b. A description of the part(s) inspected or repaired;
c. A description of the findings and any maintenance or repair work performed; and
d. The name and title of the personnel performing inspection/work.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

9. Operation of Backup Equipment

The permittee shall record the following information for each period of time the Backup Equipment is operated:

a. The date the Backup Equipment begins operating;
b. The date the Backup Equipment stops operating; and
c. All periods of time during which the Backup Equipment and the equipment it is allowed to replace, as specified in Special Condition C.3.g.iii, are operated simultaneously. Record the start date and end date of simultaneous operation.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

10. Alternate Operating Scenario

The permittee shall contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility, the scenario under which it is operating.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

Section E. Notification and Reporting Requirements

1. Standard Conditions Reporting

   Notification and reporting pertaining to the following events shall be done in accordance with Attachment I, Standard Condition Nos. 14, 16, 17, and 24, respectively:

   a. Anticipated date of initial start-up, actual date of construction commencement, and actual date of start-up;
   b. Intent to shut down air pollution control equipment for necessary scheduled maintenance;
   c. Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedances due to emergencies); and
   d. Permanent discontinuance of construction, modification, relocation, or operation of the facility covered by this permit.

   (Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90; SIP §11-60-10, §11-60-16)[2]

2. Deviations

   The permittee shall report (in writing) **within five (5) working days** any deviations from permit requirements, including those attributable to upset conditions, the probable cause of such deviations and any corrective actions or preventive measures taken. Corrective actions may include a requirement for additional testing, or more frequent monitoring, or could trigger implementation of a corrective action plan.

   (Auth.: HAR §11-60.1-3, §11-60.1-15, §11-60.1-16, §11-60.1-90)

3. Notification of Constructed Stack Height

   The permittee shall submit to the Department of Health written notification of the final constructed stack height of the diesel engine generator within **fifteen (15) days** following receipt of this covered source permit.

4. Annual Emissions Reports

   a. As required by Attachment IV and in conjunction with the requirements of Attachment III, Annual Fee Requirements, the permittee shall report **annually** the total tons per year emitted of each regulated pollutant, including hazardous air pollutants. The report is due **within sixty (60) days** following the end of each calendar year. The following enclosed forms shall be used for reporting:

      Annual Emissions Report Form: Diesel Engine Generator and Stone Processing Plant

b. Upon the permittee's written request, the deadline for annual emissions reporting may be extended, if the Department of Health determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

5. Monitoring Reports

The permittee shall submit **semi-annually** the following reports to the Department of Health. The reports shall be submitted **within sixty (60) days** after the end of each semi-annual calendar period (January 1 - June 30 and July 1 - December 31), shall be signed and dated by a responsible official, and shall include the following:

a. The total production (tons) of the stone processing plant on a monthly and twelve-month (12-month) rolling basis;
b. The total operating hours of the diesel engine generator on a monthly and twelve-month (12-month) rolling basis;
c. Identification of the type of fuel fired in the 950 HP Diesel Engine Generator. Including:

   i. The maximum sulfur content (percent by weight) of the fuel; and
   ii. The minimum cetane index or maximum aromatic content of the fuel.

d. All periods of time during which the Backup Equipment and the equipment it is allowed to replace, as specified in Special Condition C.3.g.iii, are operated at the same time; and
e. Identification of any opacity exceedances as determined by the required VE monitoring of the stone processing plant. Each exceedance reported shall include the date, six (6) minute average opacity reading, possible reason for exceedance, duration of exceedance, and corrective actions taken. If there were no exceedances, the permittee shall submit in writing a statement indicating that for each equipment there were no exceedances for that semi-annual period for the stone processing plant.

The following enclosed **Monitoring Report Forms: Diesel Engine Generator; Facility Production;** and **Opacity Exceedances** shall be used.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

6. Performance Testing

a. At least **thirty (30) days prior** to conducting a source performance test pursuant to Attachment II, Section F, the permittee shall submit a written performance test plan to the Department of Health in accordance with Special Condition F.4.

b. Written reports of the results of the performance tests conducted to demonstrate compliance shall be submitted to the Department of Health **within sixty (60) days** after the completion of the performance test, and shall be in conformance with Special Condition F.6.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR § 60.676)[1]

7. Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department of Health and U.S. EPA, Region 9, the attached **Compliance Certification Form** pursuant to HAR, §11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall be submitted **within ninety (90) days** *after the end of each calendar year*, and shall be signed and dated by a responsible official. The compliance certification shall include, at a minimum, the following information:

a. The identification of each term or condition of the permit that is the basis of the certification;
b. The compliance status;
c. Whether compliance was continuous or intermittent;
d. The methods used for determining the compliance status of the source currently and over the reporting period;
e. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act; and
f. Any additional information as required by the Department of Health including information to determine compliance. Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department of Health determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

8. Alternate Operating Scenario

a. The permittee shall submit a written request and receive prior written approval from the Department of Health before exchanging a permitted diesel engine generator with a temporary replacement unit. The written request shall identify, at a minimum, the reasons for the replacement of the diesel engine generator from the site of operation and the estimated time period/dates for the temporary replacement, type, size, and manufacturing date of the temporary unit, emissions data, and stack parameters.

b. Prior to the removal and return of the permitted diesel engine generator, the permittee shall submit to the Department of Health written documentation on the removal and return dates and on the make, size, model, and serial numbers for both the temporary replacement unit and the installed unit.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

Section F. Testing Requirements

1. Performance Testing

   a. Initial and Annual Testing

      Within sixty (60) days after achieving the maximum production rate at which the equipment will be operated but not later than one-hundred eighty (180) days after the initial startup of the equipment, and annually thereafter the permittee shall conduct or cause to be conducted, performance tests on the equipment subject to the opacity limits of Special Condition C.3.b. and C.3.c.

   b. Annual Testing

      On an annual basis the permittee shall conduct or cause to be conducted, performance tests on the equipment subject to the opacity limits of Special Condition C.3.d, C.3.e, and C.3.f.

   c. The Department of Health may require testing at other points in the facility if an inspection indicates poor or insufficient controls.

   d. Source performance testing is not required for a specific calendar year, for the following equipment, under the following circumstances:

      i. The 600 TPH Metso Minerals 4' x 8' Double Deck Scalping Screen is not operated at any time during the specific calendar year;
      ii. The 653 TPH Pioneer Jaw Crusher is not operated at any time during the specific calendar year; and
      iii. The 840 TPH JCI 3-Deck Screen is not operated at any time during the specific calendar year.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; §11-60.1-161, 40 CFR §60.675, SIP §11-60.15)[1,2]

2. Performance Test Methods

   a. The performance tests for the stone processing plant shall be conducted by a certified reader using Method 9 of 40 CFR Part 60, Appendix A-4, and the procedures in 40 CFR §60.11 with the following additions for the fugitive emissions observations:

      i. The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet);
      ii. The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9, 40 CFR Part 60, Appendix A-4, Section 2.1) shall be followed; and
      iii. The observer shall record the operating capacity (tons/hr) of the crushing plant at the time observations were made.

   b. When determining compliance with the fugitive emissions standards of Special Condition C.3.b, C.3.c, C.3.d, C.3.e, and C.3.f, the duration of Method 9 observations must be thirty (30) minutes (five (5) 6-minutes averages). Compliance with the applicable fugitive emission limits specified in Special Condition C.3.b, C.3.c, C.3.d, C.3.e, and C.3.f must be based on the average of the five (5) 6-minute averages.
   c. When determining compliance with the fugitive emissions standards of Special Condition C.3.b, C.3.c, C.3.d, C.3.e, and C.3.f, if emissions from two (2) or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:

      i. Use for the combined emission stream, the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream; or
      ii. Separate the emissions so that the opacity of emissions from each affected facility can be read.

   d. When determining compliance with the fugitive emissions standard of Special Condition C.3.b, C.3.c, C.3.d, C.3.e, and C.3.f, a single visible emission observer may conduct visible emission observations for up to three (3) fugitive emission points within a fifteen-second (15-second) interval if the following conditions are met:

      i. No more than three (3) emission points may be read concurrently;
      ii. All three (3) emission points must be within a seventy (70) degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three (3) points; and
      iii. If an opacity reading for any one (1) of the three (3) emission points equals or exceeds the applicable standard, then the observer must stop taking readings for the other two (2) points and continue reading just that single point.

e. If, after **thirty (30) days** notice for an initially scheduled performance test, there is a delay, for example, due to operational problems, in conducting any rescheduled performance test required by Section F, the permittee shall submit a notice to the Department of Health at least **seven (7) days prior** to any rescheduled performance test.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.675)[1]

3. Performance Test Expense and Monitoring

The performance tests shall be made at the expense of the permittee and shall be conducted at the maximum expected operating capacity of the stone processing plant. All performance tests may be monitored by the Department of Health.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; §11-60.1-161, 40 CFR §60.675)[1]

4. Performance Test Plan

At least thirty (30) days prior to conducting the performance test, the permittee shall submit a written performance test plan to the Department of Health and U.S. EPA, Region 9, that includes date(s) of the test, test duration, test locations, test methods, source operation, locations of visible emissions readings, and other parameters that may affect the test results. Such a plan shall conform to U.S. EPA guidelines including quality assurance procedures. A test plan or quality assurance plan that does not have the approval of the Department of Health may be grounds to invalidate any test and require a retest.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; 40 CFR 60.8, SIP §11-60.1-15)[1,2]

5. Deviations

Any deviations from these conditions, test methods, or procedures may be cause for rejection of the test results unless such deviations are approved by the Department of Health before the tests are performed.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

6. Performance Test Report

Within sixty (60) days after completion of the performance test, the permittee shall submit to the Department of Health and U.S. EPA, Region 9, the test report which shall include the operating conditions of the facility at the time of the test (e.g., operating rate in tons/hr, water meter flow rate in gal/min, etc.), locations where the visible emissions were read, visible emission readings, location of water sprays, summarized test results, comparative

results with the permit emission limits, other pertinent support calculations, and field/laboratory data. The results shall be recorded and reported in accordance with 40 CFR Part 60, Appendix A, and §60.8.

The normal operating water flow rate (gal/min) of the water spray system shall be determined by the water flow rate used during the performance test that demonstrates compliance with the opacity limits of this permit.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.675; SIP §11-60-15)[1,2]

7. Performance Test Waiver

Upon written request and justification, the Department of Health may waive the requirement for, or a portion of, a specific source performance test. The waiver request is to be submitted prior to the required test and must include documentation justifying such action. Documentation should include, but is not limited to, the results of the prior performance test indicating compliance by a wide margin, documentation of continuing compliance, and further that operations of the source have not changed since the previous source test.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

Section G. Agency Notification

Any document (including reports) required to be submitted by this covered source permit shall be done in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

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1 The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

2 The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

ATTACHMENT II - INSIG
SPECIAL CONDITIONS - INSIGNIFICANT ACTIVITIES
COVERED SOURCE PERMIT NO. 0252-01-C

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In addition to the Standard Conditions of the Covered Source Permit, the following Special Conditions shall apply to the permitted facility:

Section A. Equipment Description

This attachment encompasses insignificant activities listed in HAR, §11-60.1-82(f) and (g) for which provisions of this permit and HAR, Subchapter 2, General Prohibitions, apply.

(Auth.: HAR §11-60.1-3)

Section B. Operational Limitations

1. The permittee shall take measures to operate applicable insignificant activities in accordance with the provisions of HAR, Subchapter 2 for visible emissions, fugitive dust, incineration, process industries, sulfur oxides from fuel combustion, storage of volatile organic compounds, volatile organic compound water separation, pump and compressor requirements, and waste gas disposal.

   (Auth.: HAR §11-60.1-3, §11-60.1-82, §11-60.1-90)

2. The Department of Health may at any time require the permittee to further abate emissions if an inspection indicates poor or insufficient controls.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-82, §11-60.1-90)

Section C. Monitoring and Recordkeeping Requirements

1. The Department of Health reserves the right to require monitoring, recordkeeping, or testing of any insignificant activity to determine compliance with the applicable requirements.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

2. All records shall be maintained for at least five (5) years from the date of any required monitoring, recordkeeping, testing, or reporting. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department of Health or its authorized representative upon request.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

Section D. Notification and Reporting

Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department of Health and U.S. EPA, Region 9, the attached *Compliance Certification Form* pursuant to HAR, Subsection 11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall include, at a minimum, the following information:

1. The identification of each term or condition of the permit that is the basis of the certification;
2. The compliance status;
3. Whether compliance was continuous or intermittent;
4. The methods used for determining the compliance status of the source currently and over the reporting period;
5. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act; and
6. Any additional information as required by the Department of Health including information to determine compliance.

The compliance certification shall be submitted **within ninety (90) days** after the end of each calendar year, and shall be signed and dated by a responsible official.

Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department of Health determines that reasonable justification exists for the extension.

In lieu of addressing each emission unit as specified in *Compliance Certification Form*, the permittee may address insignificant activities as a single unit provided compliance is met with all applicable requirements. If compliance is not totally attained, the permittee shall identify the specific insignificant activity and provide the details associated with the noncompliance.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

Section E. Agency Notification

Any document (including reports) required to be submitted by this Covered Source Permit shall be done in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

ATTACHMENT III: ANNUAL FEE REQUIREMENTS
COVERED SOURCE PERMIT NO. 0252-01-C

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

The following requirements for the submittal of annual fees are established pursuant to Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control. Should HAR, Chapter 60.1 be revised such that the following requirements are in conflict with the provisions of HAR, Chapter 60.1, the permittee shall comply with the provisions of HAR, Chapter 60.1.

1. Annual fees shall be paid in full:

   a. Within **sixty (60) days** after the end of each calendar year; and
   b. Within **thirty (30) days** after the permanent discontinuance of the covered source.

2. The annual fees shall be determined and submitted in accordance with Hawaii Administrative Rules, Chapter 11-60.1, Subchapter 6.

3. The annual emissions data for which the annual fees are based shall accompany the submittal of any annual fees and be submitted on forms furnished by the Department of Health.

4. The annual fees and the emission data shall be mailed to:

Clean Air Branch
Environmental Management Division
Hawaii Department of Health
919 Ala Moana Boulevard, Room 203
Honolulu, HI 96814

ATTACHMENT IV: ANNUAL EMISSIONS REPORTING REQUIREMENTS
COVERED SOURCE PERMIT NO. 0252-01-C

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions.

1. Complete the attached form(s):

   Annual Emissions Report Form: Diesel Engine Generator and Stone Processing Plant

2. The reporting period shall be from January 1 to December 31 of each year. All reports shall be submitted to the Department of Health within **sixty (60) days** after the end of each calendar year and shall be mailed to the following address:

   Clean Air Branch
   Environmental Management Division
   Hawaii Department of Health
   919 Ala Moana Boulevard, Room 203
   Honolulu, HI 96814

3. The permittee shall retain the information submitted, including all emission calculations. These records shall be in a permanent form suitable for inspection, retained for a minimum of five (5) years, and made available to the Department of Health upon request.

4. Any information submitted to the Department of Health without a request for confidentiality shall be considered public record.

5. In accordance with HAR, Section 11-60.1-14, the permittee may request confidential treatment of specific information, including information concerning secret processes or methods of manufacture, by submitting a written request to the Director and clearly identifying the specific information that is to be accorded confidential treatment.

COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0252-01-C
PAGE 1 OF ___

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following certification at least annually, or more frequently as requested by the Department.

(Make Copies of the Compliance Certification Form for Future Use)

For Period: _____ Date: _____

Company/Facility Name: _____

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0252-01-C
(CONTINUED, PAGE 2 OF ___)

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

The purpose of this form is to evaluate whether or not the facility was in compliance with the permit terms and conditions during the covered period. If there were any deviations to the permit terms and conditions during the covered period, the deviation(s) shall be certified as *intermittent compliance* for the particular permit term(s) or condition(s). Deviations include failure to monitor, record, report, or collect the minimum data required by the permit to show compliance. In the absence of any deviation, the particular permit term(s) or condition(s) may be certified as *continuous compliance*.

Instructions:
Please certify Sections A, B, and C below for continuous or intermittent compliance. Sections A and B are to be certified as a group of permit conditions. Section C shall be certified individually for each operational and emissions limit condition as listed in the Special Conditions section of the permit (list all applicable equipment for each condition). Any deviations shall also be listed individually and described in Section D. The facility may substitute its own generated form in verbatim for Sections C and D.

A. Attachment I, Standard Conditions

Permit term/condition	Equipment	Compliance
All standard conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent

B. Special Conditions - Monitoring, Recordkeeping, Reporting, Testing, and INSIG

Permit term/condition	Equipment	Compliance
All monitoring conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent
Permit term/condition All recordkeeping conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent
Permit term/condition All reporting conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent
Permit term/condition All testing conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent
Permit term/condition All INSIG conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent

COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0252-01-C
(CONTINUED, PAGE ____ OF ___)

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

C. Special Conditions - Operational and Emissions Limitations

Each permit term/condition shall be identified in chronological order using attachment and section numbers (e.g., Attachment II, B.1, Attachment IIA, Special Condition No. B.1.f, etc.). Each equipment shall be identified using the description stated in Section A of the Special Conditions (e.g., unit no., model no., serial no., etc.). Check all methods (as required by permit) used to determine the compliance status of the respective permit term/condition.

Permit term/condition	Equipment	Method	Compliance
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent

(Make Additional Copies if Needed)

D. Deviations

Permit Term/ Condition	Equipment / Brief Summary of Deviation	Deviation Period time (am/pm) & date (mo/day/yr)	Date of Written Deviation Report to DOH (mo/day/yr)
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	

(Make Additional Copies if Needed)

ANNUAL EMISSIONS REPORT FORM
DIESEL ENGINE GENERATOR AND STONE PROCESSING PLANT
COVERED SOURCE PERMIT NO. 0252-01-C
(PAGE 1 of 2)

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

(Make Copies for Future Use)

For Period: _____ Date: _____

Company name: _____

Facility name: _____

Equipment location: _____

Equipment description: _____

Serial/ID Number: _____

Serial/ID Number: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

For the reporting period:

1. Report the diesel engine fuel consumption as follows:

Model	Capacity	Maximum % Sulfur Content by Weight	Total Fuel Oil No. 2 Consumption (gal/yr)

ANNUAL EMISSIONS REPORT FORM
DIESEL ENGINE GENERATOR AND STONE PROCESSING PLANT
COVERED SOURCE PERMIT NO. 0252-01-C
(PAGE 2 of 2)

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

2. Report the quantity of material processed:

Type of Operation	Maximum Tons/hour of Material Entering (Tons/hr)	Materials Processed: Type (cinder, gravel, fines, etc.) and Amount (tons/yr)	Air Pollution Control Measures in Use	Control Efficiency (% Reduction)
Pioneer Grizzly Feeder (Special Condition A.1.a.)				
Pioneer Primary Jaw Crusher (Special Condition A.1.b.)				
JCI 3-Deck Screen (Special Condition A.1.c.)				
Deister 2-Deck Screen (Special Condition A.1.d.)				
Cedarapids Secondary Crusher (Special Condition A.1.e.)				
Canica Tertiary Crusher #1 (Special Condition A.1.f)				
Canica Tertiary Crusher #2 (Special Condition A.1.g.)				
Two Simplicity Tertiary Screens (Special Condition A.1.h.)				
Fisher Stationary Air Classifier (Special Condition A.1.i.)				
Syntron Feeder (Special Condition A.1.j)				
Two Jeffrey Feeders (Special Condition A.1.k.)				
Surge Rock Feeder (Special Condition A.1.l)				
Conveyor Transfer (Special Condition A.1.m.)				
Backup: Cedarapids Apron Feeder (Special Condition A.1.q.)				
Backup: Pioneer Jaw Crusher (Special Condition A.1.r.)				
Backup: Metso Minerals Screen (Special Condition A.1.s.)				
Active Stockpiles	NA			
Truck Loading	NA			

Note: Control measures include water sprays, housing and duct work to baghouses.
Use the following Control Efficiencies, unless documentation is available to show otherwise:
Water sprays, or Enclosure: 70% *Subsequent transfer points of water sprayed material: 70-(5*n)%*
Efficiency factors may be reduced by the Department of Health, if there are any indications that a source's air pollution control device is not operating at the specified efficiency.

MONITORING REPORT FORM
DIESEL ENGINE GENERATOR
COVERED SOURCE PERMIT NO. 0252-01-C
(Page 1 of 2)

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

(Make Copies for Future Use)

For Period: _____ Date: _____

Company name: _____

Facility name: _____

Equipment location: _____

Equipment description: _____

Serial/ID Number: _____

Serial/ID Number: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

For the reporting period:

1. Report the total operating hours of the 950 HP diesel engine generator for the reporting period:

Month	Total Operating Hours Monthly Basis	Total Operating Hours 12-Month Rolling Basis	Notes
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

MONITORING REPORT FORM
DIESEL ENGINE GENERATOR
COVERED SOURCE PERMIT NO. 0252-01-C
(Page 2 of 2)

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

2. Report the maximum fuel sulfur content (% by weight) of fuel oil no. 2, cetane index (or aromatic content) for the reporting period:

Equipment Description	Types of Fuel Fired	Maximum Sulfur Content (% by Weight)	Cetane Index (or Aromatic Content in Volume %)
950 HP Diesel Engine Generator			

If not already on file at the Department of Health, provide the supplier's fuel specification sheet for the type of fuel indicated in the above table. The fuel specification sheet shall indicate the percent sulfur content by weight.

MONITORING REPORT FORM
FACILITY PRODUCTION
COVERED SOURCE PERMIT NO. 0252-01-C
(Page 1 of 1)

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

(Make Copies for Future Use)

For Period: _____ Date: _____

Company name: _____

Facility name: _____

Equipment location: _____

Equipment description: _____

Serial/ID Number: _____

Serial/ID Number: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

For the reporting period:

1. Report production on a monthly and 12-month rolling basis for the reporting period:

Month	Monthly Production (Tons)	Total Production (Tons) on a 12-Month Rolling Basis	Notes
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

MONITORING REPORT FORM
OPACITY EXCEEDANCES
COVERED SOURCE PERMIT NO. 0252-01-C

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following information **semi-annually**:

(Make Copies for Future Use)

For Period:_____ Date:_____

Company/Facility Name:_____

Facility Name:_____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print):_____

Title:_____

Responsible Official (Signature):_____

Visible Emissions:

Report the following on the lines provided below: all date(s) and six (6) minute average opacity reading(s) which the opacity limit was exceeded during the monthly observations; or if there were no exceedances during the monthly observations, then write "no exceedances" in the comment column.

EQUIPMENT or EMISSION POINT DESCRIPTION	SERIAL/ID NO.	DATE	6 MIN. AVER. (%)	COMMENTS

VISIBLE EMISSIONS FORM REQUIREMENTS
STATE OF HAWAII
COVERED SOURCE PERMIT NO. 0252-01-C

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

The ***Visible Emissions (VE) Form*** shall be completed **monthly** (*each calendar month*) for each equipment subject to opacity limits in accordance with 40 CFR Part 60, Appendix A, Method 9. At least **annually** (*calendar year*), VE observation shall be conducted for each equipment subject to opacity limits by a certified reader in accordance with Method 9. The VE Form shall be completed as follows:

1. VE observations shall take place during the day only. The opacity shall be noted in five (5) percent increments (e.g., 25%).
2. Orient the sun within a 140 degree sector to your back. Provide a source layout sketch on the VE Form using the symbols as shown.
3. For VE observations of stacks, stand at least three (3) stack heights but not more than a quarter mile from the stack.
4. For VE observations of fugitive emissions from crushing and screening plants, stand at least 4.57 meters (15 feet) from the visible emissions source, but not more than a quarter mile from the visible emission source.
5. Two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals for each stack or emission point.
6. The six (6) minute average opacity reading shall be calculated for each observation.
7. If possible, the observations shall be performed as follows:
    a. Read from where the line of sight is at right angles to the wind direction.
    b. The line of sight shall not include more than one (1) plume at a time.
    c. Read at the point in the plume with the greatest opacity (without condensed water vapor), ideally while the plume is no wider than the stack diameter.
    d. Read the plume at fifteen (15) second intervals only. Do not read continuously.
    e. The equipment shall be operating at the maximum permitted capacity.
8. If the equipment was shut-down for that period, briefly explain the reason for shut-down in the comment column.

The permittee shall retain the completed VE Forms for recordkeeping. These records shall be in a permanent form suitable for inspection, retained for a minimum of five (5) years, and made available to the Department of Health, or their representative upon request.

Any required initial and annual performance test performed in accordance with Method 9 by a certified reader shall satisfy the respective equipment's VE monitoring requirements for the month the performance test is performed.

VISIBLE EMISSIONS FORM
COVERED SOURCE PERMIT NO. 0252-01-C

Issuance Date: April 20, 2011 **Expiration Date: April 19, 2016**

(Make Copies for Future Use for Each Stack or Emission Point)

Company Name:_____

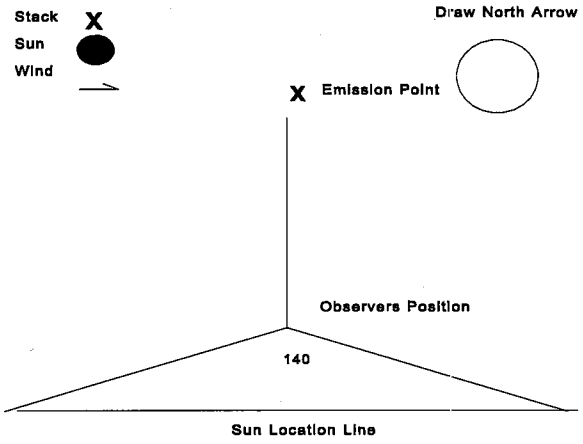
For stacks, describe equipment and fuel:_____

For fugitive emissions from crushers and screens, describe:

Fugitive emission point:_____

Plant Production (tons/hr):_____

(During observation)



Site Conditions:

Emission point or stack height above ground (ft):_____

Emission point or stack distance from observer (ft):_____

Emission color (black or white):_____

Sky conditions (% cloud cover):_____

Wind speed (mph):_____

Temperature (°F):_____

Observer Name:_____

Certified? (Yes/No):_____

Observation Date and Start Time:_____

Method of observation (Method 9):_____

	Seconds				
MINUTES	0	15	30	45	COMMENTS
1					
2					
3					
4					
5					
6					
Six (6) Minute Average Opacity Reading (%):					

Observation Date and Start Time:_____

Method of observation (Method 9):_____

	Seconds				
MINUTES	0	15	30	45	COMMENTS
1					
2					
3					
4					
5					
6					
Six (6) Minute Average Opacity Reading (%):					

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
File:

15-303E CAB
File No. 0252

May 19, 2015

Mr. John DeLong
President
Hawaiian Cement
99-1300 Halawa Valley Street
Aiea, Hawaii 96701

Dear Mr. DeLong:

SUBJECT: Renewal Application No. 0252-10
Covered Source Permit No. 0252-01-C
653 TPH Aggregate Processing Facility
Located At: Camp 6, Puunene, Maui

The Department of Health, Clean Air Branch (CAB), acknowledges receipt of your renewal application for the subject permit on April 21, 2015. Your renewal application has been assigned **No. 0252-10.** Please reference this number in future correspondence. A receipt for the application filing fee of $500.00 is enclosed.

The CAB completed a preliminary review of your permit application and has determined the application to be complete. Please note that pursuant to Hawaii Administrative Rules, Chapter 11-60.1, during the processing of an application that has been deemed complete, if it is determined that additional information is necessary to evaluate or take final action on the application, the CAB may request for additional information.

If there are any questions regarding this matter, please contact Mr. Jensen I. Kennedy of my staff at (808) 586-4200.

Sincerely,

NOLAN S. HIRAI, P.E.
Manager, Clean Air Branch

JIK:dh
Enclosure

c: CAB Monitoring Section

EXHIBIT F.

State Historic Preservation Division
Approval Letter Dated August 8, 2012

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

PAUL CONRY
INTERIM FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

August 8, 2012

Mr. Jeffrey Pantaleo, Principal Investigator
C/O Ms. Lisa Rutunno-Hazuka
Archaeological Services Hawai'i
Via Email: lisa@ashMaui.com

LOG NO: 2011.0298
LOG NO: 2011.0340
DOC NO: 1208JP01

Aloha Ms. Rotunno-Hazuka:

SUBJECT: **Chapter 6E-42 Historic Preservation Review-**
Archaeological Assessment Report for the Hawaiian Cement Quarry Expansion Project
Pulehunui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)

Thank you for the opportunity to review the report titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pors., Pulehunui Ahupua'a, Kula Moku; Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011). The report was originally received on January 26, 2011. We apologize for the delayed response.

The archaeological survey with negative findings was conducted for the 24.476-acre proposed rock quarry expansion site. A surface investigation occurred along with twenty excavated mechanical backhoe test trenches. Over the years, the project area has been disturbed continuously by intensive agricultural propagation and rock mining. Approximately 9.5 acres are active sugarcane fields. No further archaeological work is recommended for the project area, we concur with this recommendation.

The report contains information as required for assessment reports, pursuant to Hawaii Administrative Rule (HAR) 13-284 and13-276-5; it is accepted as final. We request that a few corrections to be included in the final report (see attachment). Please send one hardcopy of the corrected final document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. Please send a corrected final report to the Maui SHPD office as well. For questions about this letter, please contact Jenny at (808) 243-5169 or Jenny.L.Pickett@Hawaii.gov.

Mahalo,

Theresa K. Donham
Archaeology Branch Chief

cc: County of Maui, Planning fax: (808) 270-7634
County of Maui DSA fax: (808) 270-7972

ATTACHMENT

Requested corrections for: *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pors., Pulehunui Ahupua'a, Kula Moku; Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011).

Previous Archaeological Studies

1) Please add the recent Cultural Surveys Hawaii archaeological surveys (2007 etc) to the map (Figure 9) and to the previous archaeology background text.

Lab Work

2) Please edit this section to indicate nothing was identified, collected, or being curated.

Trench Descriptions

3) Please correct the associated trench Figures to correspond with the accurate text references.

Additional Comment

4) Please adjust the contents regarding archaeological recommendations for adjacent areas accordingly. In the final copy of the report, please adjust the associated contents accordingly. As we recently discussed in meeting regarding the project report, individual projects are usually treated separately so each project needs to be evaluated on a case-by-case basis. We hope to continue evaluating and providing recommendations regarding future proposed projects for the surrounding areas.

EXHIBIT G.

Letter from State Historic Preservation Division
Dated May 12, 2015

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

W. ROY HARDY
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

May 12, 2015

Jeffrey Pantaleo, M.A.
c/o Lisa Rotunno-Hazuka
Archaeological Services Hawaii, LLC
PO Box 1015
Puunene, Hawaii 96784
Via email to: lisa@ashmaui.com

LOG NO: 2014.04654
DOC NO: 1505MD19
Archaeology

Aloha Mr. Pantaleo:

SUBJECT: **Chapter 6E-42 Historic Preservation Review–**
Draft Archaeological Assessment for the Hawaiian Cement Quarry
Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)

Thank you for the opportunity to review the submittal titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 pors., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui* by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014). We received the submitted report on October 13, 2014 and apologize for the delay in our reply.

An archaeological survey was conducted prior to planned expansion of the existing Hawaiian Cement Quarry at the request of Mr. Gomes for the owner. This report documents an archaeological inventory survey of 41.968 acres, a portion of the 2,008 acres contained in parcel 001. Fieldwork occurred on the 14th and 28th of June and the 3rd and 12th of July in 2014. 33.168 acre were cultivated in sugarcane at that time, while 8.8 acres were cleared following harvest. Pedestrian survey was performed by one archaeologist and was followed by 19 mechanical excavations, including 17 backhoe trenches and two bulldozer cuts. No historic properties were identified in any of the excavations or above ground.

We are requesting revisions to the report as detailed in the attachment to this letter. Please contact me at (808) 243-4641 or Morgan.E.Davis@hawaii.gov if you have any questions or concerns about this letter.

Mahalo,

Morgan E. Davis
Lead Archaeologist, Maui Section

Attachment
Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 pors., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014)

1. Executive Summary, page 2, first paragraph: please replace "As detailed in" for "The" before 'background research.'

    a. Fifth paragraph: please delete everything after the second paragraph, beginning with the sentence beginning "Similarly" – these statements regarding areas outside of the survey area are out of scope for this report.

2. Introduction, page 9, first paragraph: please include a citation for the prior AA work in the nearby 42 acres mentioned here.

3. Figure 2, page 11: please provide a more detailed/closeup view (or a second map showing a portion, not all, of parcel 001) of the APE including the boundaries of Camps 3 and 13.

4. Existing Conditions, page 12, Environmental Setting first paragraph, first sentence: please replace "piece of land district" with "section of land."

    a. Second to last sentence, same page: please replace "Kula District" with either "Makawao District" or "Kula Moku."

    b. Last sentence: please clarify which "this" *ahupua'a* is referring to, as two were mentioned above.

5. Previous Archaeology, page 17, second entry: please note that Sinoto and Pantaleo 1991 does not appear on figure 8; please include.

    a. Page 18, ASH 2010 AA, end of page: please provide a citation for the information about adding marine shells as a soil conditioner to provide phosphorous.

    b. Page 19, final sentence: please replace lead-in "Unfortunately" with "However."

6. Field Work, page 21, second paragraph: please indicate the transect spacing used in pedestrian survey.

    a. Third paragraph, second sentence: please revise – testing was not "systematic random" because it was worked around actively-farmed acreage, approximately 70% of the parcel was farmed in sugarcane at the time.

7. Results of Survey, page 22, third sentence: please revise as necessary, the sentence appears to have been cut off/incomplete after the number 17.

    a. Somewhere in here, the inconsistency of excavation results needs to be addressed. Some trenches contained only a single layer, while others were up to five deep; yet all this was within a generally consistent depth. Please revise as necessary.

8. Table 1, pages 24-25: please continue the header on both pages.

    a. Please provide a key for the null (?) value appearing first in the entry of Layer V, Trench #1.

9. Discussion and Recommendations, page 54, paragraph 2: please revise to include an explanation for variety observed in the findings and questioned in item 7a above.

a. Fourth paragraph, sentence beginning "Similarly" and below – delete text between this word and the final sentence, these statements regarding areas outside of the survey area are out of scope for this report.

10. Appendix A, beginning on page 60: please review and revise. There are too many trench profiles labelled "TR 3" to be accurate; and only TRs 1-6 appear to be present. Also, specifically anomalous trenches like TR 9 are missing.

EXHIBIT H.

Archaeological Assessment Completed for the Proposed Amendment Site and State Historic Preservation Division Acceptance Letter Dated June 22, 2023

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

LAURA H.E. KAAKUA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

June 22, 2023

IN REPLY REFER TO:
Project No.: 2022PR01184
Doc. No.: 2306AM06
Archaeology

Kathleen Aoki, Director
County of Maui
Planning Department
2200 Main Street
One Main Plaza, Suite 315
Wailuku, HI 96793
c/o Wesley Bradshaw
Email: wesley.bradshaw@co.maui.hi.us

Dear Kathleen Aoki:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
County of Maui Permit Application SP 92-380 and CUP 2006/0002
Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project
Archaeological Assessment Report
Hāmākuapoko Ahupuaʻa, Hāmākuapoko District, Island of Maui
TMK: (2) 3-8-004:001 por.

This letter provides the State Historic Preservation Division's (SHPD's) review of the draft archaeological assessment (AA) report titled *Archaeological Assessment Report for the Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project, Pūlehunui Ahupuaʻa, Pūʻali Komohana District, Maui Island, TMK: (2) 3-8-004:001 por.* (Yucha et al., January 2023) and associated County of Maui Permit Applications SP 92-380 and CUP 2006/0002 for the Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project. SHPD received the AA report on January 25, 2023, including an HRS 6E Submittal Form, permit applications, project maps, and copies of the agreed-upon archaeological inventory survey (AIS) testing strategy (Yucha 2022), an archaeological monitoring plan (AMP) completed for Increments 2 and 4 (Fuentes et al., March 2020), and SHPD's letter accepting the AMP (Doc. No. 2004AM09).

The project area totals 45.35 acres. The project includes cement quarry mining within the entire footprint of Increment 4. Overlying agricultural soils will be stripped from the surface to expose the shallow underlying bedrock. The bedrock will be quarried and processed. No quarrying will occur within Kolaloa Gulch. In 2022, the State of Hawaiʻi Land Use Commission (LUC) reviewed the project and requested an AIS be conducted instead of archaeological monitoring. SHPD accepted the AIS testing strategy (Yucha 2022) on December 8, 2022 (Submission No. 2022PR01184.002).

Cultural Surveys Hawaiʻi, Inc. (CSH) conducted the requested AIS, which included a pedestrian survey of the project area and the excavation of 20 backhoe test trenches. The report (Yucha et al., January 2023) includes summaries of previous archaeological investigations and historic land use practices that have occurred in the area. Additionally, the report includes representative soil profiles and soil descriptions that indicate the soils observed within the project area include an agricultural plow zone overlying natural alluvial soil and bedrock throughout most of the project area.

Additionally, CSH recorded volcanic cinder below the plow zone along the southern and eastern edges of the project area. The survey produced negative findings for historic properties.

The AA report (Yucha et al., January 2023) meets the minimum requirements of HAR §13-276-5. **It is accepted.** Please send two hard copies of the document, clearly marked FINAL, along with a text-searchable copy of the AA report and a copy of this acceptance letter, to the Kapolei SHPD office, attention to SHPD Library. Also, submit a text-searchable PDF copy of the final AA report to HICRIS Project 2022PR01184 using the Project Supplement option in HICRIS and a copy to lehua.k.soares@hawaii.gov.

Due to the negative findings of significant historic properties during the AIS, SHPD's project effect determination is **"No historic properties affected"** pursuant to HAR §13-284-7(a)(1) for the current project. Further, pursuant to HAR §13-284-7(e), when SHPD comments that the proposed project shall not affect significant historic properties, the HRS 6E historic preservation review process ends.

SHPD hereby notifies the County of Maui that the permit issuance process may continue.

Please annotate on the construction plans: In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 652-1510.

Aloha,

Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: County of Maui, planning@mauicounty.gov
Janet Six, County of Maui, janet.six@co.maui.hi.us
Trevor Yucha, CSH, tyucha@culturalsurveys.com
David Gomes, Hawaiian Cement, dave.gomes@hawaiiancement.com
Bryan Esmeralda, Munekiyo Hiraga, planning@munekiyohiraga.com

Final

Archaeological Assessment Report for the Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project Pūlehunui Ahupuaʻa, Pūʻali Komohana District, Maui Island TMK: (2) 3-8-004:001 por.

Prepared for
County of Maui, Department of Public Works

Prepared by
Trevor Yucha, B.S.,
Josephine M. Yucha, M.S.
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawaiʻi, Inc.
Kailua, Hawaiʻi
(Job Code: PULEHUNUI 19)

January 2023

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Management Summary

Reference	Archaeological Assessment Report for the Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project, Pūlehunui Ahupua‘a, Pū‘ali Komohana District, Maui Island, TMK: (2) 3-8-004:001 por. (Yucha et al. 2023).
Date	January 2023
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: PULEHUNUI 19 Hawai‘i Cultural Resource Information System (HICRIS): 2022PR01184
Investigation Permit Number	CSH completed the archaeological inventory survey (AIS) fieldwork under archaeological fieldwork permit number 23-30, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-282.
Agencies	County of Maui, Department of Public Works (DPW), Development Services Administration (DSA); SHPD
Land Jurisdiction	Private (Hawaiian Cement Condominium-Condo Master)
Project Funding	Private
Project Location	The project area is located on the western flank of Haleakalā along the edge of the central isthmus of Maui, north of Kolaloa Gulch, and east of Upper Kīhei Road. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey (USGS) topographic quadrangle.
Project Description	The proposed project will include cement quarry mining within the entire footprint of Increment 4. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock. The bedrock will then be quarried and processed. No quarrying will occur within Kolaloa Gulch.
Project Acreage	The project area is 57.9 acres (23.4 hectares).
Historic Preservation Regulatory Context	In 1990, Archaeological Consultants Hawai‘i (ACH) completed a walk-through reconnaissance survey of the Hawaiian Cement Quarry area including the current project area (Kennedy 1990). At the time of the survey, the entire property was covered in active commercial sugarcane fields. No historic properties were identified during the survey and no further work was recommended. In 2010, Archaeological Services Hawai‘i (ASH) conducted an archaeological inventory survey for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an “archaeological assessment” in

	accordance with §13-284-5(5)(A). The study recommended no further work. The study was reviewed and accepted by the SHPD on 8 August 2012 (SHPD Log No.: 2011.0298 and 2011.0340; Doc. No.: 1208JP01). In 2014, ASH returned to the area to conduct an archaeological inventory survey of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2020). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. As such the study was termed an "archaeological assessment" in accordance with §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No: 1505MD19). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017. The report was accepted in a 17 April 2020 Chapter 6E-42 historic preservation review letter (Log No.: 2017.02140/2020.00762; Doc. No.: 2004AM09). In order to address proposed quarry expansion in Increment 4 (and Increment 2), the landowner and project agency proposed to conduct archaeological monitoring for identification purposes and prepared an archaeological monitoring plan (AMP) for the project that was submitted to the SHPD. The SHPD agreed with archaeological monitoring for identification purposes and accepted the AMP in their 17 April 2020 Chapter 6E-42 historic preservation review letter (Log No.: 2017.02140/2020.00762; Doc. No.: 2004AM09). This allowed the project's permit issuance process to continue. While the SHPD did not require an AIS for the proposed project, a review of the project by the State of Hawai‘i Land Use Commission (LUC) in 2022 prompted the LUC to request an AIS for the project. The project proponents then agreed to voluntarily conduct an AIS for the project. Prior to the start of fieldwork, CSH submitted a proposed AIS testing strategy and methodology to the SHPD for review. The SHPD accepted the AIS testing strategy via HICRIS comment on 8 December 2022. This AIS investigation fulfills the requirements of HAR §13-276 and was conducted to identify, document, and assess significance of any historic properties. This document also is intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. As there were no historic properties identified during the AIS, this study is termed an archaeological assessment (AA) in accordance with §13-284-5(5)(A).
Fieldwork Effort	Fieldwork was accomplished between 27 December 2022 and 29 December 2022 by Jonas Madeus, B.A., Jay Rapoza, M.A., and Trevor

	Yucha, B.S., under the general supervision of Hallett H. Hammatt Ph.D. This work required approximately seven person-days to complete.
Historic Properties Identified	No historic properties were identified within the project area.
Effect Recommendation	The current AIS has confirmed that there were no identified historic properties within the project area and in accordance with HAR §13-13-284-7, the effect recommendation for the proposed project is “no historic properties affected”.
Mitigation Recommendations	No further work is recommended. While the SHPD had initially requested archaeological monitoring for identification purposes in their initial review of the project (Log No.: 2017.02140/2020.00762; Doc. No.: 2004AM09), the current AIS, which was subsequently requested by the LUC during their review of the project, has confirmed that no historic properties are present. In the unlikely event that subsurface historic properties are identified during mining within the project area, CSH recommends that work be ceased in the immediate vicinity of the find, the find be protected from additional disturbance, and the SHPD be contacted immediately in order to provide additional guidance.

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Section 1 Introduction

1.1 Project Background

Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this archaeological assessment report for the Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project, Pūlehunui Ahupua‘a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 (por.). The project area is located on the western flank of Haleakalā along the edge of the central isthmus of Maui, north of Kolaloa Gulch, and east of Upper Kīhei Road. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey (USGS) topographic quadrangle (Figure 1), a tax map plat (Figure 2), and a 2016 aerial photograph (Figure 3).

The project area is 57.9 acres (23.4 hectares) and is understood to be privately owned by Hawaiian Cement Condominium-Condo Master. The proposed, privately funded project will include cement quarry mining within the entire footprint of Increment 4 (Figure 4). Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock. The bedrock will then be quarried and processed. No quarrying will occur within Kolaloa Gulch.

1.2 Historic Preservation Regulatory Context

In 1990, Archaeological Consultants Hawai‘i (ACH) completed a walk-through reconnaissance survey of the Hawaiian Cement Quarry area including the current project area (Kennedy 1990). At the time of the survey, the entire property was covered in active commercial sugarcane fields. No historic properties were identified during the survey and no further work was recommended.

In 2010, Archaeological Services Hawai‘i (ASH) conducted an archaeological inventory survey for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). The study recommended no further work. The study was reviewed and accepted by the SHPD on 8 August 2012 (SHPD Log No.: 2011.0298 and 2011.0340; Doc. No.: 1208JP01; Appendix A).

In 2014, ASH returned to the area to conduct an archaeological inventory survey of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2020). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. As such the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No: 1505MD19; Appendix A). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017. The report was accepted in a 17 April 2020 Chapter 6E-42 historic preservation review letter (Log No.: 2017.02140/2020.00762; Doc. No.: 2004AM09; Appendix A).

In order to address proposed quarry expansion in Increment 4 (and Increment 2), the landowner and project agency proposed to conduct archaeological monitoring for identification purposes and prepared an archaeological monitoring plan (AMP) for the project that was submitted to the SHPD.

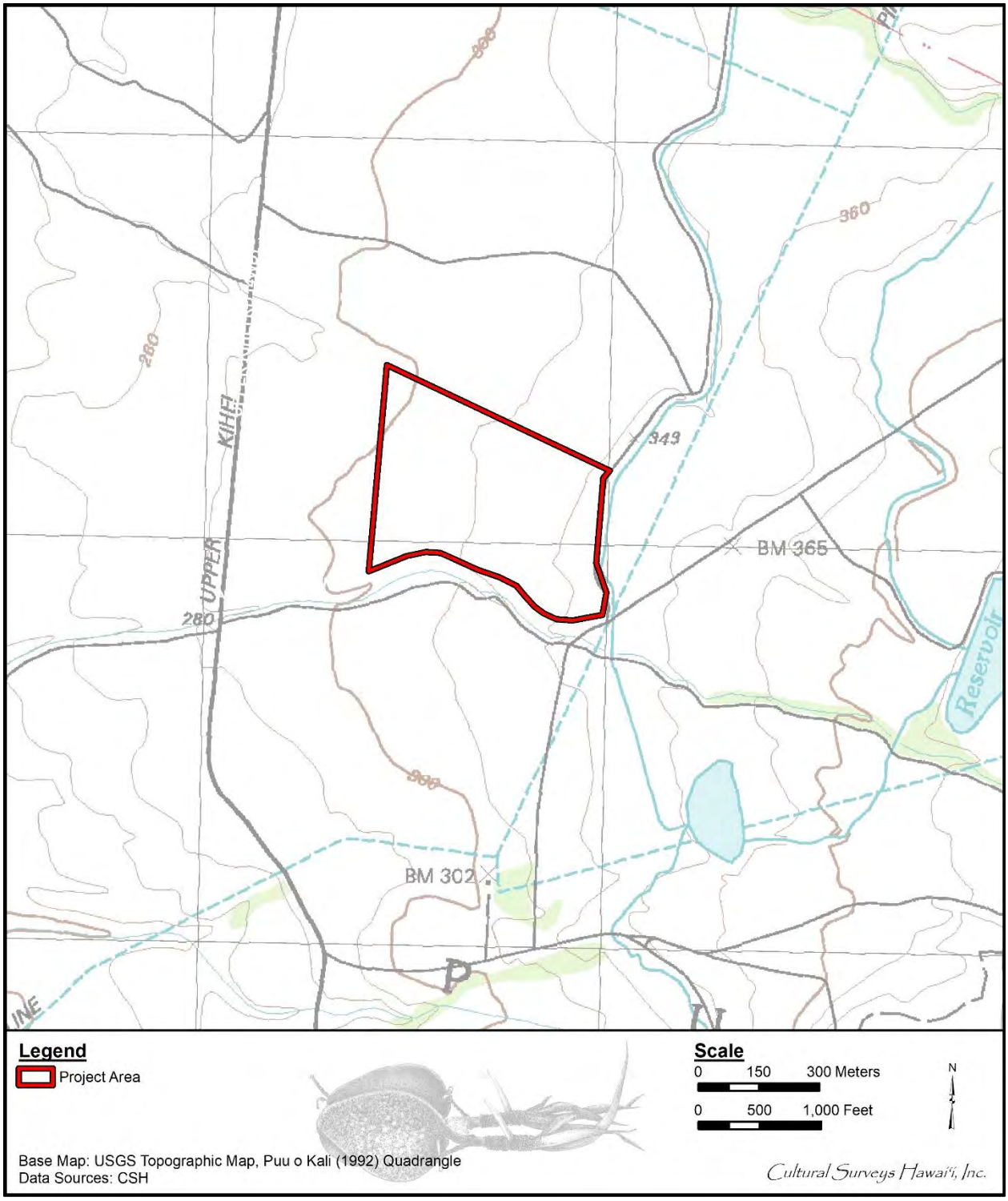


Figure 1. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of the project area (U.S. Geological Survey 1992)

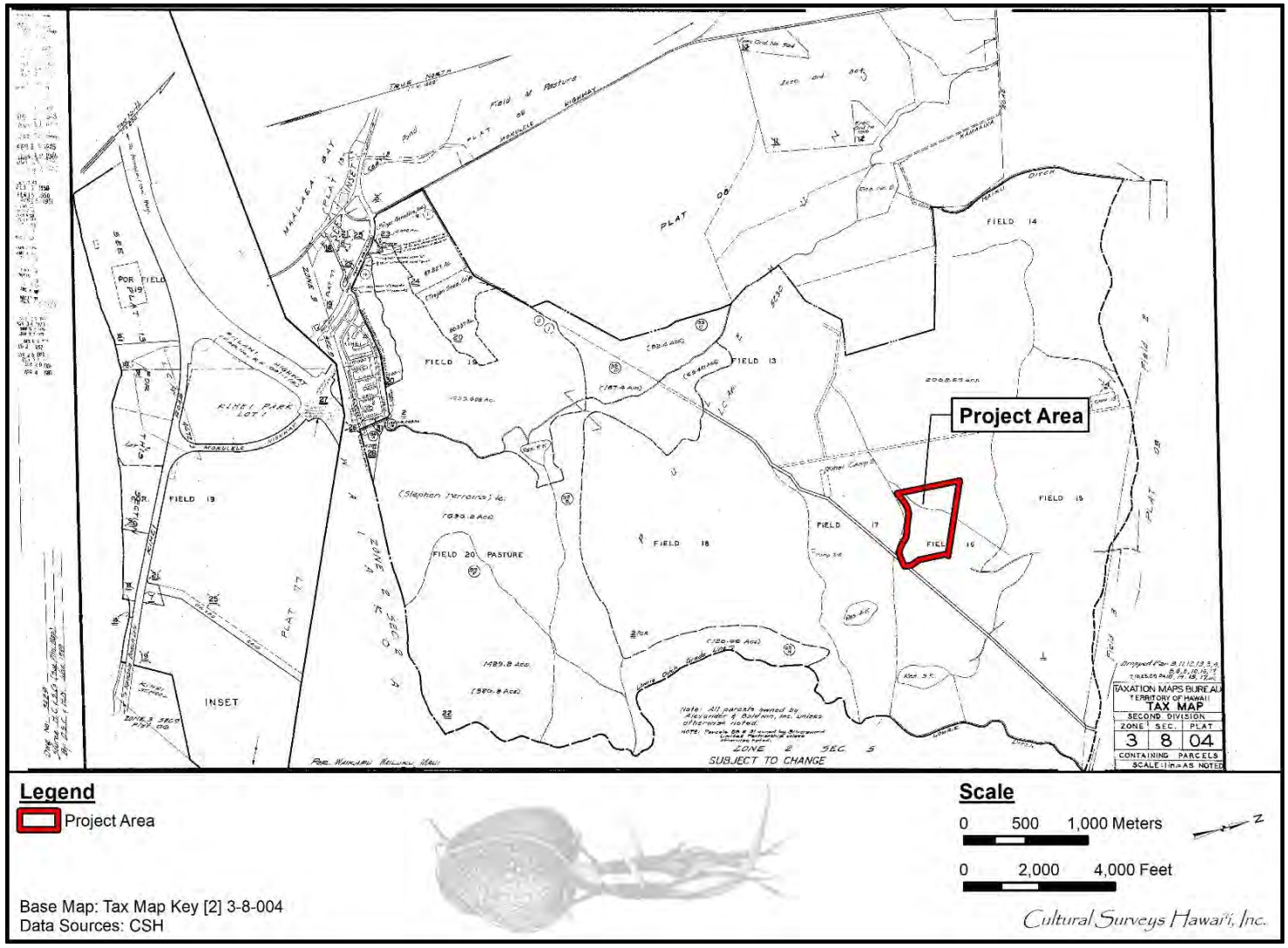


Figure 2. Tax Map Key (TMK) [2] 3-8-004 showing the project area (Hawaii TMK Service 2014)

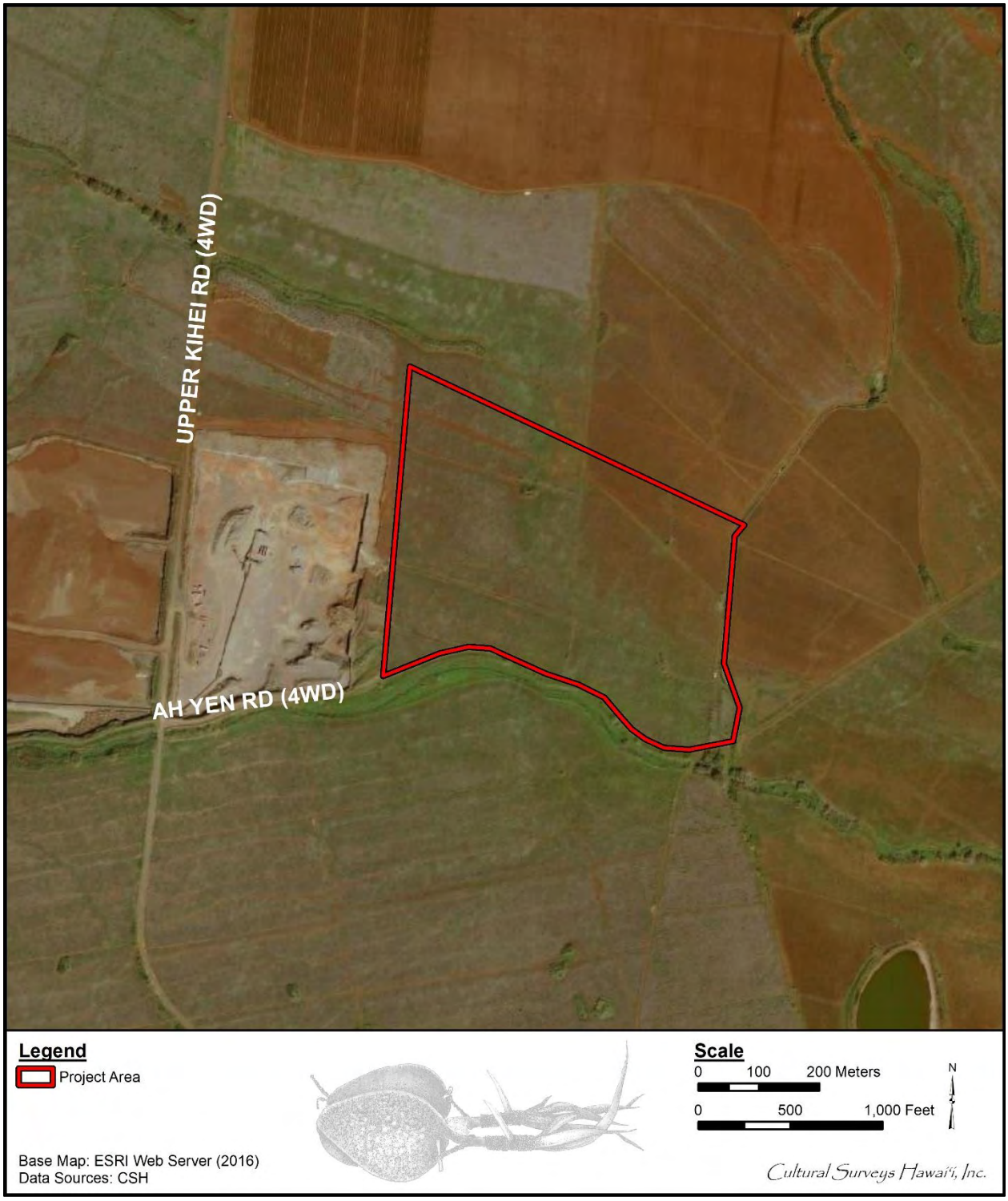


Figure 3. 2016 aerial photograph of the project area (Esri 2016)

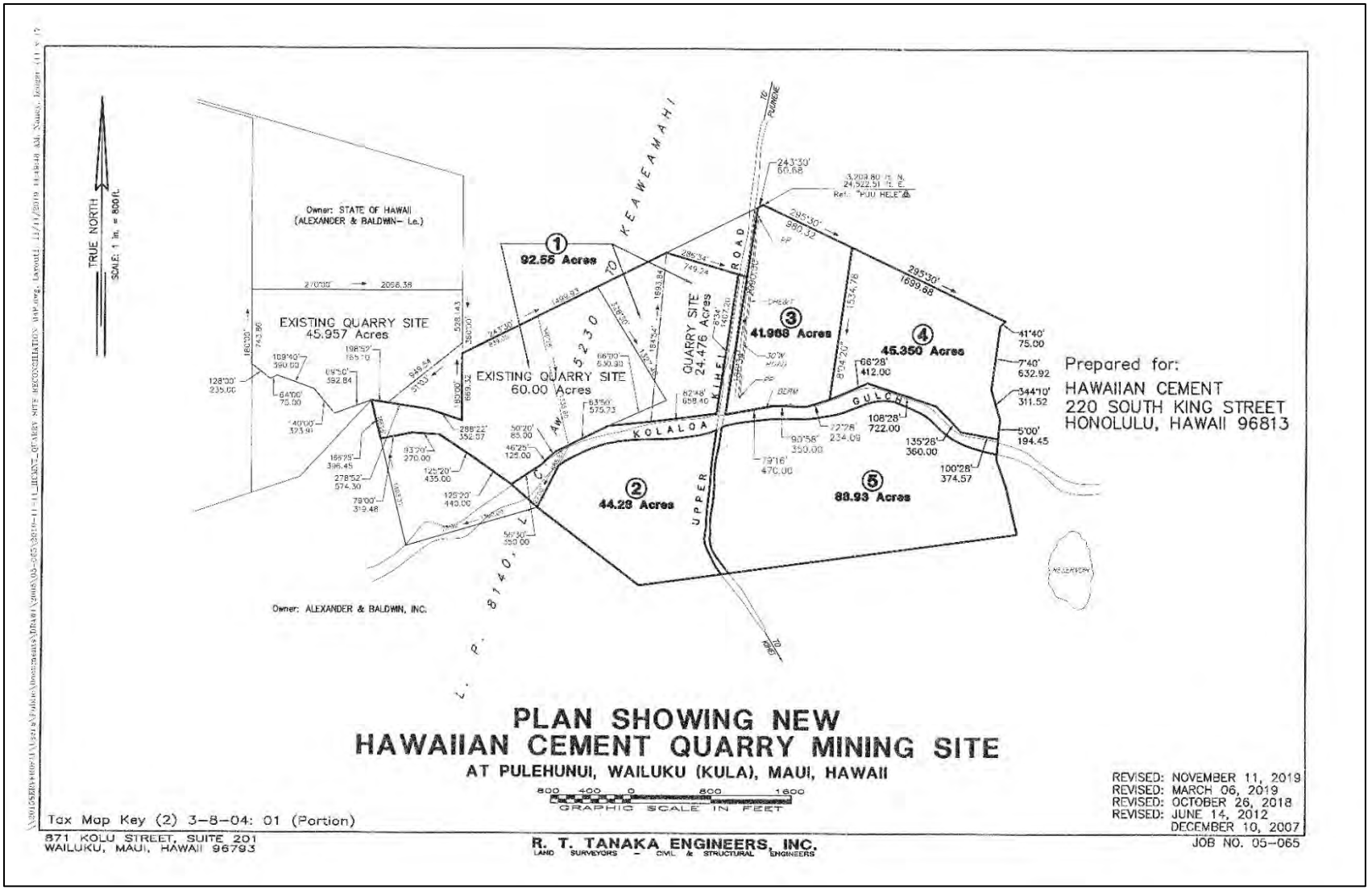


Figure 4. Hawaiian Cement Quarry Mining Site plan showing the location of Increment 4 (R.T. Tanaka Engineers Inc. 2019)

The SHPD agreed with archaeological monitoring for identification purposes and accepted the AMP in their 17 April 2020 Chapter 6E-42 historic preservation review letter (Log No.: 2017.02140/2020.00762; Doc. No.: 2004AM09; Appendix A). This allowed the project's permit issuance process to continue.

While the SHPD did not require an AIS for the proposed project, a review of the project by the State of Hawai‘i Land Use Commission (LUC) in 2022 prompted the LUC to request an AIS for the project. The project proponents then agreed to voluntarily conduct an AIS for the project. Prior to the start of fieldwork, CSH submitted a proposed AIS testing strategy and methodology to the SHPD for review (Appendix B). The SHPD accepted the AIS testing strategy via HICRIS comment on 8 December 2022.

This AIS investigation fulfills the requirements of HAR §13-276 and was conducted to identify, document, and assess significance of any historic properties. This document also is intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. As there were no historic properties identified during the AIS, this study is termed an archaeological assessment (AA) in accordance with §13-284-5(5)(A).

1.3 Environmental Setting

1.3.1 Natural Environment

The current project area is located on the western flank of Haleakalā along the edge of the level central isthmus of Maui. The project area is located approximately 4.75 km (2.95 mi) from the nearest shoreline fronting Kīhei and is 64 to 106 m (210 to 348 ft) above mean sea level. The topography of the project area is a gentle westward slope. The project area, and overall quarry site, is bisected by Kolaloa Gulch, a perennial tributary to Keālia Pond. Other nearby gulches include Pūlehu Gulch to the north of the project area and Keāhuaiwi Gulch to the south of the project area.

In 2014, the average monthly air temperature for the project area was between 21.43°C (70.58°F) in January and 25.50°C (77.90°F) in August, with an average annual air temperature of 23.51°C (74.31°F) (Giambelluca et al. 2014). The vicinity of the project area received a mean annual rainfall of 327.0 mm (12.87 inches) between 1978 and 2007, according to the University of Hawai‘i 2011 *Online Rainfall Atlas of Hawaii* (Giambelluca et al. 2013). The mean monthly rainfall varied between 1.4 mm (0.06 inch) in June and 82.4 mm (3.24 inches) in January. This pattern of rainfall and low annual precipitation rate once sustained a lowland, dry shrubland, and grassland native ecosystem (Pratt and Gon 1998).

Vegetation with the project area includes fallow sugarcane (*Saccharum officinarum*) fields that have become overgrown with *koa haole* (*Leucaena leucocephala*), wild bitter melon (*Momordica charantia*), and other invasive trees, vines, and grasses.

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area's soils consist of Alae cobbly sandy loam, 0 to 3 percent slopes (AcA), Pulehu silt loam, 3 to 7 percent slopes (PpB), Pulehu cobbly clay loam, 0 to 3 percent slopes (PtA), and Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2) (Figure 5).

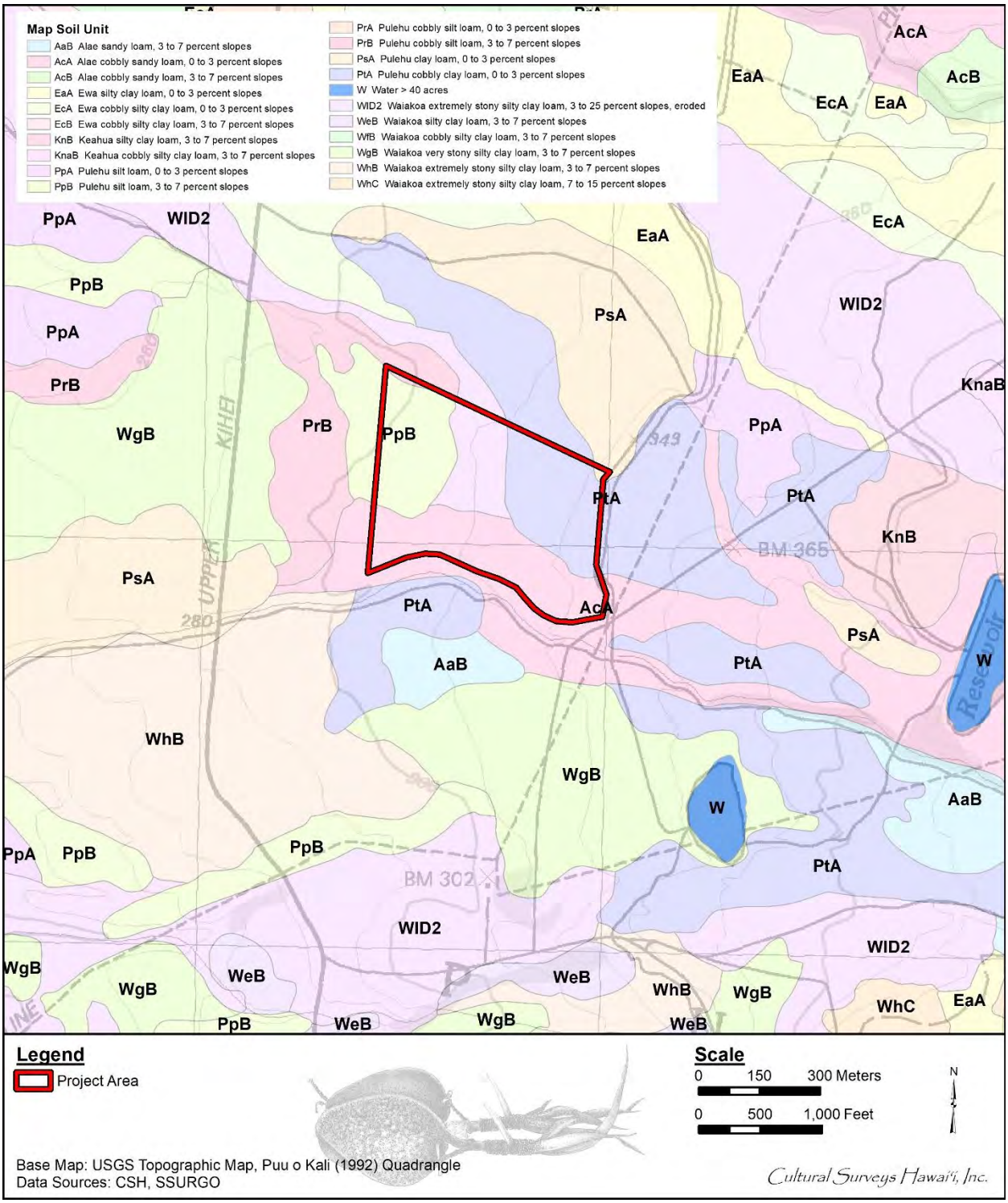


Figure 5. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (U.S. Department of Agriculture 2001)

Alae Series soils are described as:

> This series consists of excessively drained soils on alluvial fans on the island of Maui. These soils developed in volcanic ash and recent alluvium derived from basic igneous rock. They are nearly level to gently sloping. Most areas have cobblestones on the surface. Elevations range from 50 to 600 feet. The annual rainfall amounts to 12 to 20 inches. The mean annual soil temperature is 74° F. Alae soils are geographically associated with Ewa, Pulehu, and Waiakoa soils.
>
> These soils are used for sugarcane and pasture. Small areas are used for truck crops. The natural vegetation is feather fingergrass, kiawe, and uhaloa.(Foote et al. 1972:14)

Pulehu Series soils are described as:

> This series consists of well-drained soils on alluvial fans and stream terraces and in basins. These soils occur on the islands of Lanai, Maui, Molokai, and Oahu. They developed in alluvium washed from basic igneous rock. The soils are nearly level to moderately sloping. Elevations range from nearly sea level to 300 feet. The annual rainfall amounts to 10 to 35 inches. The mean annual soil temperature is 74° F. Pulehu sops are geographically associated with Ewa, Jaucas, Kealia, Lualualei, Waialua, and Mala soils.
>
> These soils are used for sugarcane, truck crops, pasture, homesites, and wildlife habitat. The natural vegetation consists of bermudagrass, bristly foxtail, fingergrass, kiawe, klu, lantana, koa haole, and sandbur. (Foote et al. 1972:115)

Waiakoa Series soils are described as:

> This series consists of well-drained soils on uplands on the island of Maui. These soils developed in material weathered from basic igneous rock. The upper part of the profile is influenced by volcanic ash. These soils are gently sloping to moderately steep. Elevations range from 100 to 1,000 feet. The annual rainfall amounts to 12 to 20 inches; most of it occurs in winter. The mean annual soil temperature is 74° F. Waiakoa soils are geographically associated with Keahua and Keawakapu soils.
>
> These soils are used for sugarcane, pasture, homesites, and wildlife habitat. The natural vegetation consists of buffelgrass, feather fingergrass, ilima, kiawe, uhaloa, and zinnia. (Foote et al. 1972:126)

1.3.2 Built Environment

The current project area remains undeveloped and consists entirely of fallow commercial sugarcane fields and unimproved field roads. The adjacent quarry site includes infrastructure and equipment that is used to quarry, transport, refine, and store quarry products. Infrastructure includes crushing equipment, conveyors, office and maintenance buildings, and storage buildings. The Puunene Armory and Maui Raceway Park are located west of the project area.

Section 2 Methods

2.1 Field Methods

CSH completed the fieldwork component of this AIS under archaeological permit number 22-02, issued by the SHPD pursuant to HAR §13-13-282. Fieldwork was conducted between 27 December 2022 and 29 December 2022 by CSH archaeologists Jonas Madeus, B.A., Jay Rapoza M.A., and Trevor Yucha, B.S., under the general supervision of Hallett H. Hammatt, Ph.D. This work required approximately seven person-days to complete. Fieldwork included a 100 percent coverage pedestrian inspection of the project area, subsurface testing, and global positioning system (GPS) data collection.

2.1.1 Pedestrian Inspection

A 100 percent coverage pedestrian inspection of the project area was completed by CSH archaeologists. The survey was completed using pedestrian transects that were spaced every 10 m. Ground visibility was excellent throughout the project area, which consisted of fallow sugarcane fields that were last planted in 2016. No historic properties were identified on the surface of the project area.

2.1.2 Subsurface Testing

Prior to the start of fieldwork, CSH submitted a proposed AIS testing strategy and methodology to the SHPD for review (see Appendix B). The SHPD accepted the AIS testing strategy via HICRIS comment on 8 December 2022.

The subsurface testing program was backhoe assisted and involved 20 test excavations. In general, linear trenches measuring approximately 6.0 m (20.0 ft) long and 1.5 m (4.9 ft) wide.

A stratigraphic profile of each test excavation was drawn and photographed. The observed sediments were described using standard USDA soil description observations/terminology. Sediment descriptions included Munsell color; texture; consistency; structure; plasticity; cementation; origin of sediments; descriptions of any inclusions, such as cultural material and/or roots; lower boundary distinctiveness and topography; and other general observations. Where stratigraphic anomalies or potential cultural deposits were exposed, these were carefully represented on test excavation profile maps.

2.1.3 GPS Data Collection

Test excavations and points of interest were recorded with a Trimble Geo XH mapping grade GPS unit with a TSCI Datalogger and real-time differential correction. This unit provides sub-meter horizontal accuracy in the field. GPS field data was postprocessed, yielding horizontal accuracy between 0.5 and 0.3 m. GPS location information was converted into GIS shape files using GPS Pathfinder Office Software, Version 5.9, and graphically displayed using ArcGIS Desktop 10.6.1.9270.

2.2 **Research Methods**

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai‘i, the Hawai‘i State Archives, the Mission Houses Museum Library, the Hawai‘i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai‘i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona ‘Aina database (Waihona ‘Aina 2000). This research provided the environmental, cultural, historic, and archaeological background for the project area.

2.3 **Disposition of Materials**

No materials were collected during AIS fieldwork that will require curation. All data generated during the course of fieldwork will be stored at the CSH offices.

Section 3 Background Research

The division of Maui's lands into political districts occurred during the rule of Kaka‘alaneo, under the direction of his *kahuna* (chief), Kalaiha‘ōhi‘a (Beckwith 1970:383). This division resulted in twelve districts, or *moku*, during traditional times: Kula, Honua‘ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko‘olau, Hāmākualoa, Hāmākuapoko, Wailuku, Kā‘anapali, and Lāhainā. The current project area is located on the western flank of Haleakalā in the *moku* of Kula and *ahupua‘a* of Pūlehunui. Overall, Pūlehunui Ahupua‘a begins at Kilohana Peak, on the summit ridge of Haleakalā, and ends at a mid-point on the west shore of the central plains at a shared boundary with Waikapū Ahupua‘a, encompassing a total area of 16,687.78 acres (McCully 1879).

3.1 Traditional and Historical Background

3.1.1 Mythological and Traditional Accounts

While the mythological and traditional accounts of the area are relatively scarce, an analysis of the *wahi pana* (place names/sacred sites) meanings for the region may yield some insight into the patterns of life in the area prior to Western contact (Table 1). In *Native Planters in Old Hawaii,* E. S. C. Handy et al. (1991:23-24,42) summarizes the relationship that traditional Hawaiians have had with the natural environment best in the following passage:

> The sky, sea, and earth, and all in and on them are alive with meaning indelibly impressed upon every fiber of the unconscious as well as the conscious psyche. Hawaiian poetry and folklore reveal this intimate rapport with the elements (Handy et al. 1991:23-24)
>
> (T)he relationship which existed from very early times between the Hawaiian people … is abundantly exemplified in traditional mele (songs), in pule (prayer chants), and in genealogical records which associate the ancestors, primordial and more recent, with their individual homelands, celebrating always the outstanding qualities and features of those lands. (Handy et al. 1991:42)

The provided place names, together with the environmental data, suggest that the lands of coastal Pūlehunui were rich in marine resources. Previous research on pre-Contact occupation in Kula District (Kolb et al. 1997) has suggested that most permanent habitations were in the uplands with a smaller permanent population located along the coastline. While a reconstruction of the coastal archaeological landscape of Kula Moku underscores the importance of the uplands as a focus of agriculture and habitation, Hawaiian traditions and the presence of four fishponds are evidence that the coastal environs were also a focus of settlement and marine resource collection.

Lands surrounding the current project area were also a site of conflict between the Hawai‘i Island chief Kalani‘ōpu‘u and Maui Island chief Kahekili and is perhaps an explanation for the origins for such place names as "Waiakoa" and "Keāhuaiwi".

The earliest account concerning Kīhei and Hawaiian politics is given by Samuel Kamakau (1961:70) during the time of Alapa‘i and Kekaulike:

> Alapa‘i sailed from Kohala on Hawai‘i...But when he landed at Mokulau in Kaupō (Maui) and heard that Ke-kau-like was dying, he gave up all thought of war and

Table 1. Place names documented in the vicinity of the project area (from Pukui et al. (1974) unless otherwise noted)

Place Name	Meaning/Translation
Alakoa	*Lit.,* “soldier’s street” (p. 9)
Kalaepohaku	*Lit.,* “the stony promontory” (p. 72-73)
Kale‘ia	*Lit.,* “the abundance”, possibly in reference to the resources available from the fishponds and offshore fishing grounds (p. 76)
Kalepolepo	*Lit.,* “the dirt” (p. 77)
Ka‘ōpala	*Lit.,* “the rubbish”; dividing line between Pūlehu Nui and Waikapū Ahupua‘a (p. 86)
Keāhuaiwi	*Lit.,* “the bone pile”; the name of a gulch immediately adjacent to and north of Waiakoa Gulch (p. 101)
Keālia	*Lit.,* “salt encrustation”; a pond near Kīhei and major salt pan location (Sterling 1998:95)
Kīhei	*Lit.,* “cape or cloak”; sandy point and boundary marker between Pūlehu Nui and Waikapu (Sterling 1998:255); commonly used place name for the South Maui area
Kīheipūko‘a	*kīhei* literally translates as “cape or cloak” and *pūko‘a* literally translates as “coral head”; Kīheipūko‘a was a place near Keālia between Kalepolepo and Ma‘alaea (Sterling 1998:257)
Kohemālamalama	*Lit.,* “bright vagina”; also the ancient name for Kaho‘olawe
Kō‘ie‘ie	*Lit.,* “a plaything for floating in the rapids”, ancient name of Kalepolepo (Sterling 1998:252)
Kolaloa	*Lit.,* “much sexual excitement”, the name of the gulch that bisects the project area
Kula (*moku*)	*Lit.,* "plain"; always an arid region (Handy in Sterling 1998:242)
Pūlehu (gulch) Pūlehunui (*ahupua‘a*)	*Lit.,* “broiled”, possibly in reference to abundant sweet potato cultivation in the uplands (p. 193) “large *pūlehu*”
Waiakoa	*Lit.,* “water (used) by warrior”; the name of the gulch of the project area (p. 220)

> wished only to meet Ke-kau-like and his (half) sister Ke-ku‘i-apo-iwa-nui...He landed at Kīheipukoa with all his chiefs and fighting men...While he was at Kīhei, Alapa‘i heard that the ruling chief of Oahu was making war upon Molokai. Most of the chiefs of Molokai...were of Hawai‘i...Alapa‘i's sympathy was aroused, for these were his own brothers and children (relatives), and he made ready to go to their help on Molokai. (Kamakau 1961:70)

Other accounts involve the continuing conflict between Kahekili of Maui Island and Kalani‘ōpu‘u of Hawai‘i Island during the late 18th century. Following a losing battle at Kaupō in 1775, Kalani‘ōpu‘u dedicated several war heiau on Hawai‘i Island to aid in the defeat of Kahekili. Upon hearing this news Kahekili sent for the kahuna (priest) Kaleopu‘upu‘u who directed construction of the *heiau* of Kaluli and Pu‘uohala on the north side of Wailuku.

In 1776, the army of Kalani‘ōpu‘u landed at Keoneo‘o‘io, with their war canoes extending to Makena at Honua‘ula and proceeded to ravage the countryside. Kalani‘ōpu‘u landed with additional forces at Kīhepuko‘a at Kealia to Kapa‘ahu, 800 strong and eager to drink the waters of Wailuku:

> Across the plains of Pu‘u‘ainako (Can-trash-hill) and Kama‘oma‘o shone the feather cloaks of the soldiers … Ka-hekili was at Kalanihale just below Kihahale and above the plateau of Ka‘ilipoe at Pohakuaokahi … Kaleopu‘upu‘u [said] to Ka-hekili, “The fish have entered the sluice; draw in the net.” (Kamakau 1961:85)

The forces of Kahekili descended upon and destroyed the soldiers of Kalani‘ōpu‘u, slaying the Alapa (elite soldiers of Kalani‘ōpu‘u) on the sandhills at the southeast of Kalua. Only two men escaped to Kīheipuko‘a to tell Kalani‘ōpu‘u the news of their defeat. After a second day of warfare Kalani‘ōpu‘u sued for peace and was granted such by Kahekili and his messengers at Kīheipuko‘a (Kamakau 1961:88-89).

Coastal Pūlehunui also shows a few vestiges of the lifestyles and subsistence activities of the *maka‘āinana* (commoner) that lived there as well as the works of powerful *ali‘i*. Keālia Pond has been known as a source of high-quality salt from the pans in its immediate vicinity. In *Ancient Sites of Maui, Moloka‘i, and Lana‘i,* author Van James (2002:71) states, in reference to Keālia Pond:

> It is also the name and site of a former fishpond. Little is known about the ancient history of Keālia fishpond, but judging from its size, it must have been an important producer of fish stock, particularly *awa* (milkfish) and *‘ama‘ama* (mullet). Ditches and sluice gates were built at least 400 years ago to let these and other nearshore fish into the pond. A *ko‘a* (fishing shrine) or possible *heiau* platform stands near the site. (James 2002:71)

Given its location on the leeward shores of the central isthmus of Maui, and its regular access to the freshwater runoff emanating from Waikapū Stream to the north and Kolaloa Gulch to the southeast, the area had access to many resources (salt, fish, irrigation, etc.) valued and utilized by the population. This wetland environment also attracts many species of waterfowl in the winter months when water levels in the pond rise with seasonal flooding. These would have also served as a potential source of nourishment for subsistence communities in the region (James 2002:72).

Further testament of resource gathering in the area comes from neighboring Kō‘ie‘ie Fishpond (Figure 6) which can still be seen along the Kīhei coastline. This fishpond was once part of a broader distribution of these types of structures along the coast. To this effect James (2002:73,74) states:

> In ancient times at least three or four *kuapā* (walled) fishponds were built along the Kīhei ("cloak") coastline. With the exception of Ko‘ie‘ie pond, the names of the other ponds have been lost, and little is known about any of their histories. In such cases it was said that *Menehune* constructed them.
>
> It [Kō‘ie‘ie] is a small pond of three arces. At low tide, another fishpond ruin can be seen just south of Kō‘ie‘ie Fishpond, and still further south along the coast is yet another nameless ancient pond wall. (James 2002:73,74)

The associations of these fishponds to the *menehune*, placing their times of construction in deep antiquity, suggest that this site may have been in use in very early times. What is known regarding the fishponds here is that they had been rebuilt several times prior to, and during the first days of, Western contact. To this effect (James 2002:73-74) documents that:

> It is here at Kalepolepo that Kamehameha I is said to have beached his canoes for battle against Central Maui. The beaches were black with his fleet, and the Waikapū Stream that empties into nearby Keālia Pond was declared *kapu.* Later, Kamehameha, who noticed Kō‘ie‘ie to be in disrepair, had the fishpond rebuilt. It is recorded that chief ‘Umilīloa, in the mid-1500s, also had the pond walls rebuilt. (James 2002:73-74)

Given its history of rehabilitation from conquering Hawai‘i Island chiefs, it is believed that the fishpond at Kō‘ie‘ie was "a royal pond always stocked with the best fish" (James 2002:74). Further associations between Hawaiian royalty and Kō‘ie‘ie Fishpond are also exemplified by a story from the early historic period when Kihawahine, the family *‘aumakua* of the Kamehameha line of chiefs, appeared at Kō‘ie‘ie Fishpond in saffron-yellow robes following the death of one of Kamehameha's sons at Kalepolepo in 1815 (James 2002:74).

3.1.2 Early Historic Period

Kīhei was one of the locations visited by Captain George Vancouver. A monument at Mai Poina ‘Oe Ia‘u Beach Park in Kīhei commemorates Vancouver's onshore expedition in 1792, when he first met the ruling chief Kahekili. With its sheltered coastline and easy access to upcountry resources over a vast slope, Kīhei would continue to be a common stop for visiting ships.

During the early and middle 1800s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease; and nucleation around the developing port towns. The traditionally Hawaiian population was largely dispersed and, although there were royal centers and areas of more concentrated population, these areas never came close to rivaling the populations of the historic port towns that developed on Hawai‘i's shorelines during the 1800s.

In this regard, Kuykendall (1938) notes that in the period from 1830 to 1854:

> The commercial development during this period, by magnifying the importance of a few ports, gave momentum and direction to a townward drift of population; the



Figure 6. Ko‘ie‘ie Fishpond as viewed from the shore, near former site of Kalepolepo (James 2002:73)

> population of the kingdom as a whole was steadily going down, but the population of Honolulu, Lahaina and Hilo was growing. (Kuykendall 1938:313)

Kuykendall's observation likely captures the demographic pattern at the Kalepolepo entrepot, a hub of early historic activity for Kīhei and eventually all of Kula Moku, located approximately one mile to the south of the current project area (Kolb et al. 1997:69). The development of Kalepolepo as an entrepot and a focus of Christian life in the 1840s and 1850s most likely increased the population in the immediate vicinity above the pre-Contact population figures, contrary to the island-wide trend of depopulation. That the population and areal extent of the Kalepolepo community reached its zenith during the mid-1800s, appears to be supported by Kolb et al. (1997:68):

> The ancient village of Kalepolepo was relatively small, and was built around an economy primarily based upon the exploitation of ocean resources--primarily the excellent fishing grounds as well as three large fishponds. However, as the number of visiting ships increased, Kalepolepo soon became an important provisioning area. By 1850 we know that the economic opportunities were attracting a number of European entrepreneurs. (Kolb et al. 1997:68)

In 1820 the whaling industry was introduced in Hawai‘i. Although the whaling trade centered on Lāhainā, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that "From the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei]." The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs and in particular the long-lasting Irish potato.

After 1830, dryland agriculture in the old Kula District expanded with a focus on Irish potato cultivation. The California Gold Rush of 1849 further intensified the demand as a California-Hawai‘i potato trade began to flourish. Kula became the area of highest potato production and was known as "the potato district" (the area between 2000 and 5000 ft. elevation). During this time, sugar cultivation and ranching were established in the Kula region. According to Helen Wong Smith, sugar was present prior to 1846, with six sugar producers operating on the slopes of Haleakalā, and ranching occurred in the area prior to the 1840s (Brown and Haun 1989:C-7 and C-6). Much of the produce, sugar, and livestock moved down the Kalepolepo and Kekuawaha‘ula‘ula Trails to the landing at Kalepolepo, just south of the project area. (Donham 1992:5) notes that the inundation of land clearing and cultivation associated with the Gold Rush resulted in "deforestation [which] adversely affect[ed] the amount of rainfall in the district, and periods of drought became more common."

Around 1849 John Halstead built the Koa House at Kalepolepo in Kīhei. The building, part store and part residence, thrived on both the trade of the whaling industry and the then thriving potato industry. During the Gold Rush years, the store became "an emporium for Irish potatoes" and served as a gathering place for the whaling sailors (Burgett and Spear 1995:6). David Malo created a balance for the boisterous whaling crowd by constructing the Kilolani Church at Kalepolepo around 1852. Potato production thrived in Kula from 1830-1850 until successful potato cultivation and production in California and Oregon resulted in a decline in the Hawai‘i trade (Burgett and Spear 1995:6-7). Halstead ran his store until 1876, closing shop when the potato industry diminished (Janion 1977:25-31).

3.1.3 The Māhele and the Kuleana Act

The most significant change in land-use patterns and allocation came with the Māhele of 1848 and the privatization of land in Hawai‘i. This action hastened the shift of the Hawaiian economy from that of a subsistence-based economy to that of a market-based economy. During the Māhele, all of the lands in the Kingdom of Hawai‘i were divided between *mō‘ī* (king), *ali‘i* (chief), *konohiki* (overseer of an *ahupua‘a*), and *maka‘āinana* (tenants of the land) and passed into the Western land tenure model of private ownership. On 8 March 1848, Kauikeaouli (Kamehameha III) further divided his personal holdings into lands he would retain as private holdings and parcels he would give to the government. This act paved the way for government land sales to foreigners, and in 1850 the legislature granted resident aliens the right to acquire fee simple land rights (Moffat and Fitzpatrick 1995:41-51).

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay in cash an amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent was issued that gave full title of ownership to the tenant. But by 1850, the government of Hawaii was offering land for sale to both Native Hawaiians and foreigners. Such lands were referred to as Royal Patent Grants or as Grants.

A total of 13 land commission claims were made in Pūlehunui, and nine were awarded (LCAs 0327B, 9671, 9019, 4672, 9672, 9673, 8866, 4567, and 5230). Only one of these awards, LCA 5230, is immediately surrounding and inclusive of the current project area (Figure 7 and Figure 8Supporting testimony given to the land commissioners indicate that the 1668.78 acres of LCA 5230 were awarded to Keaweamahi by the King in 1843 and never disputed. The testimony given by Kaauwai and Kaiakekaua additionally maintained that there were a great many natives that lived within the *ahupua‘a* of Pūlehunui. The majority of the lands awarded were *kula* used for potato (both sweet potato and Irish potato) cultivation and were primarily located along the upper elevations of Kula Moku (Waihona ‘Aina 2000).

In 1879, following the initial division of lands during the Māhele, the western boundary of Pūlehunui was disputed by the owners of adjacent lands in Waikapū. The western boundary of Pūlehunui that was specified by the Commissioner of Boundaries and surveyed included approximately 2,000 feet along the coastline from a sand spit known as Kīhei to a point of rocks called Kalaepōhaku. The eastern boundary line that was being claimed for Waikapū, however, would cut Pūlehunui off from the ocean, this being the more specific issue in the boundary dispute. Testimony was given by *kama‘aina* (Native Hawaiian residents) of Pūlehunui and/or lands next to it regarding their familiarity with the boundaries of Pūlehunui Ahupua‘a. All witnesses, with the exception of one, consistently stated the line between Pūlehunui and ‘Ōma‘opio was along a ravine or *kahawai*. The line carried along this *kahawai* and continued to follow the same natural boundary to Ka‘opala at the bottom of the East Maui slope. Ka‘opala meets the bottom of the West Maui slope and creates a depression and this is where the boundary turns Mid- to course, following the natural depression or shallow *kahawai* to the sea. The court agreed that the boundary likely followed this natural line and concurred with the findings of the Commissioner of Boundaries. As a result, the original 2,000 feet of coastline from Kīhei to Kalaepohaku that was

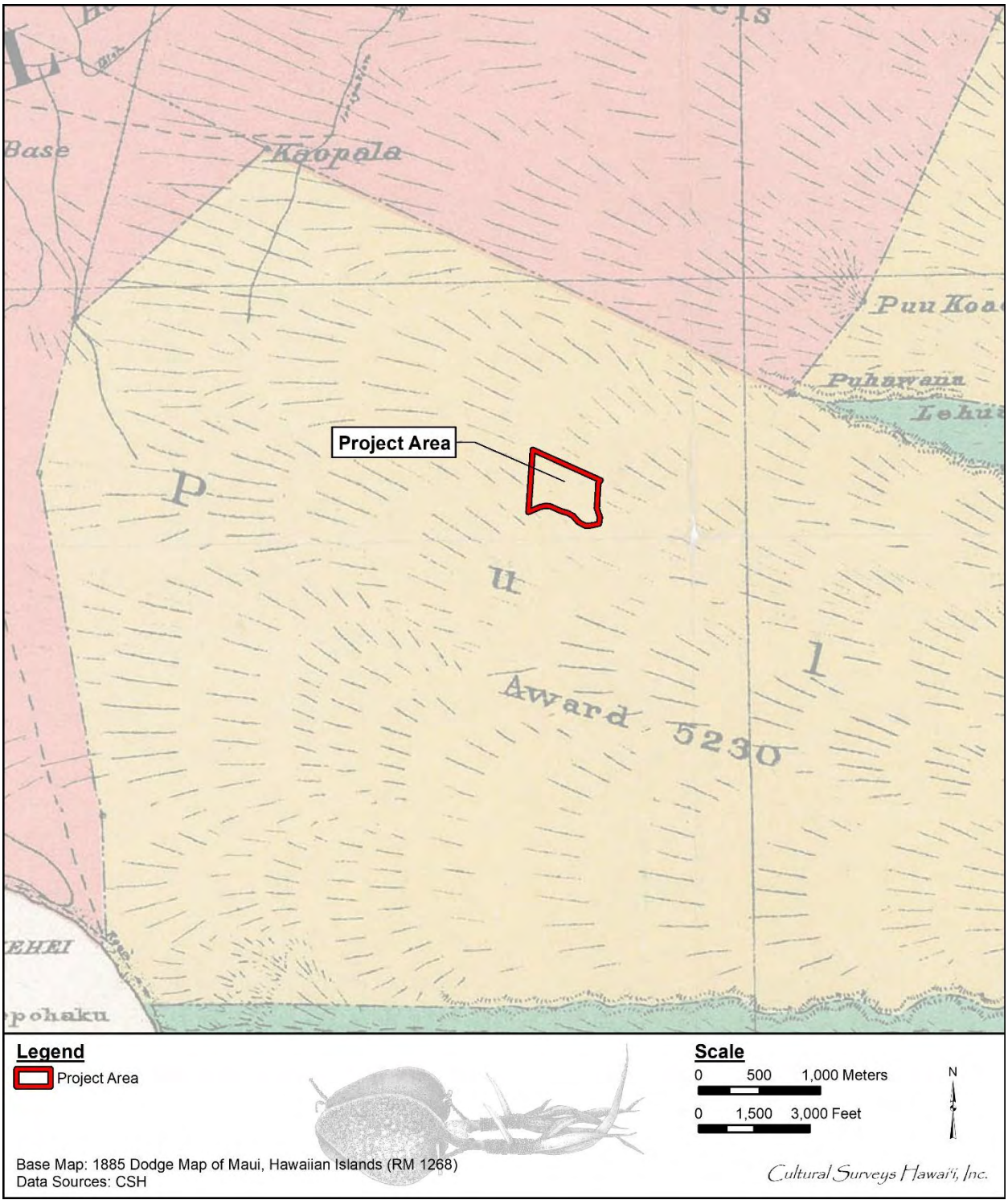


Figure 7. Portion of the 1885 Dodge map of Maui (RM 1268) showing the location of the project area within Award 5230 (Dodge 1885)

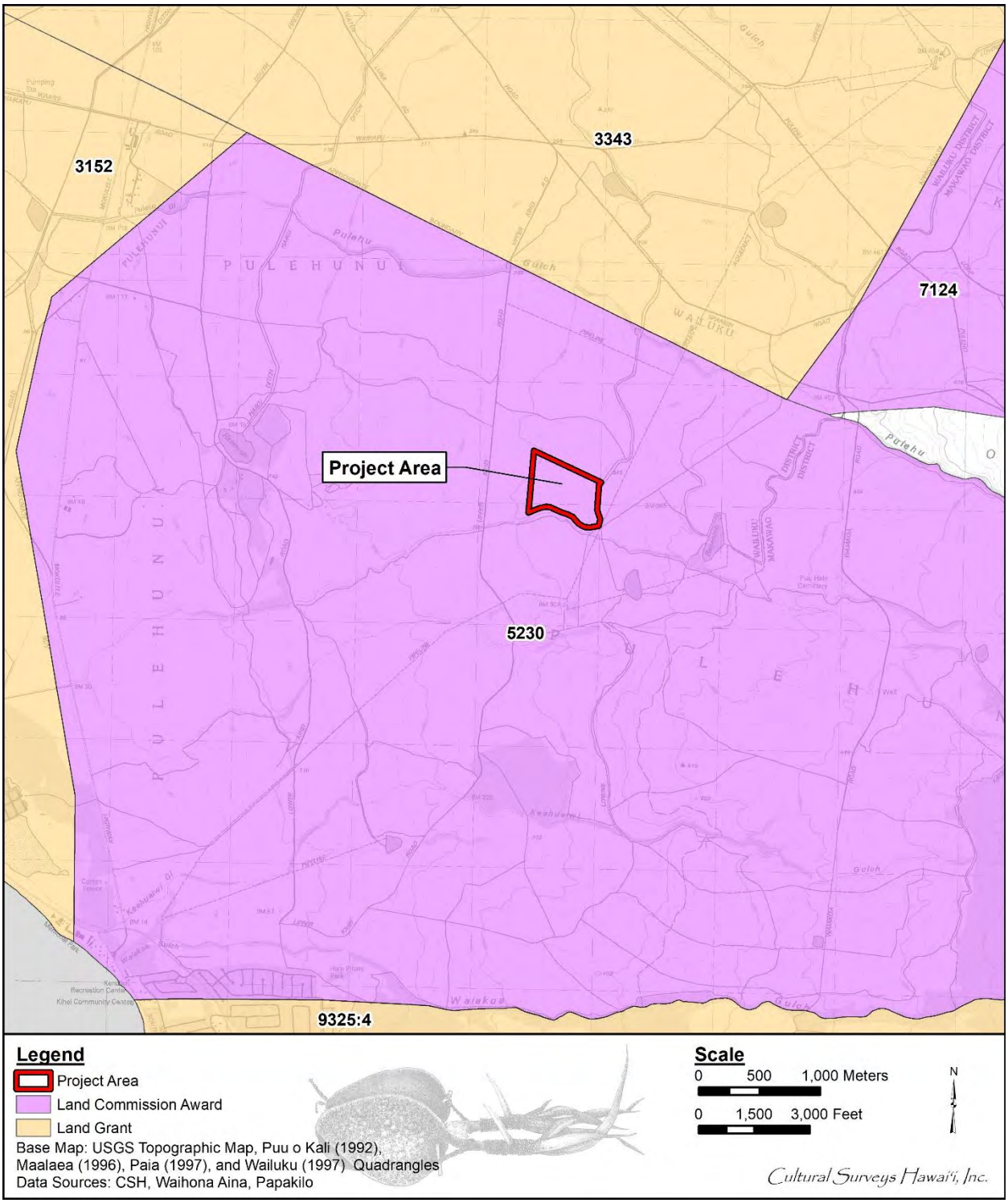


Figure 8. USGS topographic quadrangle map with an overlay of Land Commission Awards and Land Grants recorded in the vicinity of the project area (U.S. Geological Survey 1992, 1996, 1997a, 1997b)

attributed to Pūlehu Nui Ahupua‘a was upheld. (McCully J Court Opinion, in Sterling 1998:254-257).

3.1.4 Late 1800s through Early 1900s

By the time John Halstead closed shop in 1876, the boom years of Kalepolepo had passed. By 1880 the government survey of the Kula area showed the demarcation of only a few LCAs and those who had received awards had replaced them with grants. Lower Kula consisted primarily of pastureland for ranching (Wong Smith in Donham 1992:B-6). Kennedy (1992:9) notes that at this time *kiawe* (*Prosopis pallida*) was imported to feed cattle and provide wood.

Regarding the settlement at Kalepolepo and the impact of the changes associated with the change to ranching on the general area known as Kīhei, Clark (1980:48) comments:

> Halstead finally closed his store in 1876, as demands for his goods had steadily decreased, and moved to Ulupalakua . . . By this time the once thriving Hawaiian village at Kalepolepo had been almost totally abandoned as well. The slopes of Haleakala had gradually become denuded of their forests and torrential rains had caused heavy soil runoffs into the Kalepolepo shoreline. Cattle had trampled down the brush and grassy fields, causing sand dunes to drift and fill up the pond. Clouds of dust filled the air instead of cooling winds. Except for a handful of fishing families, Kalepolepo [and likely the Kīhei area in general] was deserted (Clark 1980:48).

The shift in the economics of coastal Pūlehunui to ranching was also noted by E.S. Craighill Handy. He noted that large sections of "Crown Lands" which had not been claimed as *kuleana* [family homestead property] during the Māhele (1848 and later) were given by the Kingdom to various Pūlehunui ranchers. The *kiawe* tree was imported and cultivated around 1840 as a source of cattle feed, and the low plains of Pulehunui were soon covered in *kiawe* forests (Handy and Handy 1972:510-511). In this manner, upland agricultural pursuits gradually gave way to ranching activities as the demand for locally produced agriculture dropped with the closure of the nearby entrepot at Kalepolepo.

Sugar would soon fill the void, and in late 1898 the Kīhei Plantation Company, Ltd (KPC) was organized with a capitalization of 60,000 shares at $50 par value. Water was the most critical component in the decision to locate sugar cultivation along the leeward shores of Maui's arid coastline. The discovery of an ample supply of irrigation water early in 1898 led to the drilling of a large, successful well, but the supply of water was limited (Stearns and Macdonald 1942). Over the next four years, two ditches were developed to supplement the water needs of the 4,873 acres of sugar under cultivation at Kīhei (Gilmore 1936).

The history of the Kīhei Plantation Company begins with the annexation of the Hawaiian Islands by the United States in 1898. Sugar prices were rising due to the outbreak of war between the United States and Spain over the colonies in Cuba, Puerto Rico and the Philippines. Henry P. Baldwin, of the Maui plantation of HC&S, entered into a partnership with O‘ahu businessman Benjamin F. Dillingham to convert Lorrin A. Thurston's landholdings in Kīhei into a sugar enterprise (Dean 1950:62).

Up to that time, sugar cultivation within the central isthmus of Maui was centered around the main towns of Wailuku and Kahului. Water tunneled from springs in the West Maui Mountains flowed through ditches in Wailuku to irrigate fields as far away as Mā‘alaea. Water from the windward rain belt of Kailua ran through a network of ditches from East Maui to Pā‘ia, to irrigate fields in Pu‘unēnē (Wilcox 1996).

The McCandless Brothers drilled a successful Maui-Type well (U.S.Geological Survey Well 14 / Hawaiian Commercial & Sugar Well K1) in 1899. It was located just inland from the coast in North Kīhei, between Keālia Pond and the Waiakoa Homestead Lands. This well was drilled vertically to approximately 60 feet through the Honomanū basalts, and tunneled laterally over 1,500 feet in order to skim 10 million gallons of fresh irrigation water per day from sources beneath the Kīhei plains (McCandless 1936).

The plantation company in Kīhei built bridges to span streams and gulches flowing through the company fields. The plantation had planned the construction of a mill in North Kīhei, and ordered a plant to be built. It was decided that the new HC&S mill under construction at Pu‘unēnē would have more than enough capacity to mill all the cane from the Kīhei fields. The order for the mill was transferred to the ‘Ōla‘a Sugar Company in Hawai‘i, in exchange for a supply of steel rails for new railway requirements at Pu‘unēnē. A large-scale Kona storm hit the plantation on November 15th, 1900, and caused immense damage to both Kīhei and the HC&S fields in Pu‘unēnē. Bridges were knocked out, buildings were flattened, and washouts filled irrigation ditches with silt. Repairs were effected immediately, with the new HC&S mill at Pu‘unēnē commencing operations January 29, 1902 (Dean 1950).

The Kihei Plantation Company had the McCandless Brothers drill two or three additional Maui-Type wells on the north side of reservoir K2 at the discharge end of the existing pipeline of Well 14. The plantation in Kīhei failed in 1908 before the well site was fully developed. It would have been named the HC&S K2 well, and would have included a large pumping station (Stearns and Macdonald 1942).

3.1.4.1 Railway Operations

The Kihei Plantation Company planned to construct a railway to move their cane. The sugar agency of William Dimond & Company placed an order for a locomotive from the Baldwin Locomotive Works in Philadelphia. The order was placed April 1899, and the plantation locomotive “Haleakala” was built and sent on to Maui (Condé and Best 1973).

By March of 1900, the first annual report of the Kihei Sugar Company stated, “It was our intention to complete the main [rail]road only as far as Camp #2, or for about 2 miles, but as the development of Camp #3 required pushing on of the road one and a half miles further, this has been done, having been completed the 15th of February” (Condé and Best 1973:230). An additional six miles of track connected the Kīhei wharf to the various well pumping stations, and north to meet up with HC&S track (Condé and Best 1973). Establishing the railroad at Kīhei made it possible to harvest and transport over two thousand tons of sugar in a single year (Figure 9(Dean 1950).

The laying of the railroad and the cultivation of the sugar cane was performed primarily by Japanese field labor. Kīhei’s plantation Camp #1 was set up inland of the Kīhei wharf and mooring pier. Two stables and a plantation store were located at Camp #1. Hospital services were provided

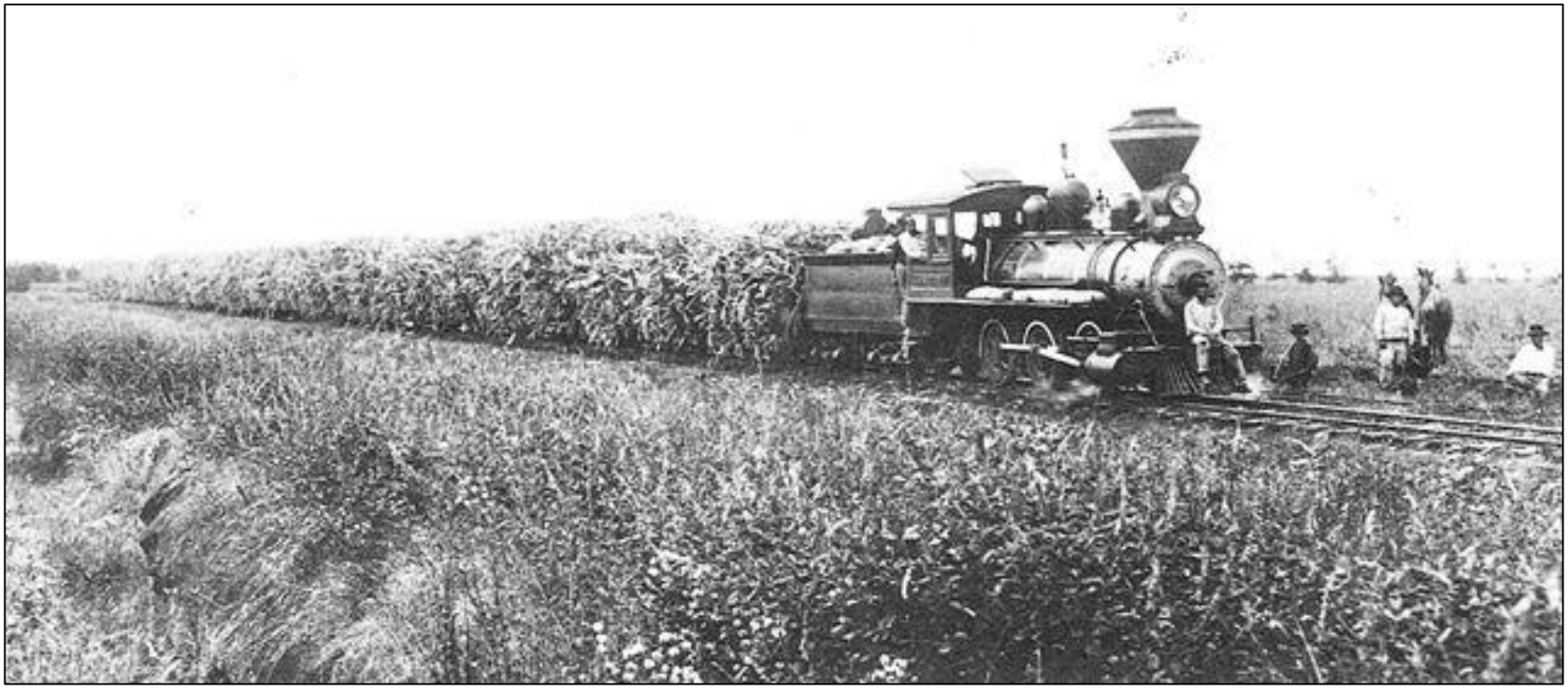


Figure 9. KPC locomotive “Haleakala” transporting cane from Kīhei fields to the mill at Pu‘unēnē, circa 1905 (Condé and Best 1973)

by HC&S in Pu‘unēnē. Kihei Camp #3 was located 2 ½ miles north of Kihei Camp 1 at Kolaloa Gulch, along the North Kīhei line of the HC&S railroad (Shoemaker 1907). A 1910 map of the HC&S planation in Pu‘unēnē depicts a portion of the field and rail network surrounding the project area (Figure 10).The “Upper Main R.R. Kihei” extended across Kolaloa Gulch between Increments 2 and 4 of the project area. A spur from this line extended through Increment 4 of the project area to the “K. No 4 Reservoir Ditch. Camp K-3, labeled as “Pump 3-K” is located adjacent to the project area along Makawao Road.

When the plantation was forced to close in 1908 due to diminished returns and underdeveloped water sourcing, the entirety of the company’s rolling stock was absorbed by a subsidiary of HC&S. This included a Baldwin 10-ton locomotive, two large flat cars, and approximately 235 cane cars. After this merger the rolling stock of the KPC was absorbed into the larger system that connected Kahului and Kihei to plantations further east of the central isthmus. After acquiring the locomotive, the name was changed from “Haleakala” to “Hawaiian Commercial & Sugar #4,” becoming renamed again in 1910 as “Kihei” (Figure 11) (Condé and Best 1973:230-231).

3.1.4.2 Water Source Development

The Lowrie Ditch project, named for former HC&S manager William J. Lowrie, brought an additional source of water to the Kīhei plains. His plan was to begin the ditch at the Pāpa‘a‘ea Reservoir, at the 1,000 ft. elevation, and maintain a four-foot drop per mile following the ditch’s initial plunge from the Kailua reservoir. Steep mountain gulches were traversed using the force of the constant weight of water flowing in a series of siphons. The Halehaku Gulch, at 250 feet deep, and the Māliko Gulch, at over 350 feet deep, were both crossed by giant siphons fabricated of three-eighths-inch iron, and set in place by Japanese laborers. At a weir located above Pā‘ia, the allocation of water began. The first tenth of the water flow in the Lowrie Ditch was divided out to the Pā‘ia Plantation (an 11/20ths share) and the Haikū Plantation (a 9/20ths share). The distance traveled, from Kailua to the plantation’s Kīhei boundary, was 21.9 miles (Thrum 1900).

More water was required from wells and the East Maui watershed. The manager for the Kihei Plantation Company, W.F. Pogue, asked the management of HC&S for an even larger allocation of water for the Kīhei lands. In 1901, Samuel T. Alexander ordered the construction of a new ditch, tapping the water sources from Nāhiku to Honomanū. It was determined that the Kihei Plantation Company would receive 2/9ths of the capacity from the enterprise (Figure 12(Dean 1950).

The Kihei Plantation Company failed to live up to the expectations of its promoters with an inadequate water supply as the key difficulty. With the waters of the Ko‘olau Ditch flowing to the Kīhei fields, production appeared to have hit its peak. Although 5,609 tons of sugar was delivered in 1903, high costs required a change of managers in Kīhei, and a reduction of the HC&S milling charge to $7 per ton. The incoming HC&S manager, Frank Fowler Baldwin, determined that the best course of action was to buy out the company for $375,000 (Condé and Best 1973).

In 1908, the lands of the Kihei Plantation Company were divided up between five new major business entities of HC&S; the Kailua Plantation Company (994 acres), the Kalialinui Plantation Company (923 acres), the Kula Plantation Company (996 acres), the Makawao Plantation Company (982 acres), and the Pulehu Plantation Company (978 acres) acquired the remaining acreage not included in the railroad right-of-way. Water rights reverted to HC&S, and were apportioned between the new plantations (Dean 1950). Sugar operations continued in North Kīhei until circa 1968, when HC&S leased lands to a corn research farm.

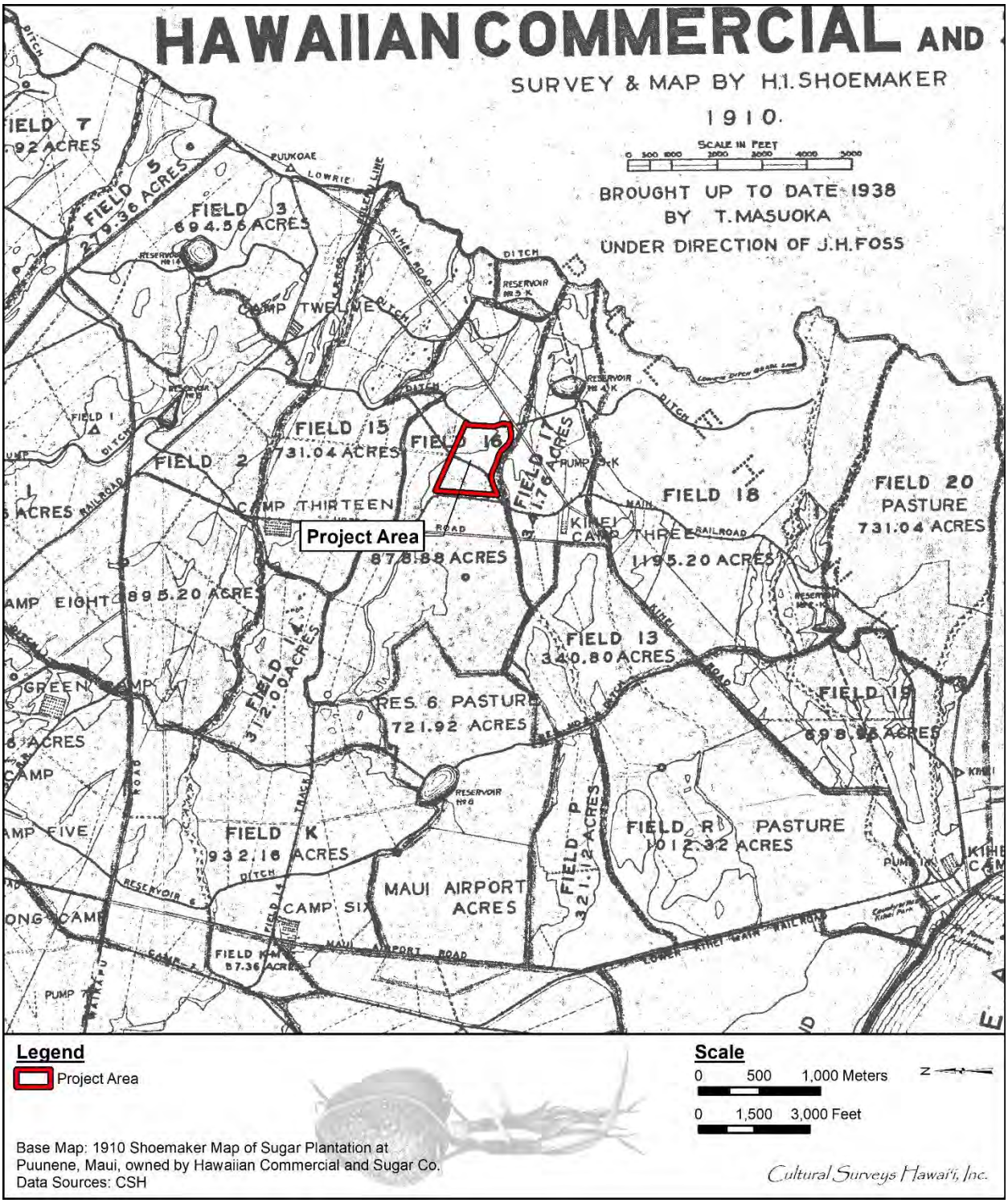
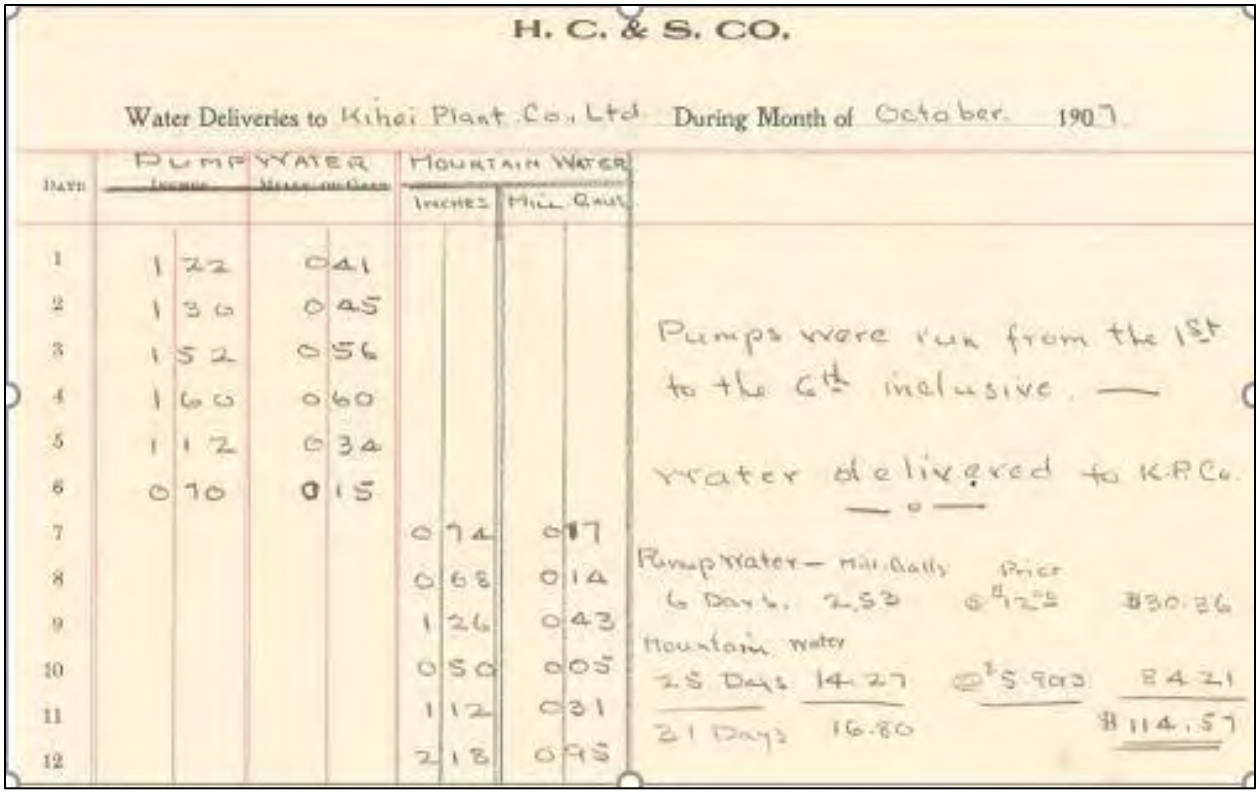


Figure 10. Portion of the 1910 Shoemaker map of the HC&S Plantation in Pu‘unēnē showing the current project area (Shoemaker 1910)



Figure 11.KPC locomotive servicing HC&S mill as “Hawaii Commercial & Sugar No. 4” (Condé and Best 1973:231)



H. C. & S. CO.

Water Deliveries to Kihei Plant Co. Ltd. During Month of October. 1907

Date	Pump Water Inches	Pump Water Mill. Gals.	Mountain Water Inches	Mountain Water Mill. Gals.
1	1 22	041		
2	1 30	045		
3	1 52	056		
4	1 60	060		
5	1 12	034		
6	0 70	015		
7			074	017
8			068	014
9			126	043
10			050	005
11			112	031
12			218	095

Pumps were run from the 1st to the 6th inclusive. —

Water delivered to K.P.Co.

— o —

Pump water — mil. Gals. Price

6 Days. 2.53 @ $12.25 $30.36

Mountain water

25 Days 14.27 @ $5.903 84.21

31 Days 16.80 $114.57

Figure 12. Portion of an accounting statement for water delivered to the Kihei Plantation Company in 1907 (CSH archives)

3.1.5 Early 1900s to Mid-1900s

The post-WWI years saw HC&S add electricity to some villages. HC&S completed the Waikapū well [Well 7] in 1926 - one of the largest deep wells in the world. The additional capacity of 40 million gallons per day (mgd) was instrumental in planning for more sugar and industry within Maui's central plains. On November 11, 1929, Inter-Island Airways, Ltd. began flying regularly scheduled flights between the Hawaiian Islands. Amphibious eight-passenger Sikorsky S-38 aircraft landed at Mā‘alaea Bay, taxied up a concrete ramp, and delivered passengers to waiting automobiles for the trip to Wailuku and points beyond (Saito 2008). By 1936, the airline had purchased three new sixteen-passenger Sikorsky S-43 aircraft to supplement their four S-38's (Kennedy 1937).

Harold T. Stearns traversed the island of Maui between 1932 and 1942, conducting studies of the geology and ground-water resources. Between 1939 and 1940, Gordon A. Macdonald completed geologic maps for the study. Their combined work highlighted the then-recent explorations for water in Pūlehunui as a source of drinking water and for dust control during construction of the airport (Stearns and MacDonald 1942). They reported that the isthmus of Maui "was without trees and covered with drifting sand prior to the planting of cane. Old residents report that red dust storms were nearly a daily occurrence. It seems possible that very little water existed under the Maui isthmus, prior to irrigation. If so, the annual pumping of 45.500 million gallons (average over the past 10 years) represents mostly return flow from the 78.271 million gallons of surface water imported for irrigation. [This measurement establishes that] recovery from wells is about 58% of surface water deliveries."

3.1.5.1 Pre-WWII Aviation History

By 1937, the Civil Aviation Authority (C.A.A.) for the Territory of Hawai‘i recommended an airport for Pu‘unēnē to accommodate the continued growth of commercial service. The site was approved by the U. S. Army, Inter-Island Airways (later Hawaiian Airlines), HC&S, the Kahului Railroad Company, and the C.A.A. (Balch 1938). Three intersecting runways were designed alongside the existing government roadway and railway lines connecting Kīhei Village to the HC&S mill and village at Pu‘unēnē.

By 1938, it was clear that Japanese aggression against mainland China was jeopardizing the political stability of the Pacific region (Morison 1951). Pacific Naval Air Bases (P.N.A.B.) construction engineers were assigned to reinforce United States military outposts across the Pacific. In Hawai‘i, the construction of new civilian airports at Kane‘ohe (O‘ahu), and Pu‘unēnē (Maui) was undertaken by U.S. Engineer Department (U.S.E.D.) contractors. Prior to 1940, thirteen separate defense-related construction projects were begun in the Hawaiian Islands, primarily at Pearl Harbor (Woodbury 1946).

The Hepburn Board, a commission of six officers and engineers reporting to the United States Navy, authorized the immediate military-backed expansion of an existing design for a civilian airfield at Pu‘unēnē. Quarters for a permanent utility squadron, as well as for rotating Carrier Air Service Units (CASU) crews, were hastily approved (Woodbury 1946). U.S. Engineer Department and Pacific Naval Air Base construction crews began work on June 17, 1940, building quarters and messing facilities for 500 men. The Navy used barracks at the National Guard Camp in

Paukūkalo while completing buildings at NAS Puunene (Shettle Jr. 1997). Two 50,000-gallon above-ground gasoline tanks were erected, and railroad spurs were laid to facilitate a direct supply line with the Kahului Harbor. As work progressed, a slew of change orders added bombproof revetments for aircraft storage, as well as bomb and ammunition magazines. By the time Pearl Harbor on O‘ahu was attacked, Naval Air Station Puunene was an active training base (Navy 1947).

The location of Utility Squadron Three (VJ-3) at the Pu‘unēnē airfield was found to be ideal for operations involving the use of radio-controlled aircraft for anti-aircraft training. The development of radio-controlled full-scale aircraft was code-named “Project Dog,” and began as a military program located on the east coast of the United States in the mid 1930’s (Fahrney 1982). “Project Dog” was moved to San Diego in 1938, and finally to the Navy’s Maui Airport at Pu‘unēnē early in 1940, in order to prove the practicality of radio-controlled assault drones. These were the earliest experiments leading towards the development of the guided missile.

Full-scale fortification of the Hawaiian Islands began in January 1940, immediately after President Franklin D. Roosevelt cancelled all trade agreements with Japan. On May 7, 1940, the U.S. Pacific Fleet was ordered out of the Port of Los Angeles, to be based at Pearl Harbor in the Territory of Hawai‘i. This action was designed as a deterrent against further aggression by Japan in the Pacific region (Morison 1951).

Lieutenant Robert F. Jones commanded VJ-3 at NAS Puunene and advanced the syllabus of testing radio-controlled aircraft to the point where a radio-controlled aerial torpedo was thought to be possible. By April 1941, the Navy’s efforts to develop a practical way to control drone aircraft from greater distances was in full swing (Rogers II 2002). In the middle of this research program, Navy Fighting Squadron VF-2 arrived at the Pu‘unēnē aerodrome for training purposes in April 1941.

Flying F2A Brewster “Buffalo” fighter aircraft, the “Flying Chiefs” of VF-2 trained on Maui for approximately two months, returning to sea with the U.S.S. Lexington to take part in operations to ferry aircraft and supplies to Midway Island. The training regime of VF-2 included the use of “unrestricted air space for gunnery and tactics and many nearby bombing and strafing targets” (Lacouture 1989). The target range was located at lower ‘Ulupalakua and the aircraft used practice bombs filled with lime powder and beach sand to mark their accuracy.

In May 1941, the 1st Battalion of the Army’s 299th Infantry Regiment was assigned to establish defensive positions along the exposed coastal areas of Maui. Tents housing the administrative section for the Army’s 24th Infantry Division, and the Fourth Platoon Signal Company, Aircraft Warning Air Corps Detachment, were located within a 14-acre section at the Maui Airport at Pu‘unēnē (Allen 1950).

Plans were drawn up to expand the airfield to a size large enough to support both a Navy carrier air group and an Army Air Corps bombardment group. On average, pre-war U.S. Navy air groups consisted of 90 aircraft, made up of scout, dive-bomber, fighter, and torpedo divisions. A pre-WWII Army Air Corps bombardment group, consisting of three squadrons of medium or heavy bombers, would have numbered about 30 aircraft (Morison 1953).

3.1.5.2 World War II (1941-1945)

With the outbreak of war between Japan and the United States, NAS Puunene became the command headquarters for both Navy and Army units on the island of Maui. Plantation heavy equipment and plantation operators worked side by side with U.S. Engineering Department personnel to accelerate construction of defensive positions and immediately lengthen runways at the base. The call for an immediate extension of the runways to military specifications involved extensive engineering to reroute miles of irrigation culverts for HC&S. The dispersion of facilities planned for NAS Puunene would come to utilize over 2,500 acres of land, and involve housing for over 5,000 men (Cotten 1945).

The attack on Pearl Harbor, December 7th, 1941, forced the "Project Dog" program at NAS Puunene to assign its research to safer bases on the mainland United States. Wartime operations for VJ-3 would concentrate exclusively on providing radio-controlled aircraft as realistic targets for fleet anti-aircraft gunnery training exercises (Rogers II 2002). Under wartime conditions, responsibilities for VJ-3 included maintaining an intense schedule of weather flights, rescue flights, and anti-submarine reconnaissance flights in the waters surrounding Maui.

Early in 1942, the first Carrier Air Service Unit, CASU-4, was commissioned at NAS Puunene, and the utility squadron personnel of VJ-3 were reinforced by Naval Air Station Officers. In June 1942, VF-72 (U.S. Navy Fighting Squadron 72), the first of over 150 squadrons of U.S. Navy fighter, bomber, and scout aircraft, arrived for advanced training prior to moving into forward combat areas (Wilcox 2004). For four days in early June 1942, as the Battle of Midway raged 600 miles to the northwest, NAS Puunene personnel were ordered into shelters and revetments, expecting bombing raids by Japanese aircraft sweeping across the Hawaiian archipelago (Vint 2000). With the success of American naval forces at Midway, the threat of a Japanese invasion of the Hawaiian Islands was postponed, and U.S. efforts to outfit military bases in the Hawaiian Islands for wartime training were redoubled.

Anti-aircraft gun emplacements and protective aircraft revetments were given top construction priority by the U.S. Pacific Naval Air Bases supervisors. Heavy equipment and civilian operators from Wailuku Sugar Company and Hawaiian Commercial & Sugar Company were employed at NAS Puunene, with their pay charged back to the U.S. government. Sugar milling at plantations across the Hawaiian Islands was confined to daylight hours until "blackout" procedures for night operations were approved (Allen 1950:289).

U.S. Engineering Department (U.S.E.D.) construction contractors were reinforced at NAS Puunene by additional Pacific Naval Air Bases (P.N.A.B.) personnel in July 1942. Domestic water pipelines were laid by HC&S to supply military camps being constructed at ten separate locations across the central Maui plains, including the Camp 6 location proximate to NAS Puunene. The main government road and the railroad lines that served the wharf at North Kīhei were rerouted, as NAS Puunene expanded. The U.S. Army National Guard 108th Regiment, 27th Infantry Division, took up defensive duties along Maui's coastlines beginning March, 1942, and occupied formal headquarters at NAS Puunene (Army 1948). On November 16, 1942, 400 men forming an advance echelon of the Navy's 39th Construction Battalion arrived at NAS Puunene, to begin construction of underground fuel bunkers, bombproof buildings, ammunition magazines and an aviation ground school (Cressy 1944).

The establishment in 1943 of NAS Puunene as a "Top Gun" school for fighter-aircraft tactics was based on the Navy's use of highly-decorated veteran fighter pilots, such as Commanders Edward "Butch" O'Hare, James "Jimmy" Flatley, and James "Jim" Thach to relay the latest intelligence from the front lines to new pilots rotating into combat (Feightner 1997). "Maui Group Local Naval Defense Forces", based at NAS Puunene, controlled the training airspace over the Kaho‘olawe aerial bombing ranges, and administered the training schedule (Lundstrom and Ewing 1990). Army National Guard Divisions were assigned to occupation, guard, and training stations in the Hawaiian Islands during World War II. Shoreline defenses held by the 27th Infantry Division on Maui were replaced by men of the 40th Infantry Division (U.S. Army 1947). As elements of both the 27th and 40th Divisions were combined and sent to the South Pacific for combat duty, they were replaced on Maui by regiments from the 33rd Infantry Division (Journal 1948). A resident of Maui during WWII said, "It was common to see groups of soldiers wearing their unit insignias all over Maui: the "Sunshine" [40th Division], and "Golden Cross" [33rd Division], and the last ones stationed here were the "Mohawks" [98th Division]"(Sanford 2004).

As of March 6 1943, the 48th Construction Battalion ("SeaBees") replaced the 39th C.B., and immediately began construction of a new sewer and water system for NAS Puunene (Turner 1945). Newsletters published by the 39th Seabees (*Shore Lines*) and the 48th Seabees (*Trade Wind*) were joined by an official NAS Puunene newspaper, "To All Hands" (later renamed *The Island Breeze*). The publisher of the "Maui News," Maui's leading civilian newspaper, printed a companion weekly named "The Valley Islander," which incorporated military news from all of the services based on Maui, including the 4th Marine Division in Kokomo (Sanford 2008). All military news in these papers was censored, but personnel changes, "scuttlebutt" gossip columns, and sports highlights featuring teams organized within military leagues on Maui attracted an avid readership.

The 127th SeaBees relieved the 48th SeaBees in May of 1944, and finished an extensive network of ammunition magazines located toward Kīhei of the main air base. The completion of expanded housing areas, a second CASU area, and additional "SeaBees" housing was accomplished before the end of 1944. Two Mobile Construction Battalion Units, CBMU 563 and CBMU 575, arrived to maintain the refrigeration and water purification systems.

On July 1, 1945, NAS Puunene personnel numbered 565 officers and 2,798 enlisted men, including seven Navy nurses, eight WAVES (Women Accepted for Volunteer Emergency Service) officers, and 92 WAVES enlisted personnel (Monthly Station Report of On-Board Personnel, NAS Puunene, "Confidential," 1 July 1945). Total aircraft on board numbered 271 (Monthly Station Report of On-Board Aircraft, "Confidential," 1 June 1945). The total number of structures built numbered over 300 (Cotten 1945).

Immediately following the August 1945 surrender of Japan to the military forces of the United States, facilities essential to the operation of Naval Air Station Kahului began to be removed from Pu‘unēnē. The bowling alley, bakery, and other specialized structures at NAS Puunene were relocated to NAS Kahului, only to be partially or entirely destroyed by a series of tidal waves that struck NAS Kahului facilities April 1, 1946 (Priestman 1946).

During 1946, Mauians were allowed to rent residential structures in Housing Area "A", the area closest to the *pūnāwai* (Reservoir 6) known as "Airport Village". The cost was reportedly $36.00 per month (Cabos 2000). By 1947, the HC&S Company began to reclaim over 100 acres of former

cane land for sugar cultivation in Parcels 2-B, 2-C, 2-F and Parcel 7 (Figure 13). During 1947, the use of the airstrip at Pu‘unēnē by civilians led some Mauians to believe that the site might be further expanded as a general aviation facility (Belknap 1947). But by the end of 1948, the site of the former Naval Air Station at Kahului had been chosen to replace the Pu‘unēnē site for all future civilian flight operations (Yoklavich et al. 1997).

By quitclaim deed dated December 31, 1948, the lands of the former air base were transferred from the United States back to the Territory of Hawai‘i. In 1950, the Maui News reported that plans to allow for subsistence farming and the raising of pigs on five to ten-acre plots on former NAS Puunene lands were proceeding (Maui News, 8-23-50 1:1) (Figure 14).

The remaining base facilities, most of which were wooden structures, had, by that time, been abandoned or demolished. In May, 1951, the operations of Hawaiian Airlines and Trans-Pacific Airlines (later Aloha Airlines) were moved to the new civilian airport at Kahului, which utilized the runways of the former Naval Air Station Kahului. Thereafter, the airfield at Pu‘unēnē was placed on “caretaker status”, and sugar cultivation reclaimed much of the land area formerly dedicated to the aerodrome (Figure 15).

3.1.6 Contemporary Land Use

Many changes occurred in Kīhei following the end of World War II in 1945. With the airfield abandoned, a *Maui News* article reported that Maui farmers had begun to raise alfalfa on some of the land at NAS Puunene (Young 1950). Shortly following statehood in 1959, the County of Maui established a network of Civil Defense fallout shelters across the county, as well as in the Pu‘unēnē airport area. Revetment and splinter shelters of the former air base were reorganized for civilian use and stocked with supplies of water, crackers and Geiger counters in the event of an atomic attack. In all, six separate shelters were established within the former boundaries of NAS Puunene, with a combined capacity estimated to accommodate 1,213 people (Figure 16). Postwar aircraft enthusiasts used the abandoned runways 1-19 and 14-32 for general aviation operations until the early 1960’s, when all general (civilian) flight operations were transferred to the Kahului Airport. A short portion of runway 1-19 remained open to support the aerial chemical spraying operations of the HC&S Company. Sanctioned drag races began in 1963, when the Valley Isle Timing Association was organized to regulate drag racing on runway 14-32, at the former airfield. The Hawai‘i Army National Guard developed a 30-acre parcel of property within the former air base for use as an armory, which included facilities for helicopter and military vehicle maintenance (Helber et al. 1995).

By the mid-1970’s, sugar cultivation operations had demolished all but one of the main runways, and had retaken most of the land area (over 1,400 acres) previously given up for the original pre-war Maui Airport. A 1976 aerial photograph depicts the expanse of sugar cane growth within and surrounding the vicinity of the project area (Figure 17). Since the 1970s, these fields within the project area were further expanded into offshoot portions of Kolaloa Gulch (Figure 21). The project area continued to be used for commercial sugarcane growth until the closing of HC&S production in 2016.

The Hawaiian Cement Puunene Quarry started in the late-1970s with 28 acres. The quarry was further expended in 1980 to 194 acres. The primary resource of the quarry is basalt that is crushed Previous Archaeological Research and used for road base course, concrete and pavement aggregate, railroad ballast, and many other purposes (Yanik 2018).



Figure 13. Postwar NAS Puunene showing a return of some land to sugar cane cultivation in foreground, at center, right; photo dated Feb. 12, 1947, and back stamped “U.S. Army Air Forces Photo Lab,” (Command 1947)

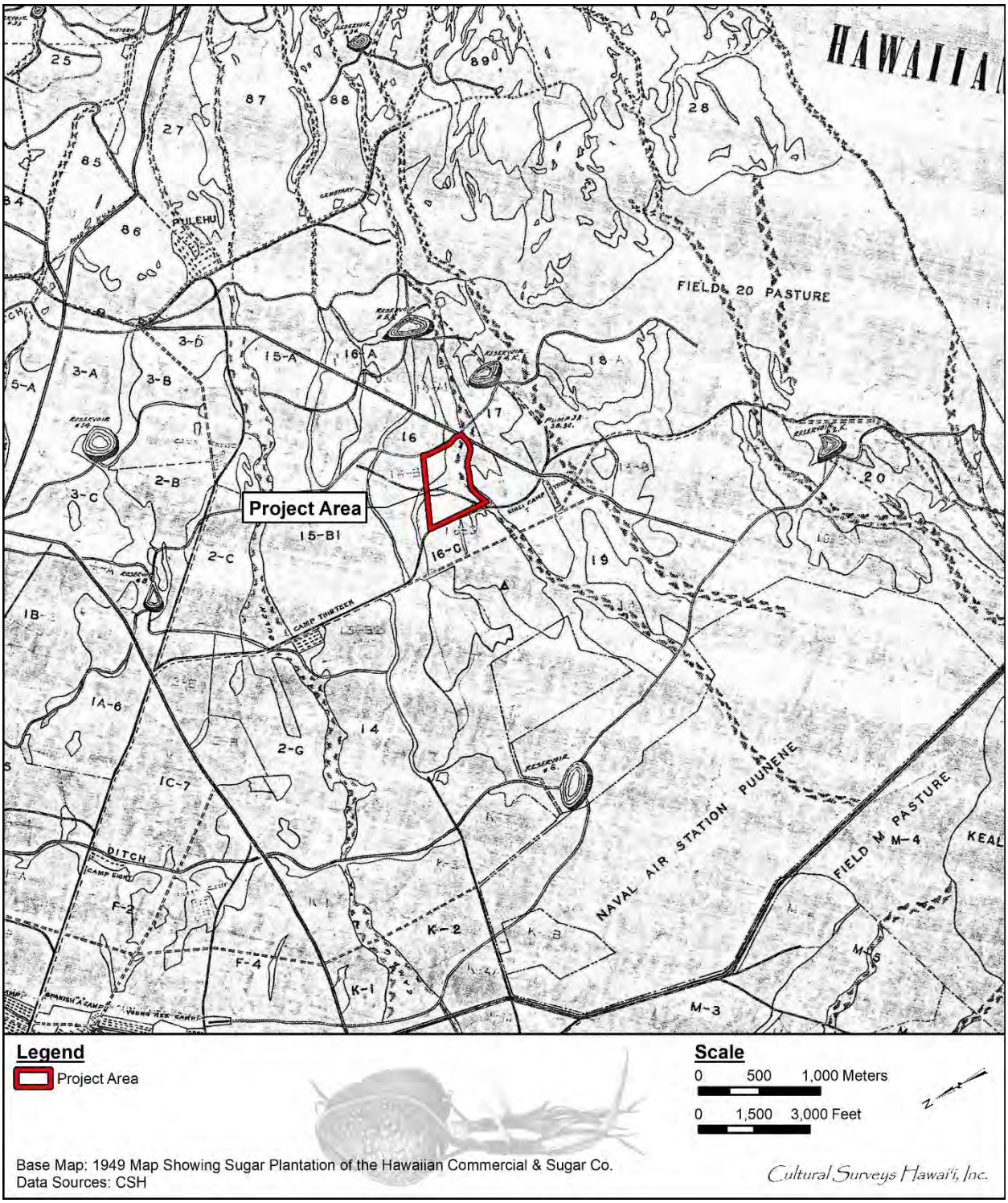


Figure 14. Portion of the 1949 HC&S sugar plantation map showing the boundary of NAS Puunene located west of the current project area (Hawaiian Commercial & Sugar Co. 1949)

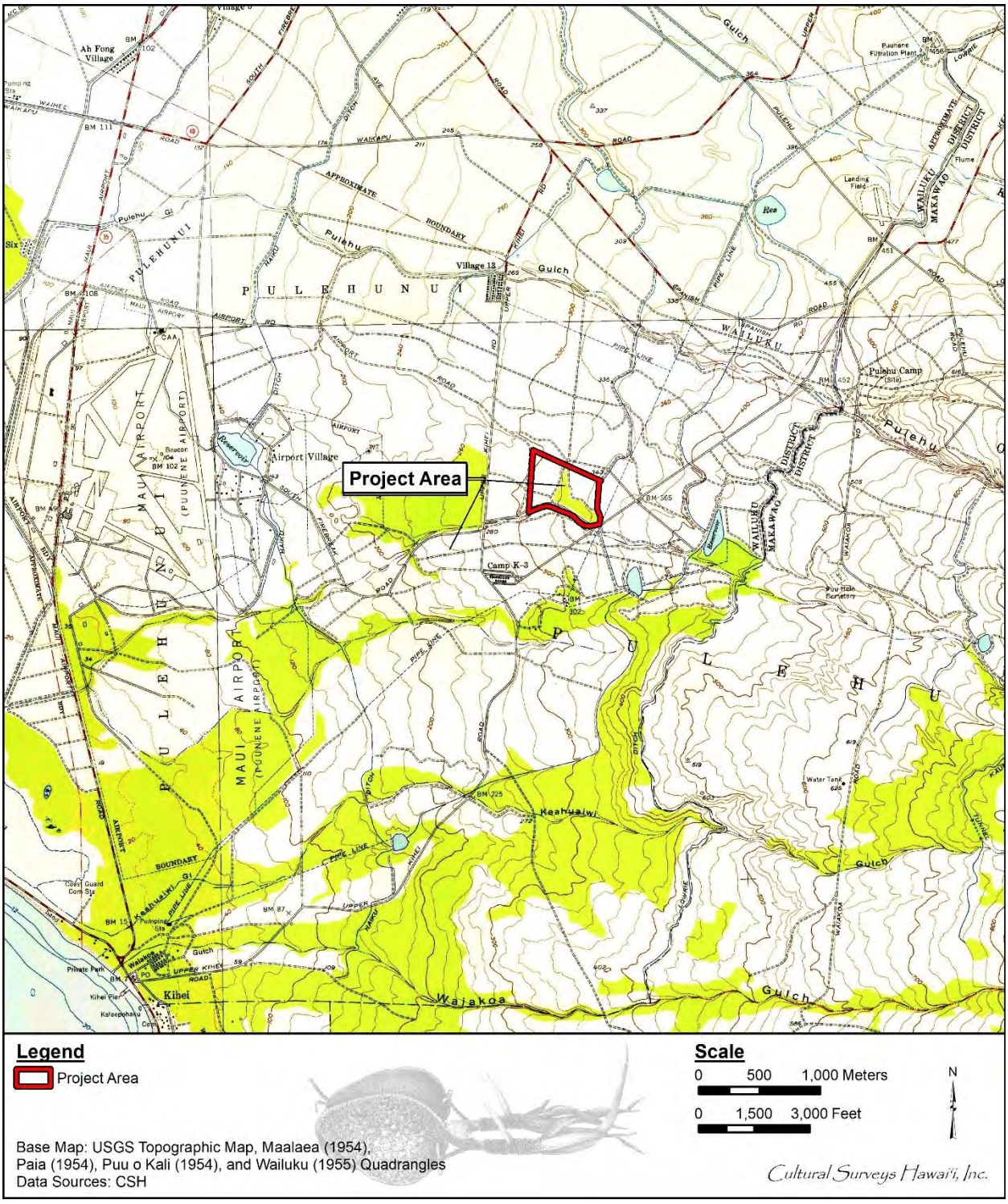


Figure 15. Portion of the 1954 USGS topographic quadrangle depicting the layout of the NAS Puunene (labeled Maui Airport) in the vicinity of the project area (U.S. Geological Survey 1954a, 1954b, 1954c, 1955)

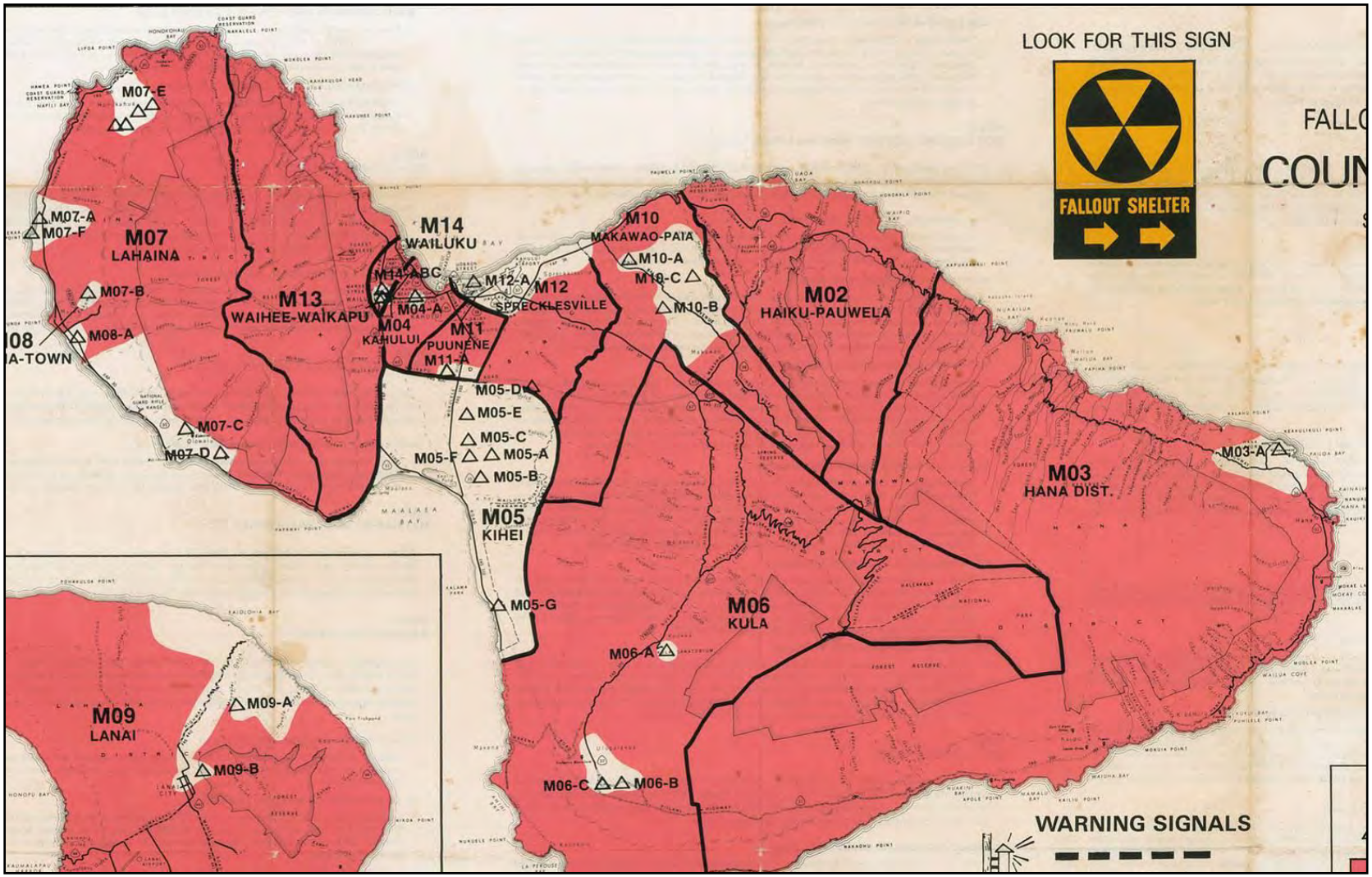


Figure 16. Maui Island map showing MO5 A through F, splinter shelters of the former NAS Puunene that were outfitted as fallout shelters in the 1960’s (County of Maui n.d.)

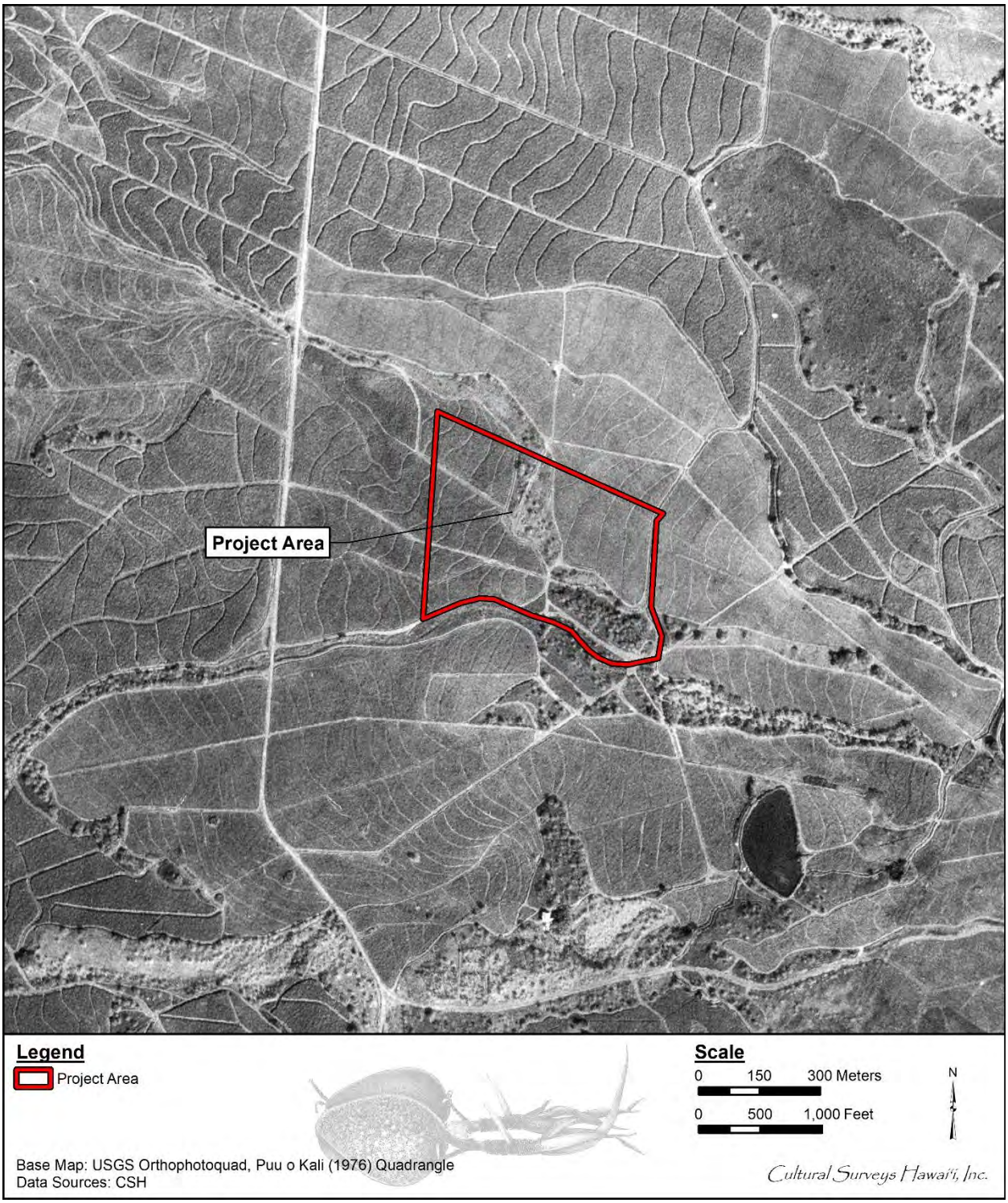


Figure 17. Portion of the 1976 Puu o Kali USGS orthophotoquad showing the expanse of commercial sugar cane fields within and surrounding the current project area (U.S. Geological Survey 1976)

3.2 **Previous Archaeological Research**

The earliest archaeological studies on the island of Maui were a part of island-wide surveys conducted in the early 1900s (Stokes 1917; Walker 1931). These studies tended to focus on the generation of descriptive lists of large-scale architecture or traditional ceremonial *heiau* sites. No *heiau* or other archaeological sites were documented in the immediate vicinity of the current project area. Between 1931 and 1976, only sporadic archaeological studies were undertaken in the region and none in the vicinity of the project area.

Following the passage of the National Historic Preservation Act in 1966 and HRS Chapter 6E, which established the Historic Preservation Program in 1976, archaeological studies occurred as a condition of development on a more frequent basis. The lands surrounding the current project area have been subject to a variety of studies as described in Table 2 and depicted in Figure 18. These studies have identified NAS Puunene, consisting of 59 standing structures and 165 total features (SIHP # 50-50-09-04164), sugarcane plantation features (SIHP # -04800), post-war ranching features (SIHP # -04801), the Kīhei Railroad bed (SIHP # -04802), the Haiku Ditch and reservoir (SIHP # -04803), and 90 other historic properties (SIHP #s 50-50-10-06693 through -06774), consisting of features associated with the sugar plantation, ranching and/or WWII period. No historic properties have been documented within the current project area. Historic properties that have been documented in the vicinity of the project area are depicted in Figure 21 and further descript in Table 3.

3.2.1 Kennedy (1990)

In 1990, ACH completed an archaeological walk-through reconnaissance survey of the proposed Hawaiian Cement Puunene Quarry site including the current project area. The study documented that the entire property was covered in sugarcane with the exception of Kolaloa Gulch. The survey included an inspection of Kolaloa Gulch and the surrounding agricultural fields. No historic properties were identified, and no further work was recommended.

3.2.2 Lee-Greig et al. (2011)

From 18 October through 12 December 2009 and from 1 through 17 February 2010, CSH conducted an AIS of approximately 3165 acres in Pūlehunui for a proposed agricultural subdivision (Lee-Greig et al. 2011). Ninety historic properties (SIHP #s 50-50-10-06693 through -06774) were documented, consisting of features associated with the sugar plantation, ranching and/or WWII period.

3.2.3 Rotunno-Hazuka et al. (2011)

In 2010, ASH conducted an archaeological inventory survey for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). The study recommended no further work.

Table 2. Previous Archaeological Studies in the Vicinity of the Project Area

Reference	Type of Study	Location	Results
Kennedy (1990)	Archaeological reconnaissance survey	Hawaiian Cement Puunene Quarry	No historic properties identified
Lee-Greig et al. (2011)	Archaeological inventory survey	Approximately 3165 acres located northeast and extending *mauka* from the present project area	Identified 90 historic properties (SIHP #s 50-50-10-06693 through -06774), consisting of features associated with the sugar plantation, ranching and/or WWII period
Rotunno-Hazuka et al. (2011)	Archaeological inventory survey	Hawaiian Cement Puunene Quarry Expansion Increment 1	No historic properties identified
Fuentes et al. (2020)	Archaeological inventory survey	Hawaiian Cement Puunene Quarry Expansion Increment 3	No historic properties identified

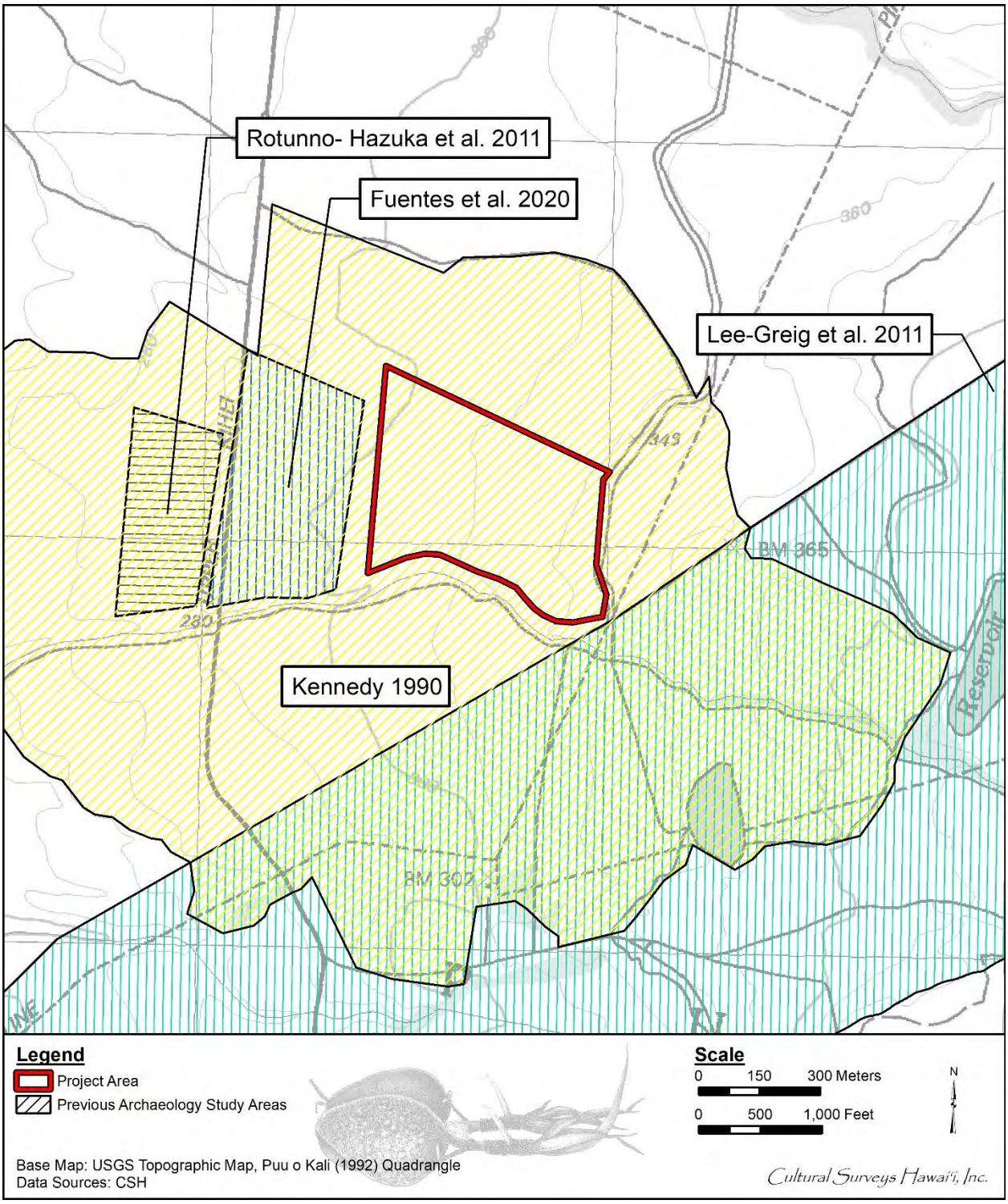


Figure 18. Portion of the 1992 Puu o Kali USGS topographic quadrangle depicting the location of previous archaeological studies in the vicinity of the current project area (U.S. Geological Survey 1992)

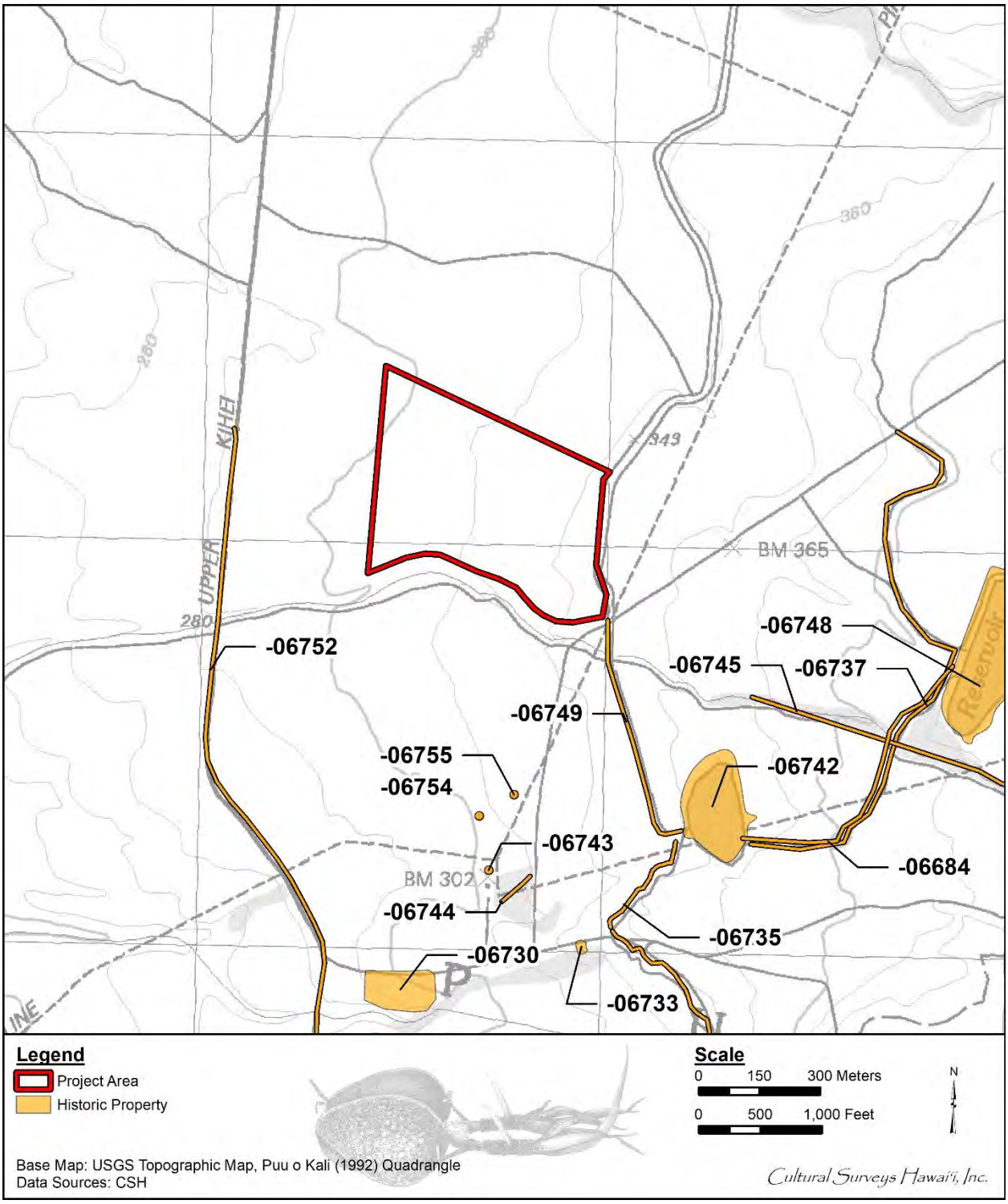


Figure 19. Portion of the 1992 Puu o Kali USGS topographic quadrangle depicting the location of previously documented historic properties in the vicinity of the project area (U.S. Geological Survey 1992)

Table 3. Historic properties documented in the vicinity of the project area

SIHP 50-50-10-	Feature	Feature Type	Function	Probable Age	Condition
06684	None	Irrigation Pipe	Water Control	Historic Plantation	Fair to Poor
06689	None	Fence Line	Animal Husbandry	Historic Ranch	Good
06704	None	Fence Line	Animal Husbandry	Historic Ranch	Fair
06727	None	Fence Line	Indeterminate	Historic Ranch	Poor
06728	None	Irrigation Ditch	Water Control	Historic Plantation	Remnant
06729	None	C-Shape	Indeterminate	Possible Historic	Good
06730	Overall	Plantation Camp 3	Habitation	Historic Plantation	Good to Remnant
	A	Platform	Habitation	Historic Plantation	Good to Fair
	B	Wall	Indeterminate	Historic Plantation	Fair
	C	Wall	Indeterminate	Historic Plantation	Fair
	D	Depression	Indeterminate	Historic Plantation	Fair to Poor
	E	Mound	Indeterminate	Historic Plantation	Good
	F	Wall/Depression	Indeterminate	Historic Plantation	Poor
	G	U-Shape	Indeterminate	Historic Plantation	Poor
	H	Depression/Hole	Habitation	Historic Plantation	Poor
	I	Terrace	Habitation	Historic Plantation	Remnant
06733	None	Reservoir	Agriculture	Historic Plantation	Good
06734	None	Irrigation Ditch	Water Control	Historic Plantation	Good
06735	Overall	Irrigation Ditch and Component Gates	Water Control	Historic Plantation	Good to Fair
	A	Irrigation Ditch	Water Control	Historic Plantation	Good
	B	Irrigation Gates	Water Control	Historic Plantation	Fair
06737	None	Irrigation Ditch	Water Control	Historic Plantation	Good
06742	None	Reservoir	Agriculture	Historic Plantation	Good
06743	None	Pump House	Agriculture	Historic Plantation	Remnant
06744	None	Fence Line	Animal Husbandry	Historic Ranch	Remnant

SIHP 50-50-10-	Feature	Feature Type	Function	Probable Age	Condition
06745	None	Fence Line	Possible Boundary Marker	Historic Plantation	Poor
06748	None	Reservoir	Agriculture	Historic Plantation	Good
06749	None	Irrigation Ditch	Water Control	Historic Plantation	Good
06752	None	Historic Road	Transportation	Historic Plantation	Good to Poor
06754	None	WWII-Era Bomb Shelter	WWII Military	WWII Military	Excellent
06755	None	Concrete Cistern	Water Control	Historic Plantation	Good
06756	None	Historic Road	Transportation	Historic Plantation	Good to Poor

3.2.4 Fuentes et al. (2020)

In 2014, ASH returned conducted an archaeological inventory survey of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2020). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. As such the study was termed an "archaeological assessment" in accordance with §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No: 1505MD19; Appendix A). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017. The report was accepted in a 17 April 2020 Chapter 6E-42 historic preservation review letter (Log No.: 2017.02140/2020.00762; Doc. No.: 2004AM09; see Appendix A).

3.3 Background Summary and Predictive Model

While previous archaeological studies conducted in the vicinity of the project area have identified numerous surface historic properties related to commercial sugarcane cultivation, ranching, and military use, no historic properties have been identified within the current project area. The project area was subject to a reconnaissance level pedestrian inspection with no finds. Two adjacent archaeological inventory surveys included a total to 37 backhoe-assisted test excavations with no finds. The adjacent studies documented that the stratigraphy of this area includes an agricultural plow zone developed over eroding and solid basalt bedrock. Based on the results of previous archaeological studies, there is a low expectation for the discovery of historic properties within the project area. However, architectural remnants or artifacts related to plantation agriculture, the plantation railroad, or nearby military use are possible. Furthermore, while unlikely at this location given the traditional and historic background of the area, human burials have been identified beneath agricultural plow zones on Maui (Yucha and Yucha 2018 Draft; Yucha et al. 2017).

Section 4 Results of Fieldwork

4.1 Results of Pedestrian Inspection

A 100 percent coverage pedestrian inspection of the project area confirmed that there were no historic properties present on the surface. The survey was completed using pedestrian transects that were spaced every 10 m. Ground visibility was excellent. The surface of the project area consisted of fallow sugarcane fields, last planted in 2016, that were slowly being overtaken by young *koa haole* (*Leucaena leucocephala*) and grasses (Figure 20). The former plowed agricultural fields were divided by occasional unimproved dirt field roads that changed over time. Modern drip irrigation pipping and PVC pipe fragments from the former commercial irrigation network were observed on the surface but not collected.

4.2 Results of Subsurface Testing

Archaeological subsurface testing has confirmed that there are no subsurface historic properties within the project area. CSH archaeologists, with the assistance of a backhoe operator, completed 20 AIS test excavations (TE-1 through TE-20) in accordance with the project's SHPD-accepted AIS testing strategy (Figure 21). Each test excavation measured approximately 6.0 m (20.0 ft) long and 1.5 m (4.9 ft) wide, and were excavated to bedrock. In general, the sediment deposits overlying bedrock were shallow. The negative results of AIS testing within the project area are consistent with the negative results reported from previous studies at the quarry site (Fuentes et al. 2020; Kennedy 1990; Rotunno-Hazuka et al. 2011).

Since there were no subsurface historic properties identified within the project area, documentation focused on characterizing stratigraphy. In general, the stratigraphy observed throughout the project area included a modern agricultural plow zone surface (Ap horizon) overlying natural alluvial soil and chemically eroded bedrock throughout the majority of the project area. The stratigraphy of the southern and eastern edges of the project area differed in that the natural sediment beneath the plow zone included strata of naturally deposited volcanic cinder. TE-9, located within the southeastern corner of the project area, included what appeared to be a high-energy alluvial deposit comprised of a mix of basalt boulders and volcanic cinder.



Figure 20. General view showing the condition of the surface of the project area during the pedestrian inspection, view to southeast

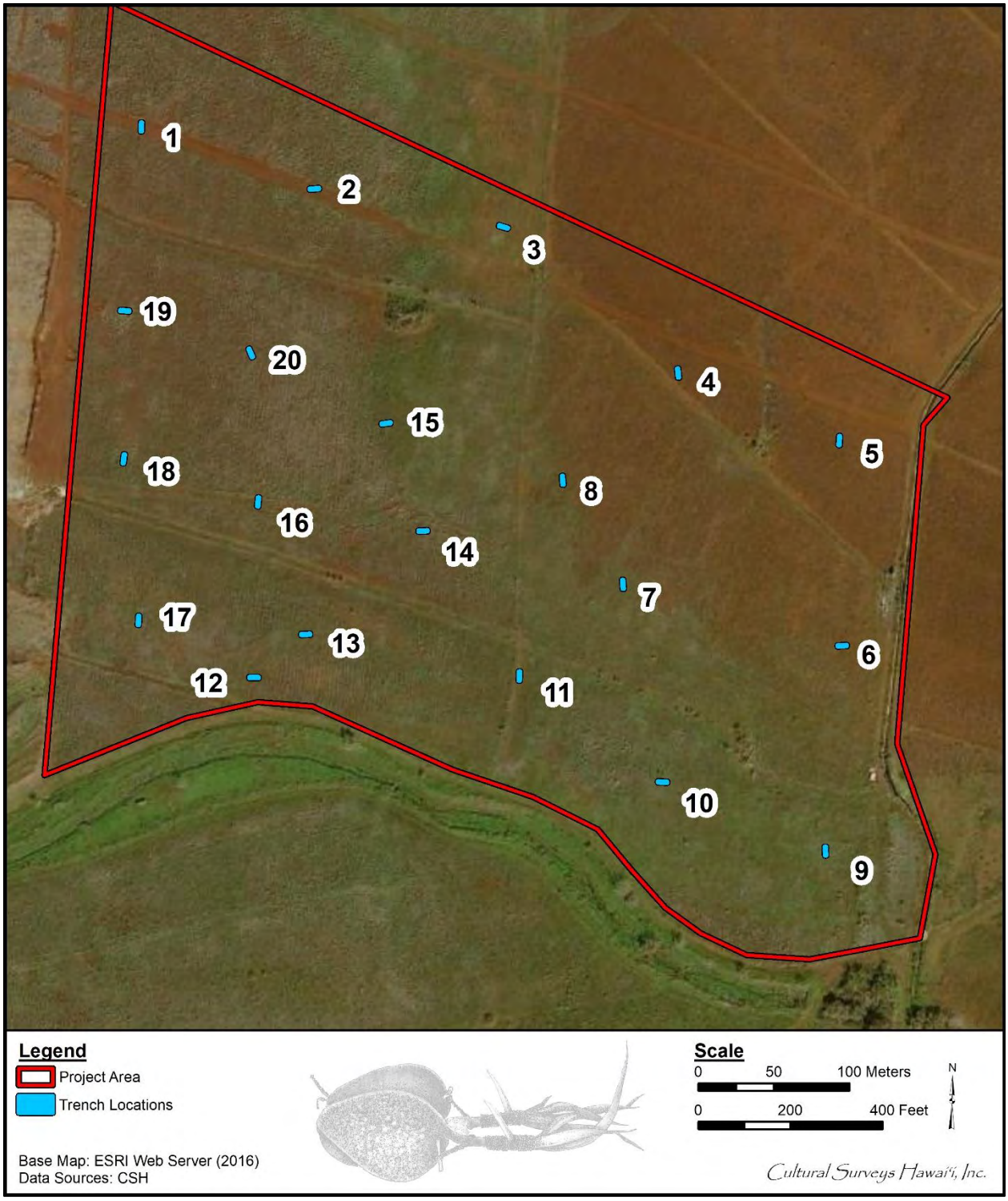


Figure 21. 2016 aerial photograph depicting the location of test excavation trenches (TE-1 through TE-20) within the project area (Esri 2019)

4.2.1 Test Excavation 1 (TE-1)

TE-1 was placed in the northwestern corner of the project area (Figure 21). The maximum depth of the excavation was 85.0 cm below surface (cmbs). The stratigraphy of TE-1 consisted of a dark reddish brown gravelly silty clay loam Ap horizon (Stratum I), overlying a dark reddish brown cobbly silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 22 through Figure 24 and Table 4). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.2 Test Excavation 2 (TE-2)

TE-2 was placed along the northern boundary of the project area (Figure 21). The maximum depth of the excavation was 130.0 cmbs. The stratigraphy of TE-2 consisted of a dark reddish brown gravelly silty clay loam Ap horizon (Stratum I), overlying a dark reddish brown cobbly silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 25 through Figure 27 and Table 5). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.3 Test Excavation 3 (TE-3)

TE-3 was placed along the northern boundary of the project area (Figure 21). The maximum depth of the excavation was 66.0 cmbs. The stratigraphy of TE-3 consisted of a dark reddish brown gravelly silty clay loam Ap horizon (Stratum I), overlying a dark reddish brown cobbly silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 25 through Figure 27 and Table 6). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.4 Test Excavation 4 (TE-4)

TE-4 was placed along the northern boundary of the project area (Figure 21). The maximum depth of the excavation was 66.0 cmbs. The stratigraphy of TE-4 consisted of a dusky red gravelly sandy clay loam Ap horizon (Stratum I), overlying a dark reddish brown cobbly silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 31 through Figure 33 and Table 7). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.5 Test Excavation 5 (TE-5)

TE-5 was placed in the northeastern corner of the project area (Figure 21). The maximum depth of the excavation was 137.0 cmbs. The stratigraphy of TE-5 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I) overlying a dark reddish brown cobbly silty clay alluvial deposit (Stratum II), a light yellowish brown extremely gravelly sand volcanic cinder deposit (Stratum III), and chemically eroded bedrock at the base of excavation (Figure 34 through Figure 36 and Table 8). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.



Figure 22. TE-1, general view of west wall, view to northwest



Figure 23. TE-1, close-up of west wall, view to west

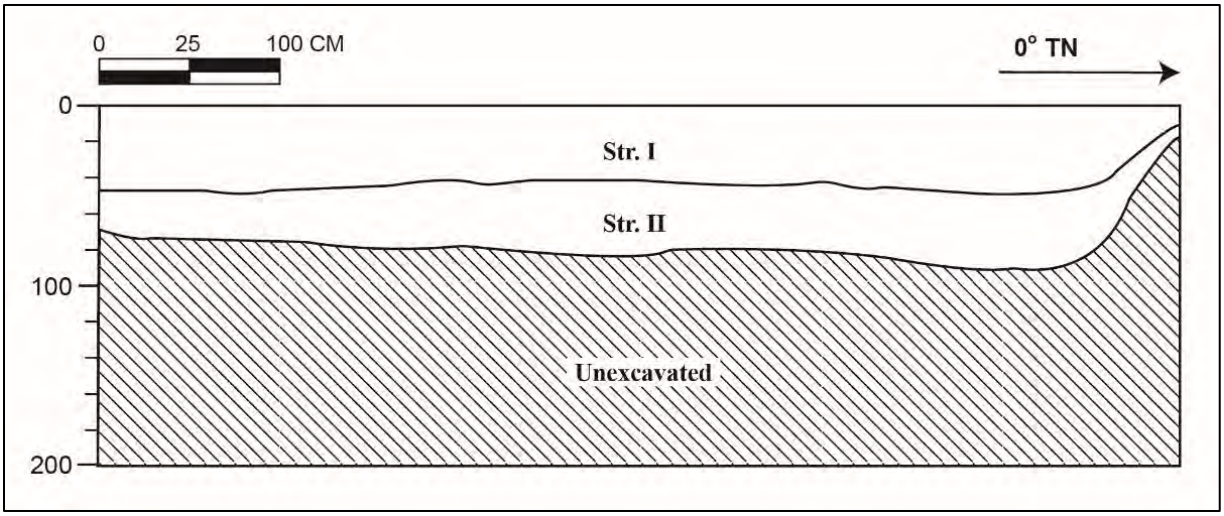


Figure 24. TE-1, stratigraphic profile of west wall

Table 4. TE-1, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–45	Ap horizon; 2.5YR 3/3, dark reddish brown; gravelly sandy clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; fine, medium roots
II	0–85	Natural; 2.5YR 3/4, dark reddish brown; cobbly silty clay; blocky, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; common, fine roots



Figure 25. TE-2, general view of north wall, view to northeast



Figure 26. TE-2, close-up of north wall, view to north

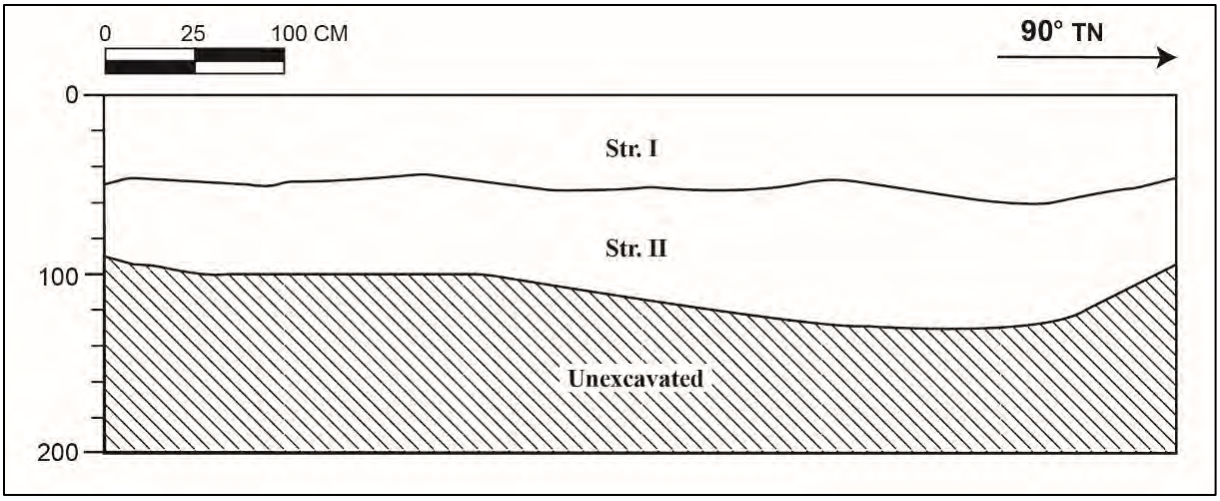


Figure 27. TE-2, stratigraphic profile of north wall

Table 5. TE-2, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–60	Ap horizon; 2.5YR 3/3, dark reddish brown; gravelly sandy clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; fine, medium root
II	48–130	Natural; 2.5YR 3/4, dark reddish brown; cobbly silty clay; blocky, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; common, fine roots



Figure 28. TE-3, general view of west wall, view to northwest



Figure 29. TE-3, close-up of west wall

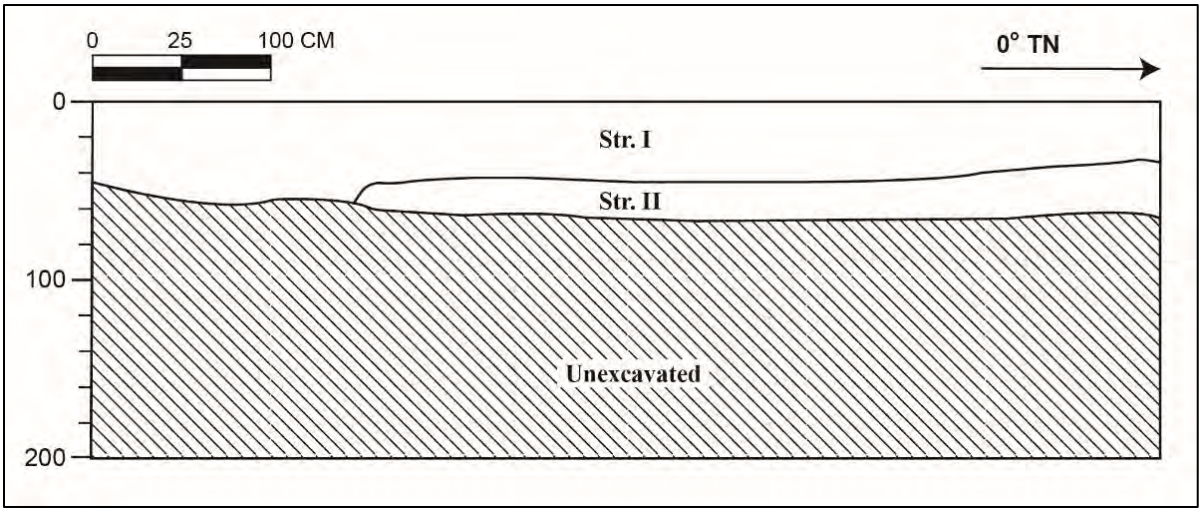


Figure 30. TE-3, stratigraphic profile of west wall

Table 6. TE-3, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–46	Ap horizon; 2.5YR 3/3, dark reddish brown; gravelly sandy clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; fine, medium roots
II	33–66	Natural; 2.5YR 3/4, dark reddish brown; cobbly silty clay; blocky, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; common, fine roots



Figure 31. TE-4, general view of west wall, view to northwest



Figure 32. TE-4, close-up of west wall, view to west

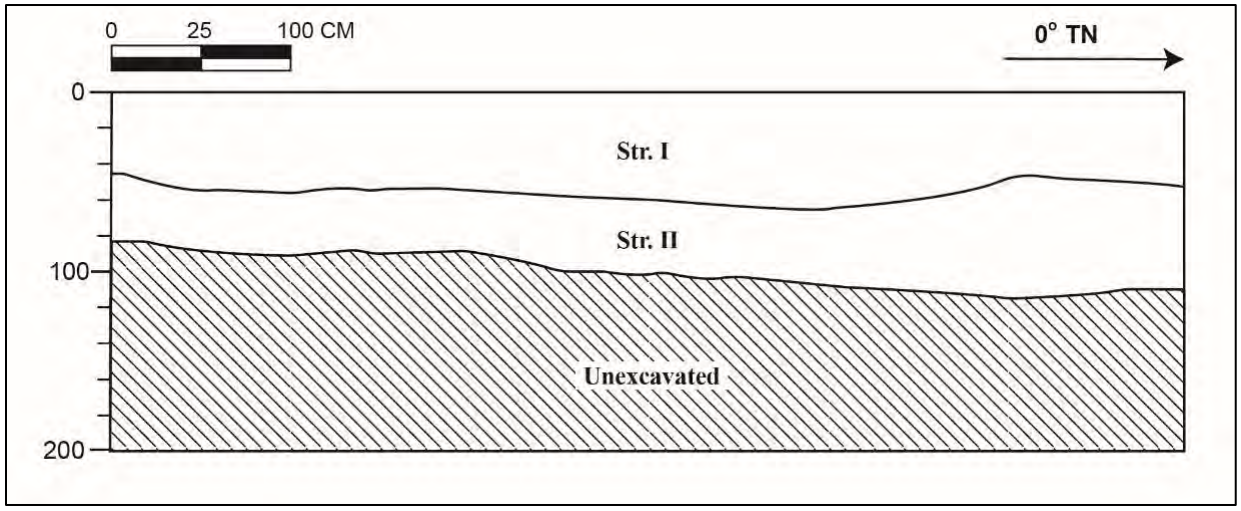


Figure 33. TE-4, stratigraphic profile of west wall

Table 7. TE-4, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–46	Ap horizon; 2.5YR 3/2, dusky red; gravelly sandy clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; fine, medium roots
II	33–66	Natural; 2.5YR 3/4, dark reddish brown; cobbly silty clay; blocky, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; common, fine roots



Figure 34. TE-5, general view of west wall, view to northwest

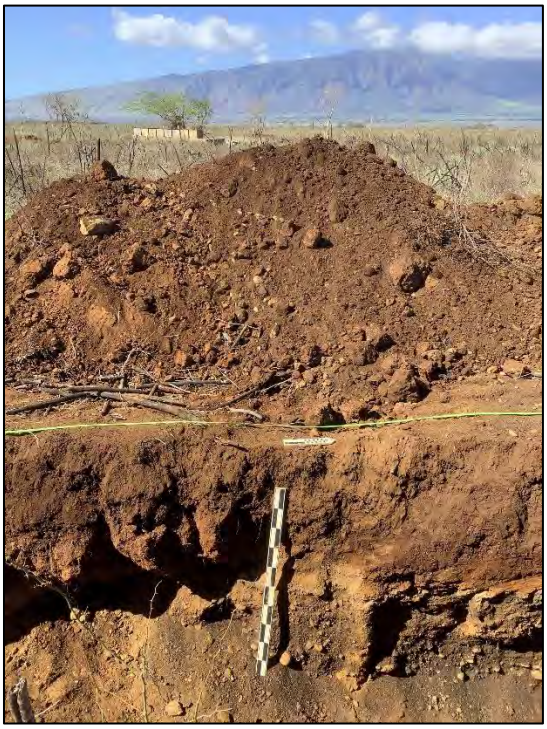


Figure 35. TE-5, close-up of west wall, view to west

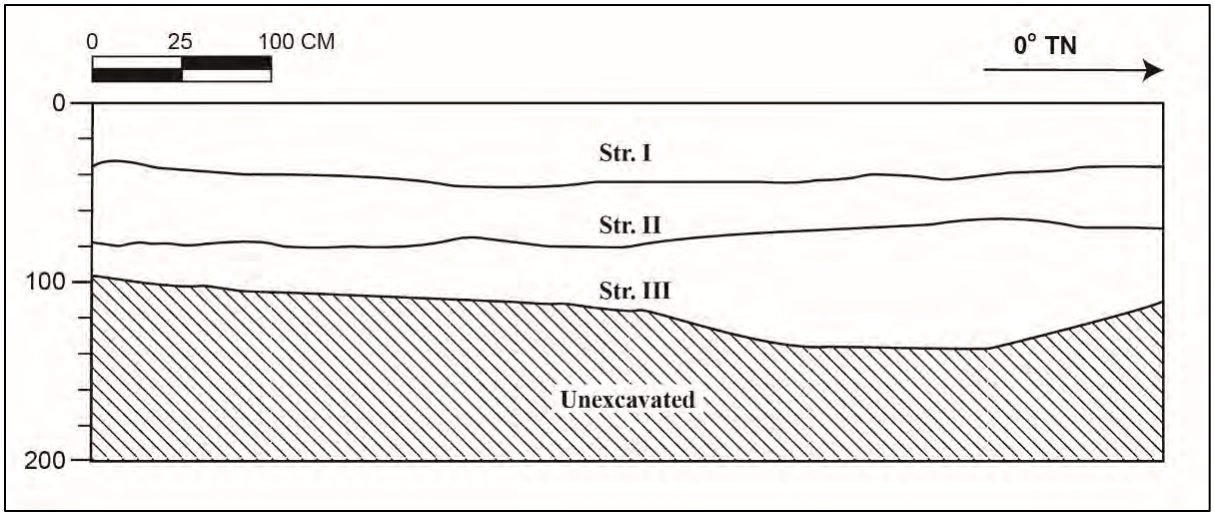


Figure 36. TE-5, stratigraphic profile of west wall

Table 8. TE-5, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–47	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots
II	36–90	Natural; 2.5YR 3/4, dark reddish brown; cobbly silty clay; blocky, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, irregular lower boundary; common, fine roots
III	65–137	Natural; 10YR 6/4, light yellowish brown; extremely gravelly sand; single-grain (structureless); moist, loose consistency; no cementation; non-plastic; marine origin; lower boundary not observed; no roots; volcanic cinder

4.2.6 Test Excavation 6 (TE-6)

TE-6 was placed along the eastern boundary of the project area (Figure 21). The maximum depth of the excavation was 66.0 cmbs. The stratigraphy of TE-6 consisted of a dark reddish brown gravelly sandy clay loam Ap horizon (Stratum I), overlying a dark reddish brown cobbly silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 37 through Figure 39 and Table 9). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.7 Test Excavation 7 (TE-7)

TE-7 was placed in the central portion of the project area (Figure 21). The maximum depth of the excavation was 86.0 cmbs. The stratigraphy of TE-7 consisted of a dark reddish brown gravelly sandy clay loam Ap horizon (Stratum I), overlying a dark reddish brown cobbly silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 40 through Figure 42 and Table 10). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.8 Test Excavation 8 (TE-8)

TE-8 was placed in the central portion of the project area (Figure 21). The maximum depth of the excavation was 88.0 cmbs. The stratigraphy of TE-8 consisted of a dark reddish brown gravelly sandy clay loam Ap horizon (Stratum I), overlying a dark reddish brown cobbly silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 43 through Figure 45 and Table 11). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.9 Test Excavation 9 (TE-9)

TE-9 was placed in the southeastern corner of the project area (Figure 21). The maximum depth of the excavation was 115.0 cmbs. The stratigraphy of TE-9 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a dark gray cobbly sand volcanic cinder alluvial deposit (Stratum II), a yellowish brown silty clay alluvial deposit (Stratum III), and chemically eroded bedrock at the base of excavation (Figure 46 through Figure 48 and Table 12). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.10 Test Excavation 10 (TE-10)

TE-10 was placed along the southern boundary of the project area (Figure 21). The maximum depth of the excavation was 92.0 cmbs. The stratigraphy of TE-9 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a dark gray cobbly sand volcanic cinder deposit (Stratum II), a yellowish brown silty clay alluvial deposit (Stratum III), and chemically eroded bedrock at the base of excavation (Figure 49 through Figure 51 and Table 13). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.



Figure 37. TE-6, general view of north wall



Figure 38. TE-6, close-up of north wall, view to north

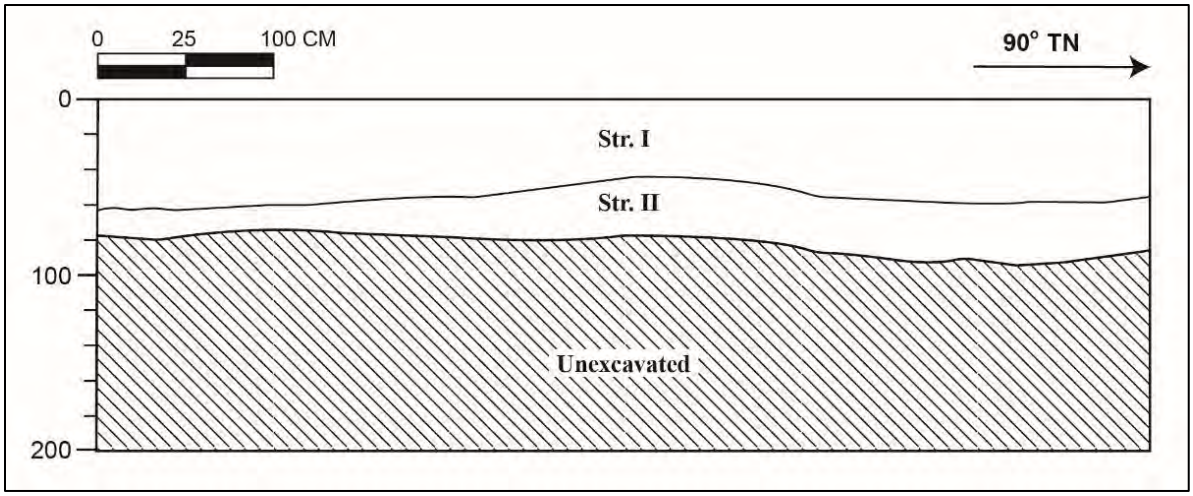


Figure 39. TE-6, stratigraphic profile of north wall

Table 9. TE-6, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–46	AP horizon; 2.5YR 3/3, dark reddish brown; gravelly sandy clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; fine, medium roots
II	33–66	Natural; 2.5YR 3/4, dark reddish brown; cobbly silty clay; blocky, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; common, fine roots



Figure 40. TE-7, general view of east wall, view to southeast



Figure 41. TE-7, close-up of east wall, view to east

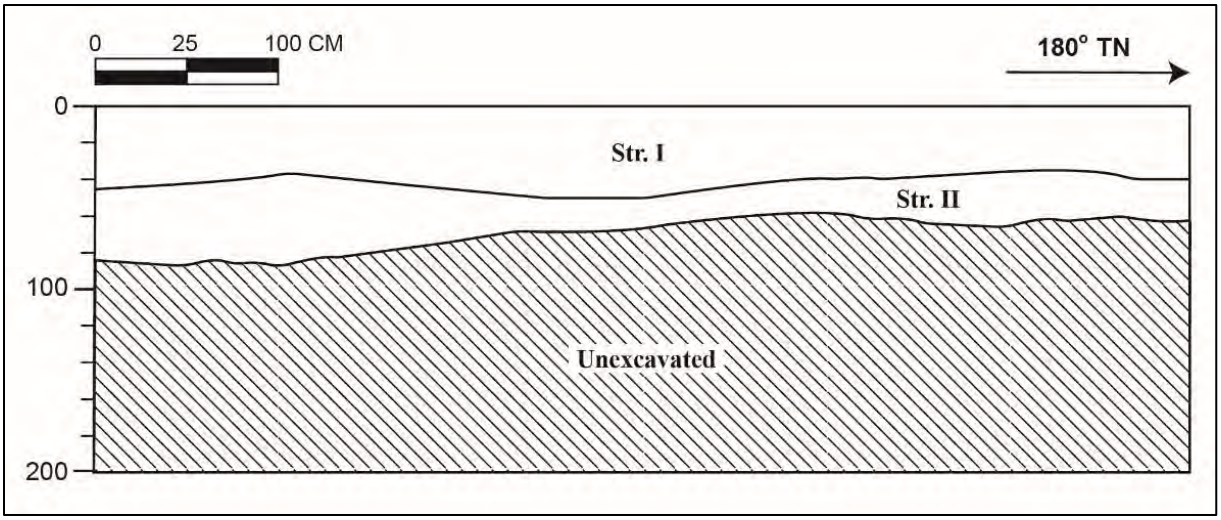


Figure 42. TE-7, stratigraphic profile of east wall

Table 10. TE-7, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–50	Ap horizon; 2.5YR 3/3, dark reddish brown; gravelly sandy clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; fine, medium roots
II	40–86	Natural; 2.5YR 3/4, dark reddish brown; cobbly silty clay; blocky, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; common, fine roots



Figure 43. TE-8, general view of west wall



Figure 44. TE-8, close-up of west wall, view to west

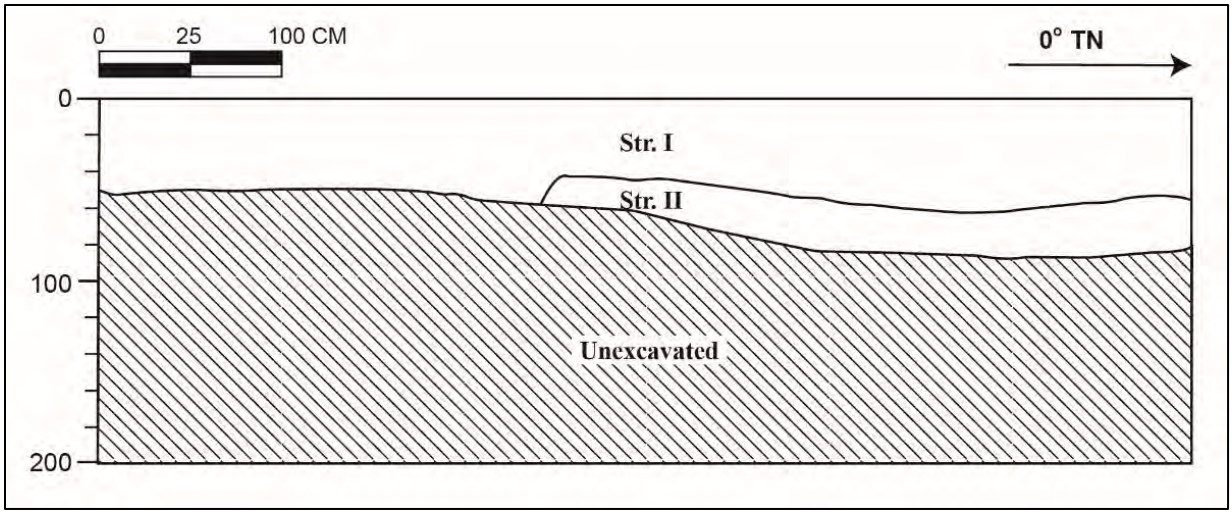


Figure 45. TE-8, stratigraphic profile of west wall

Table 11. TE-8, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–55	Ap horizon; 2.5YR 3/3, dark reddish brown; gravelly sandy clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; fine, medium roots
II	40–88	Natural; 2.5YR 3/4, dark reddish brown; cobbly silty clay; blocky, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; common, fine roots



Figure 46. TE-9, general view of west wall



Figure 47. TE-9, close-up view of west wall, view to west

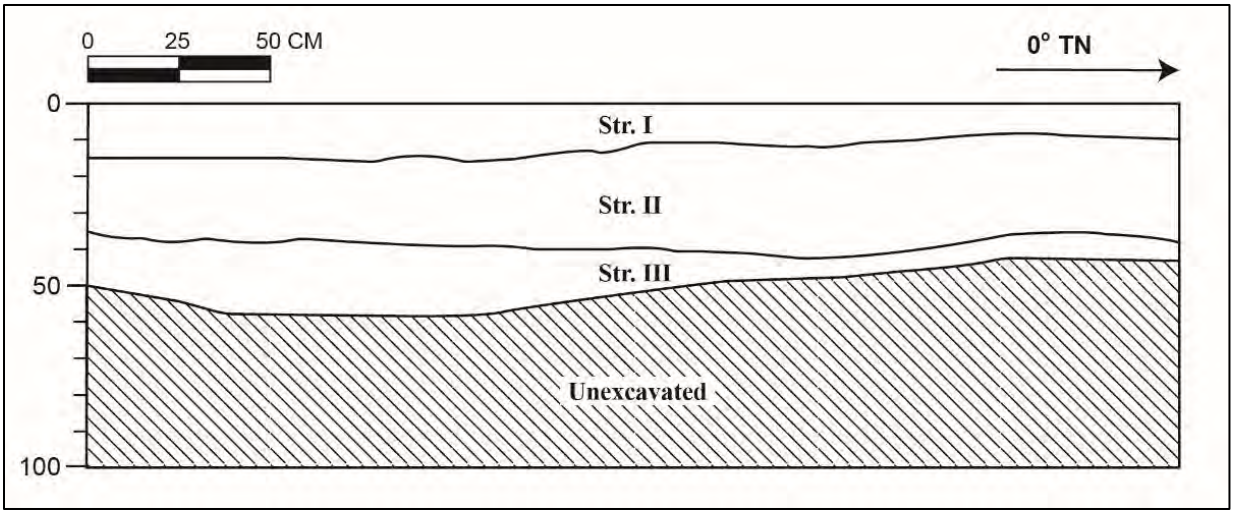


Figure 48. TE-9, stratigraphic profile of the west wall

Table 12. TE-9, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–30	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots
II	17–85	Natural; 10YR 4/1, dark gray; extremely cobbly sand; structureless (single grain); moist, friable consistency; no cementation; non-plastic; terrigenous origin; abrupt, wavy lower boundary; common, fine roots
III	70–115	Natural; 10YR 5/4, yellowish brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; few, fine roots



Figure 49. TE-10, general view of north wall, view to northwest



Figure 50. TE-10, close-up of north wall, view to north

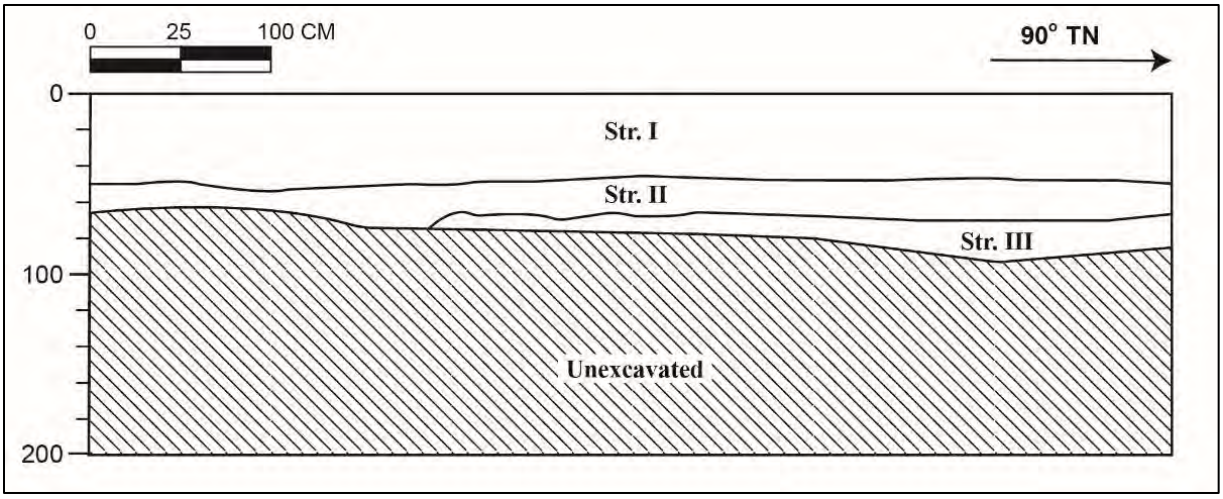


Figure 51. TE-10, stratigraphic profile of the north wall

Table 13. TE-10, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–55	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots
II	46–62	Natural; 10YR 4/1, dark gray; extremely gravelly sand; structureless (single grain); moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, wavy lower boundary; common, fine roots
III	62–92	Natural; 10YR 5/4, yellowish brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; few, fine roots

4.2.11 Test Excavation 11 (TE-11)

TE-11 was placed along the southern boundary of the project area (Figure 21). The maximum depth of the excavation was 62.0 cmbs. The stratigraphy of TE-11 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a brown silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 52 through Figure 54 and Table 14). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.12 Test Excavation 12 (TE-12)

TE-12 was placed along the southern boundary of the project area (Figure 21). The maximum depth of the excavation was 62.0 cmbs. The stratigraphy of TE-12 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a dark gray extremely gravelly sand volcanic cinder deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 55 through Figure 57 and Table 15). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.13 Test Excavation 13 (TE-13)

TE-13 was placed along the southern boundary of the project area (Figure 21). The maximum depth of the excavation was 112.0 cmbs. The stratigraphy of TE-13 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a brown silty clay alluvial deposits (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 58 through Figure 60 and Table 16). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.14 Test Excavation 14 (TE-14)

TE-14 was placed in the central portion of the project area (Figure 21). The maximum depth of the excavation was 110.0 cmbs. The stratigraphy of TE-14 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a brown silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 61 through Figure 63 and Table 17). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.15 Test Excavation 15 (TE-15)

TE-15 was placed in the central portion of the project area (Figure 21). The maximum depth of the excavation was 76.0 cmbs. The stratigraphy of TE-15 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a brown silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 64 through Figure 66 and Table 18). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.



Figure 52. TE-11, general view of west wall, view to north



Figure 53. TE-11, close-up of west wall, view to west

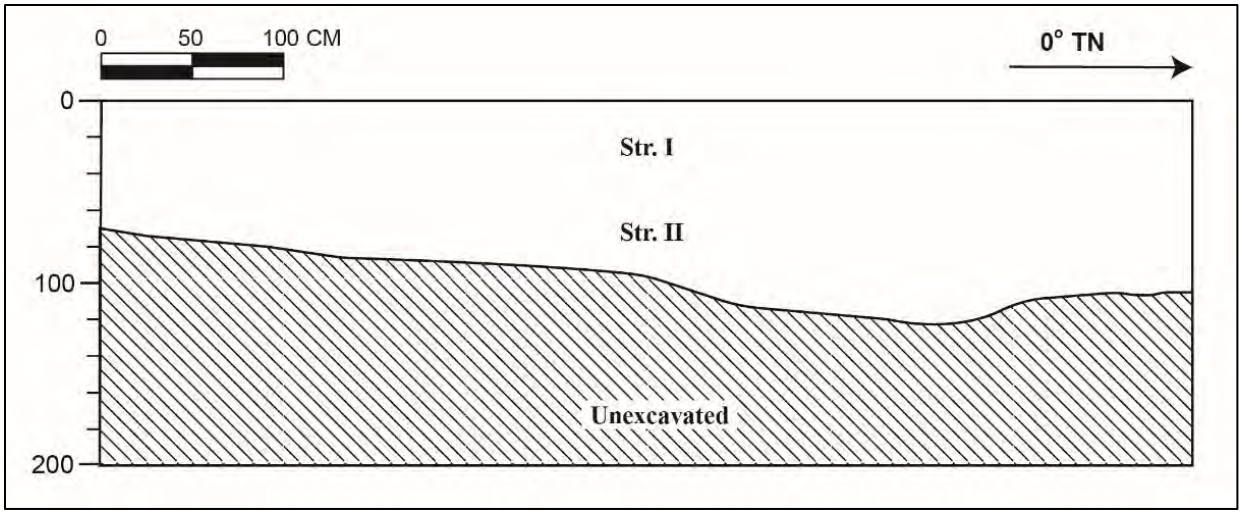


Figure 54. TE-11, stratigraphic profile of west wall

Table 14. TE-11, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–58	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots, mottled with gray gravel
II	46–62	Natural; 7.5YR 4/4, brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, wavy lower boundary; common, fine roots



Figure 55. TE-12, general view of north wall, view to north

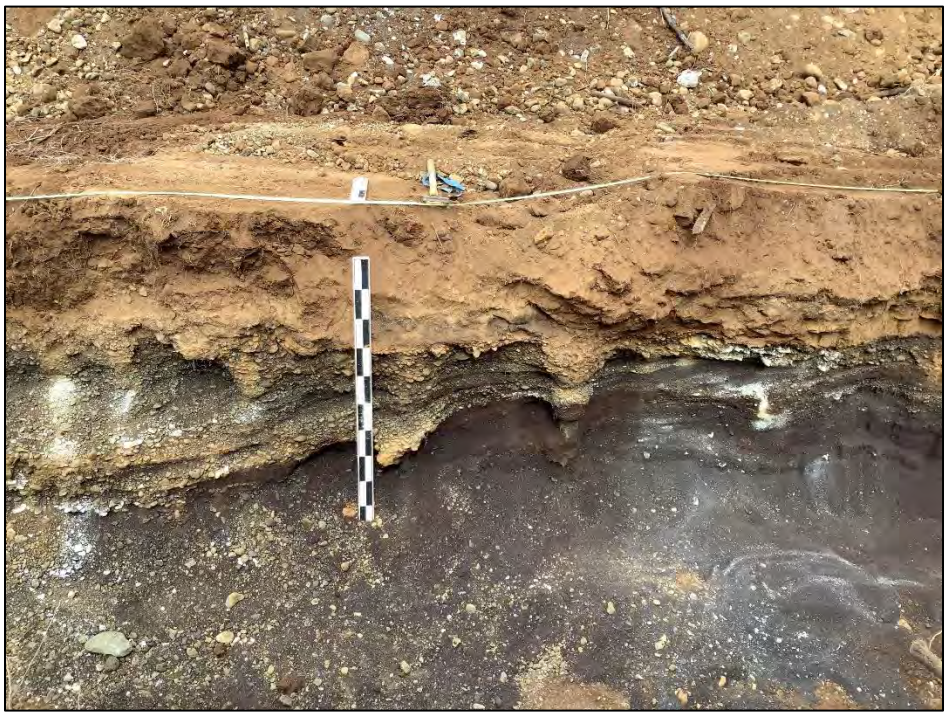


Figure 56. TE-12, close-up of north wall, view to north

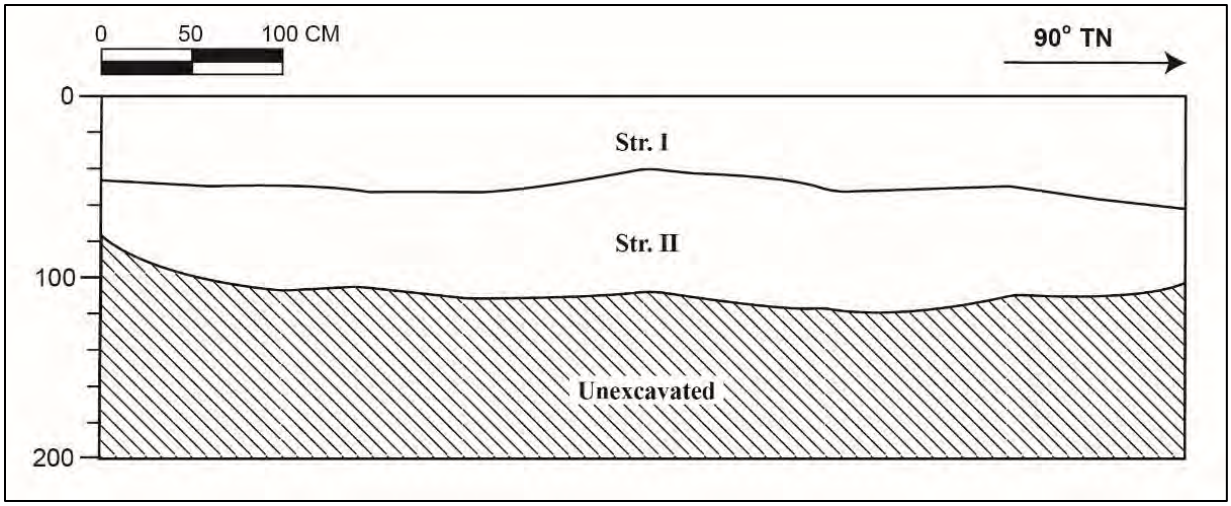


Figure 57. TE-12, stratigraphic profile of north wall

Table 15. TE-12, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–58	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots, mottled with gray gravel
II	46–62	Natural; 10YR 4/1, dark gray; extremely gravelly sand; structureless (single grain); moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, wavy lower boundary; common, fine roots; volcanic cinder



Figure 58. TE-13, general view of north wall, view to northeast



Figure 59. TE-13, close-up view of north wall

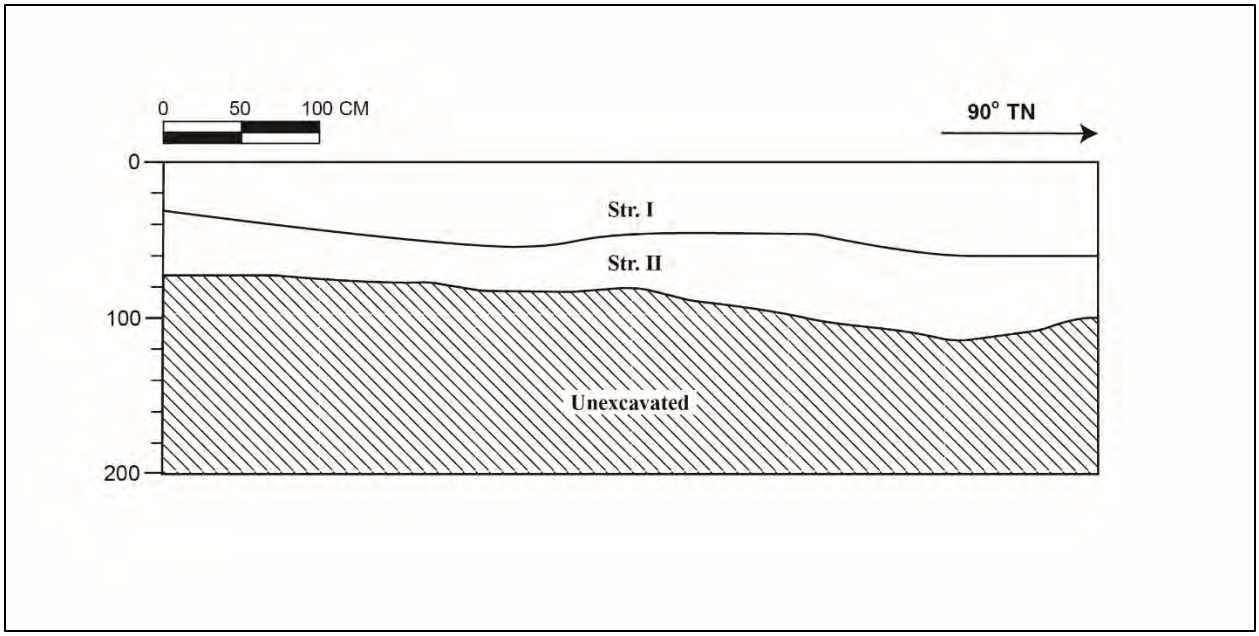


Figure 60. TE-13, stratigraphic profile of north wall

Table 16. TE-13, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–60	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots, mottled with gray gravel
II	32–112	Natural; 10YR 5/6, brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, lower boundary not observed; common, fine roots



Figure 61. TE-14, general view of north wall, view to east



Figure 62. TE-14, close-up view of north wall, view to north

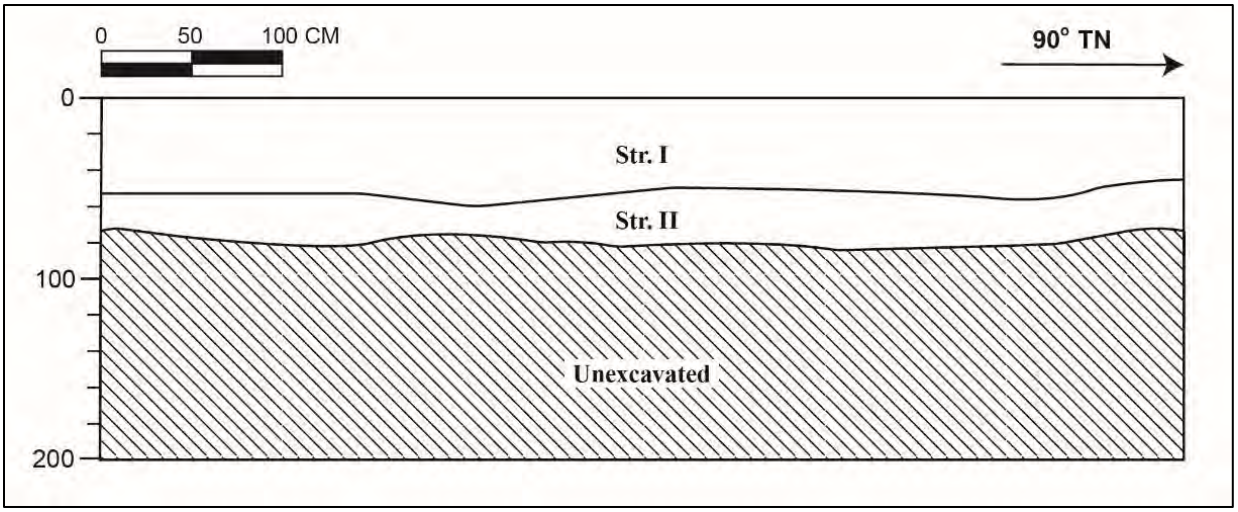


Figure 63. TE-14, stratigraphic profile of west wall

Table 17. TE-14, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–77	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots, mottled with gray gravel
II	59–110	Natural; 2.5YR 3/4, dark reddish brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, lower boundary not observed; common, fine roots



Figure 64. TE-15, general view of south wall



Figure 65. TE-15, close-up of south wall, view to south

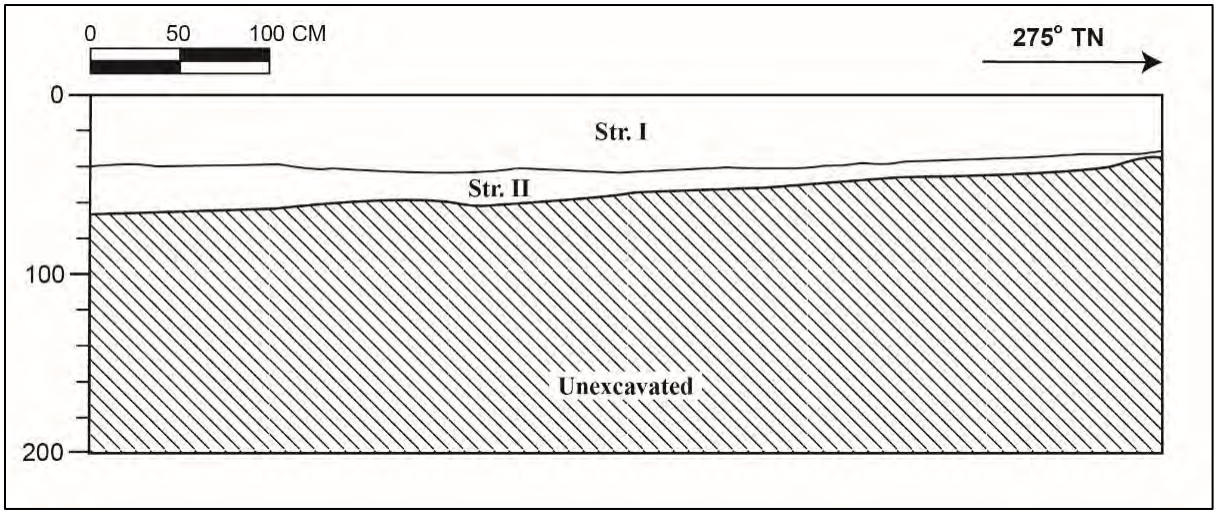


Figure 66. TE-15, stratigraphic profile of south wall

Table 18. TE-15, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–50	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots, mottled with gray gravel
II	37–76	Natural; 2.5YR 3/4, dark reddish brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, lower boundary not observed; common, fine roots

4.2.16 Test Excavation 16 (TE-16)

TE-16 was placed in the central portion of the project area (Figure 21). The maximum depth of the excavation was 92.0 cmbs. The stratigraphy of TE-16 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a dark gray extremely gravelly silty clay alluvial deposit (Stratum II), a yellowish brown silty clay alluvial deposit (Stratum III), and chemically eroded bedrock at the base of excavation (Figure 67 through Figure 69 and Table 19). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.17 Test Excavation 17 (TE-17)

TE-17 was placed near the southwestern corner of the project area (Figure 21). The maximum depth of the excavation was 76.0 cmbs. The stratigraphy of TE-17 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a light yellowish brown silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 70 through Figure 72 and Table 20). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.18 Test Excavation 18 (TE-18)

TE-18 was placed along the western boundary of the project area (Figure 21). The maximum depth of the excavation was 97.0 cmbs. The stratigraphy of TE-18 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a light yellowish brown silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 73 through Figure 75 and Table 21). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.19 Test Excavation 19 (TE-19)

TE-19 was placed along the western boundary of the project area (Figure 21). The maximum depth of the excavation was 97.0 cmbs. The stratigraphy of TE-19 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a light yellowish brown silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 76 through Figure 78 and Table 22). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.

4.2.20 Test Excavation 20 (TE-20)

TE-20 was placed near the center of the project area (Figure 21). The maximum depth of the excavation was 110.0 cmbs. The stratigraphy of TE-20 consisted of a dusky red gravelly silty clay loam Ap horizon (Stratum I), overlying a dark reddish brown silty clay alluvial deposit (Stratum II), and chemically eroded bedrock at the base of excavation (Figure 79 through Figure 81 and Table 23). Stratum I contained pieces of black plastic irrigation drip tape that were noted but not collected.



Figure 67. TE-16, general view of west wall, view to southwest



Figure 68. TE-16, close-up of west wall, view to west

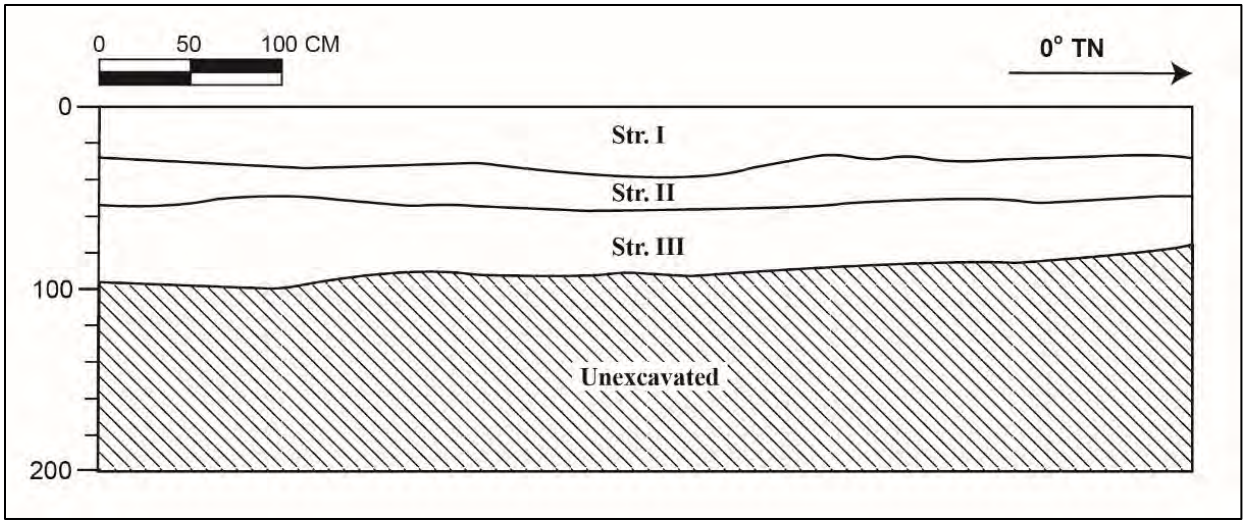


Figure 69. TE-16, stratigraphic profile of west wall

Table 19. TE-16, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–55	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots
II	46–62	Natural; 10YR 4/1, dark gray; extremely gravelly silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, wavy lower boundary; common, fine roots
III	62–92	Natural; 10YR 5/4, yellowish brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; lower boundary not observed; few, fine roots



Figure 70. TE-17, general view of west wall, view to northwest



Figure 71. TE-17, close-up of west wall, view to west

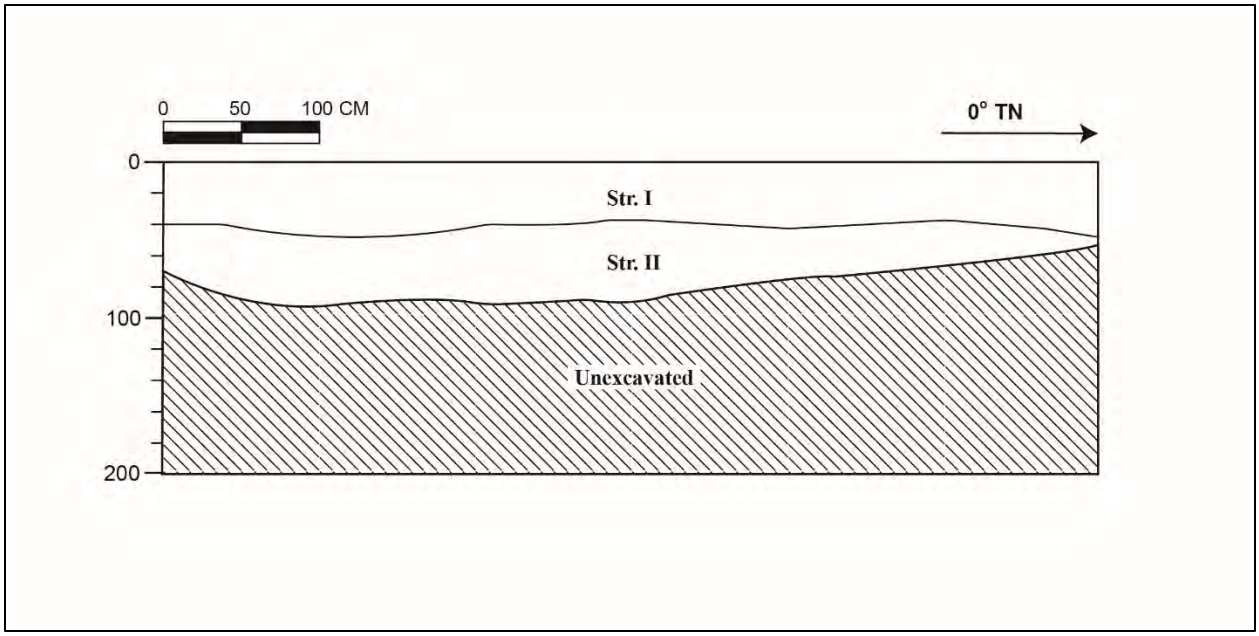


Figure 72. TE-17, stratigraphic profile of west wall

Table 20. TE-17, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–50	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots, mottled with gray gravel
II	37–76	Natural; 10YR 6/4, light yellowish brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, lower boundary not observed; common, fine roots



Figure 73. TE-18, general view of west wall, view to southwest



Figure 74. TE-18, close-up view of west wall, view to west

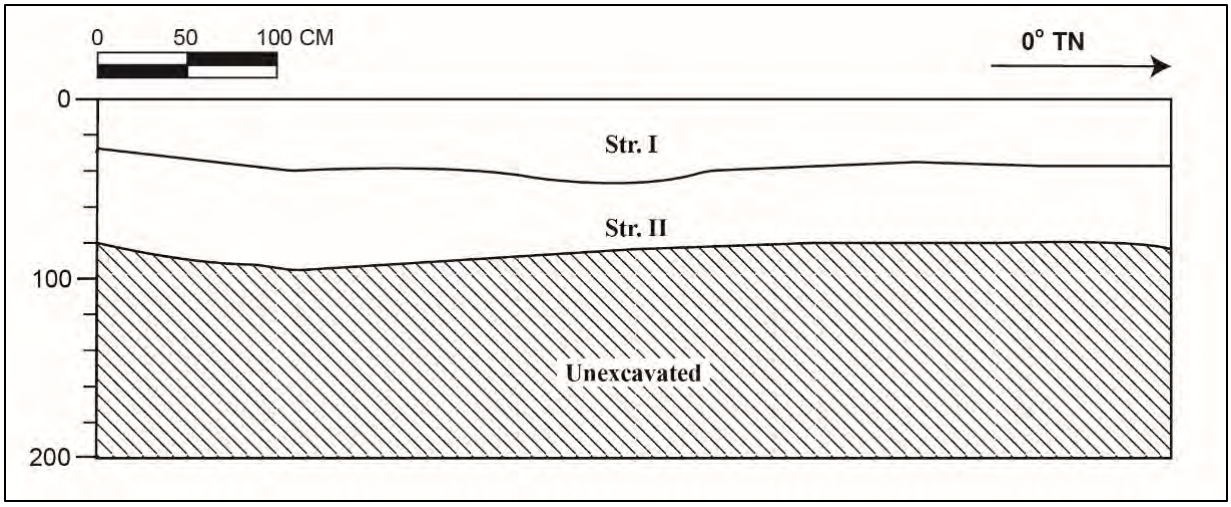


Figure 75. TE-18, stratigraphic profile of west wall

Table 21. TE-18, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–45	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots, mottled with gray gravel
II	30–97	Natural; 10YR 6/4, light yellowish brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, lower boundary not observed; common, fine roots



Figure 76. TE-19, general view of north, view to northeast



Figure 77. TE-19, close-up of north wall, view to north

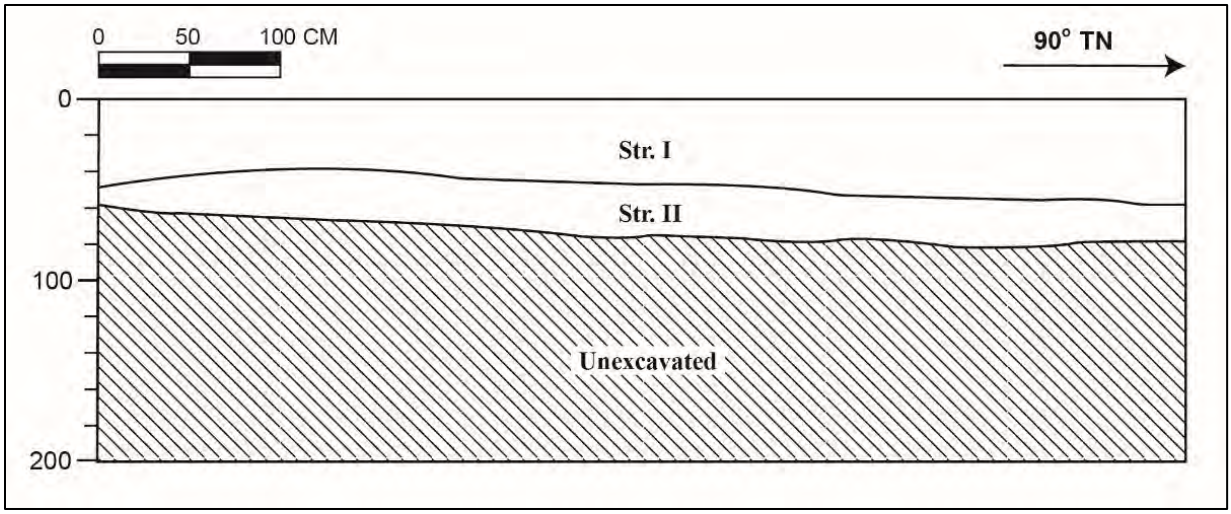


Figure 78. TE-19, stratigraphic profile of north wall

Table 22. TE-19, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–45	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots, mottled with gray gravel
II	30–97	Natural; 10YR 6/4, light yellowish brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, lower boundary not observed; common, fine roots



Figure 79. TE-20, general view of west, view to northwest



Figure 80. TE-20, close-up of west wall, view to west

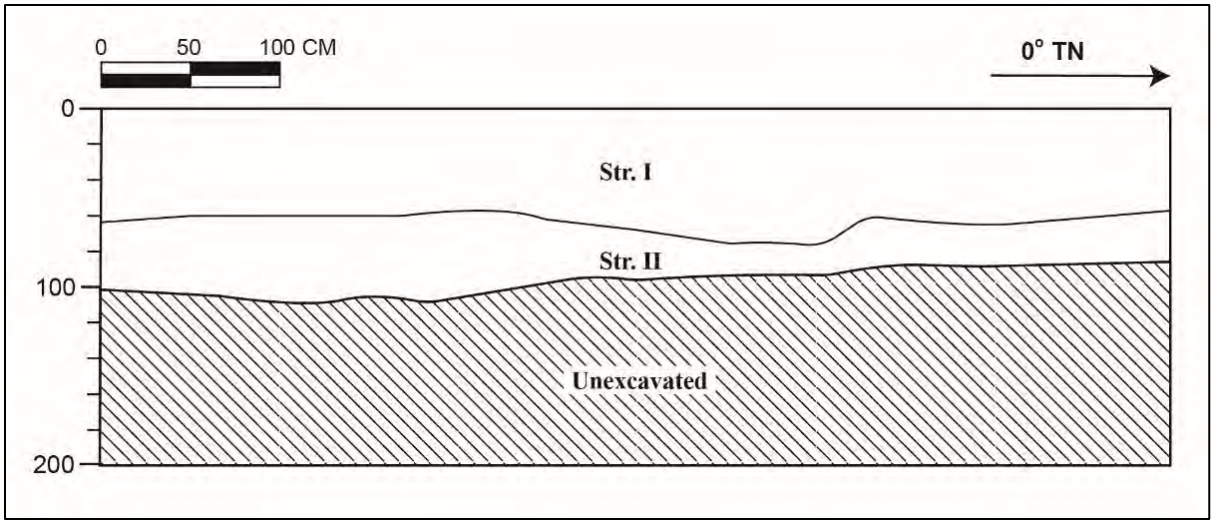


Figure 81. TE-20, stratigraphic profile of west wall

Table 23. TE-20, stratigraphic description

Stratum	Depth (cmbs)	Description of Sediment
I	0–77	Ap horizon; 2.5YR 3/2, dusky red; gravelly silty clay loam; granular, moderate, fine structure; moist, firm consistency; no cementation; plastic; terrigenous origin; clear, wavy lower boundary; many, fine, medium roots, mottled with gray gravel.
II	59–110	Natural; 2.5YR 3/4, dark reddish brown; silty clay; platy, moderate, fine structure; moist, friable consistency; no cementation; plastic; terrigenous origin; abrupt, lower boundary not observed; common, fine roots.

Section 5 Summary

CSH has prepared this archaeological assessment report for the Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project, Pūlehunui Ahupua‘a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 (por.). The study is termed an “archaeological assessment” in accordance with §13-284-5(5)(A) due to negative findings of the project’s AIS

The project area is 57.9 acres (23.4 hectares) and is understood to be privately owned by Hawaiian Cement Condominium-Condo Master. The proposed, privately funded project will include cement quarry mining within the entire footprint of Increment 4. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock. The bedrock will then be quarried and processed. No quarrying will occur within Kolaloa Gulch.

While previous archaeological studies conducted in the vicinity of the project area have identified numerous surface historic properties related to commercial sugarcane cultivation, ranching, and military use, no historic properties have been identified within the current project area. The project area was subject to a reconnaissance level pedestrian inspection with no finds . Two adjacent archaeological inventory surveys included a total to 37 backhoe-assisted test excavations with no finds.

Fieldwork for the current study was conducted between 27 December 2022 and 29 December 2022 by CSH archaeologists Jonas Madeus, B.A., Jay Rapoza M.A., and Trevor Yucha, B.S., under the general supervision of Hallett H. Hammatt, Ph.D. This work required approximately seven person-days to complete. Fieldwork included a 100 percent coverage pedestrian inspection of the project area, subsurface testing, and global positioning system (GPS) data collection.

A 100 percent coverage pedestrian inspection of the project area confirmed that there were no historic properties present on the surface. The surface of the project area consisted of fallow sugarcane fields, last planted in 2016, that were slowly being overtaken by young *koa haole* (*Leucaena leucocephala*) and grasses.

Archaeological subsurface testing has confirmed that there are no subsurface historic properties within the project area. CSH archaeologists, with the assistance of a backhoe operator, completed 20 AIS test excavations (TE-1 through TE-20) in accordance with the project’s SHPD-accepted AIS testing strategy. In general, the stratigraphy observed throughout the project area included a modern agricultural plow zone surface (Ap horizon) overlying natural alluvial soil and chemically eroded bedrock throughout the majority of the project area. The stratigraphy of the southern and eastern edges of the project area differed in that the natural sediment beneath the plow zone included strata of naturally deposited volcanic cinder. The negative results of AIS testing within the project area are consistent with the negative results reported from previous studies at the quarry site (Fuentes et al. 2020; Kennedy 1990; Rotunno-Hazuka et al. 2011).

Section 6 Project Effect and Mitigation Recommendations

6.1 Project Effect

The current AIS has confirmed that there were no identified historic properties within the project area and in accordance with HAR §13-13-284-7, the effect recommendation for the proposed project is “no historic properties affected”.

6.2 Mitigation Recommendations

No further work is recommended. While the SHPD had initially requested archaeological monitoring for identification purposes in their initial review of the project (Log No.: 2017.02140/2020.00762; Doc. No.: 2004AM09), the current AIS, which was subsequently requested by the LUC during their review of the project, has confirmed that no historic properties are present. In the unlikely event that subsurface historic properties are identified during mining within the project area, CSH recommends that work be ceased in the immediate vicinity of the find, the find be protected from additional disturbance, and the SHPD be contacted immediately in order to provide additional guidance.

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Appendix A SHPD Correspondence

NEIL ABERCROMBIE
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

August 8, 2012

Mr. Jeffrey Pantaleo, Principal Investigator
C/O Ms. Lisa Rutunno-Hazuka
Archaeological Services Hawai‘i
Via Email: lisa@ashMaui.com

LOG NO: 2011.0298
LOG NO: 2011.0340
DOC NO: 1208JP01

Aloha Ms. Rotunno-Hazuka:

SUBJECT: **Chapter 6E-42 Historic Preservation Review-**
Archaeological Assessment Report for the Hawaiian Cement Quarry Expansion Project
Pulehunui Ahupua‘a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)

Thank you for the opportunity to review the report titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pors., Pulehunui Ahupua‘a, Kula Moku; Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O’Claray and Pantaleo (January 2011). The report was originally received on January 26, 2011. We apologize for the delayed response.

The archaeological survey with negative findings was conducted for the 24.476-acre proposed rock quarry expansion site. A surface investigation occurred along with twenty excavated mechanical backhoe test trenches. Over the years, the project area has been disturbed continuously by intensive agricultural propagation and rock mining. Approximately 9.5 acres are active sugarcane fields. No further archaeological work is recommended for the project area, we concur with this recommendation.

The report contains information as required for assessment reports, pursuant to Hawaii Administrative Rule (HAR) 13-284 and13-276-5; it is accepted as final. We request that a few corrections to be included in the final report (see attachment). Please send one hardcopy of the corrected final document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. Please send a corrected final report to the Maui SHPD office as well. For questions about this letter, please contact Jenny at (808) 243-5169 or Jenny.L.Pickett@Hawaii.gov.

Mahalo,

Theresa K. Donham
Archaeology Branch Chief

cc: County of Maui, Planning fax: (808) 270-7634
County of Maui DSA fax: (808) 270-7972

ATTACHMENT

Requested corrections for: *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pors., Pulehunui Ahupua'a, Kula Moku; Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011).

Previous Archaeological Studies

1) Please add the recent Cultural Surveys Hawaii archaeological surveys (2007 etc) to the map (Figure 9) and to the previous archaeology background text.

Lab Work

2) Please edit this section to indicate nothing was identified, collected, or being curated.

Trench Descriptions

3) Please correct the associated trench Figures to correspond with the accurate text references.

Additional Comment

4) Please adjust the contents regarding archaeological recommendations for adjacent areas accordingly. In the final copy of the report, please adjust the associated contents accordingly. As we recently discussed in meeting regarding the project report, individual projects are usually treated separately so each project needs to be evaluated on a case-by-case basis. We hope to continue evaluating and providing recommendations regarding future proposed projects for the surrounding areas.

DAVID Y. IGE
GOVERNOR OF HAWAII

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CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
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STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
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May 12, 2015

Jeffrey Pantaleo, M.A.
c/o Lisa Rotunno-Hazuka
Archaeological Services Hawaii, LLC
PO Box 1015
Puunene, Hawaii 96784
Via email to: lisa@ashmaui.com

LOG NO: 2014.04654
DOC NO: 1505MD19
Archaeology

Aloha Mr. Pantaleo:

SUBJECT: **Chapter 6E-42 Historic Preservation Review–**
Draft Archaeological Assessment for the Hawaiian Cement Quarry
Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)

Thank you for the opportunity to review the submittal titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 pors., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui* by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014). We received the submitted report on October 13, 2014 and apologize for the delay in our reply.

An archaeological survey was conducted prior to planned expansion of the existing Hawaiian Cement Quarry at the request of Mr. Gomes for the owner. This report documents an archaeological inventory survey of 41.968 acres, a portion of the 2,008 acres contained in parcel 001. Fieldwork occurred on the 14th and 28th of June and the 3rd and 12th of July in 2014. 33.168 acre were cultivated in sugarcane at that time, while 8.8 acres were cleared following harvest. Pedestrian survey was performed by one archaeologist and was followed by 19 mechanical excavations, including 17 backhoe trenches and two bulldozer cuts. No historic properties were identified in any of the excavations or above ground.

We are requesting revisions to the report as detailed in the attachment to this letter. Please contact me at (808) 243-4641 or Morgan.E.Davis@hawaii.gov if you have any questions or concerns about this letter.

Mahalo,

Morgan E. Davis
Lead Archaeologist, Maui Section

Attachment
Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 pors., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014)

1. Executive Summary, page 2, first paragraph: please replace "As detailed in" for "The" before 'background research.'

    a. Fifth paragraph: please delete everything after the second paragraph, beginning with the sentence beginning "Similarly" – these statements regarding areas outside of the survey area are out of scope for this report.

2. Introduction, page 9, first paragraph: please include a citation for the prior AA work in the nearby 42 acres mentioned here.

3. Figure 2, page 11: please provide a more detailed/closeup view (or a second map showing a portion, not all, of parcel 001) of the APE including the boundaries of Camps 3 and 13.

4. Existing Conditions, page 12, Environmental Setting first paragraph, first sentence: please replace "piece of land district" with "section of land."

    a. Second to last sentence, same page: please replace "Kula District" with either "Makawao District" or "Kula Moku."

    b. Last sentence: please clarify which "this" *ahupua'a* is referring to, as two were mentioned above.

5. Previous Archaeology, page 17, second entry: please note that Sinoto and Pantaleo 1991 does not appear on figure 8; please include.

    a. Page 18, ASH 2010 AA, end of page: please provide a citation for the information about adding marine shells as a soil conditioner to provide phosphorous.

    b. Page 19, final sentence: please replace lead-in "Unfortunately" with "However."

6. Field Work, page 21, second paragraph: please indicate the transect spacing used in pedestrian survey.

    a. Third paragraph, second sentence: please revise – testing was not "systematic random" because it was worked around actively-farmed acreage, approximately 70% of the parcel was farmed in sugarcane at the time.

7. Results of Survey, page 22, third sentence: please revise as necessary, the sentence appears to have been cut off/incomplete after the number 17.

    a. Somewhere in here, the inconsistency of excavation results needs to be addressed. Some trenches contained only a single layer, while others were up to five deep; yet all this was within a generally consistent depth. Please revise as necessary.

8. Table 1, pages 24-25: please continue the header on both pages.

    a. Please provide a key for the null (?) value appearing first in the entry of Layer V, Trench #1.

9. Discussion and Recommendations, page 54, paragraph 2: please revise to include an explanation for variety observed in the findings and questioned in item 7a above.

a. Fourth paragraph, sentence beginning "Similarly" and below – delete text between this word and the final sentence, these statements regarding areas outside of the survey area are out of scope for this report.

10. Appendix A, beginning on page 60: please review and revise. There are too many trench profiles labelled "TR 3" to be accurate; and only TRs 1-6 appear to be present. Also, specifically anomalous trenches like TR 9 are missing.

DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
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M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD., STE 555
KAPOLEI, HI 96707

April 17, 2020

Mr. Glen Ueno, Administrator
County of Maui
Department of Public Works
Development Services Administration Division
250 South High Street
Wailuku, Hawaii 96793

IN REPLY REFER TO:
Log No.: 2017.02140
2020.00762
Doc. No.: 2004AM09
Archaeology

Dear Mr. Glen Ueno:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
Archaeological Assessment Report for the Hawaiian Cement Expansion Project and Archaeological Monitoring Plan for the Increments 2 and 4 of the Expansion Project
Pūlehu Nui Ahupua‘a, Wailuku District, Island of Maui
TMK: (2) 3-8-004:001 por.

This letter provides the State Historic Preservation Division's (SHPD's) review of the subject draft report titled, *Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-004:001 pors., Pūlehu Nui Ahupua‘a, Kula Moku, Wailuku District, Island of Maui* (Fuentes et al., March 2020). SHPD previously reviewed the subject archaeological assessment (AA) report and request revisions to the report in a letter dated May 12, 2015 (Log No. 2014.04654, Doc. No. 1505MD19). SHPD received the subject revised report on September 17, 2017 (Log No. 2017.02140).

This letter also provides SHPD's review of the subject draft plan titled, *Archaeological Monitoring Plan for the Hawaiian Cement Quarry Mining Site Increments 2 and 4 Expansion Project, Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 por.* (Yucha and Hammatt, March 2020). SHPD received the subject archaeological monitoring plan on March 31, 2020 (Log No. 2020.00762) following consultation between Hawaiian Cement, Cultural Surveys Hawaii Inc. (CSH, archaeological consultant), and SHPD on March 4, 2020.

The parcel has been subject to previous archaeological investigations including an archaeological reconnaissance survey (Kennedy 1990), and two archaeological inventory surveys (Rotunno-Hazuka et al. 2011 and Fuentes et al., March 2020). The two archaeological inventory survey (AIS) investigations identified no historic properties. Per HAR §13-284-5(b)(5)(A), negative AIS results shall be presented in an archaeological assessment (AA) report. SHPD reviewed and accepted the Rotunno-Hazuka et al. (2011) AA report in a letter dated August 8, 2012 (Log Nos. 2011.0298 and 2001.0340, Doc. No. 1208JP01). SHPD reviewed and requested revisions to a draft of the Fuentes et al. (October 2014) AA report in a letter dated May 12, 2015 (Log No. 2014.04654, Doc No. 1505MD19) and received the subject revised report on September 17, 2017 (Log No. 2017.02140).

The Fuentes et al. (2020) AIS was conducted in support of the Hawaiian Cement Quarry Expansion project. The project area consists of a 41.968-acre portion of the overall 2,008-acre subject parcel. Archaeological testing of the project area included a pedestrian survey of a portion of the project area spaced in 5-meter intervals. Additionally, 17 backhoe test trenches and two bulldozer cuts were excavated. No historic properties were. The AA report includes the locations of the test trenches, photographs, soil profiles drawn to scale, and soil descriptions using USDA soil terminology and attributes with Munsell colors.

Glen Ueno
4/17/20
Page 2

The revised Fuentes et al. (2020) AA report adequately addressed the requested revisions from our previous review (Log No. 2014.04654, Doc No. 1505MD19). The report meets the minimum requirements specified in HAR §13-276-5. **The AA report is accepted.** Please send two hard copies of the document, clearly marked FINAL, along with a copy of this review letter and a text-searchable PDF version to the Kapolei SHPD office, attention SHPD Library and to lehua.k.soares@hawaii.gov.

Hawaiian Cement and their archaeological consultant (CSH) consulted with SHPD during a meeting on March 4, 2020. During the meeting, Hawaiian Cement requested SHPD review the revised AA report submitted to SHPD on September 17, 2017 (Log No. 2017.02140). Additionally, Hawaiian Cement proposed work for increments 2 and 4 of the expansion project, including a field inspection with program of archaeological monitoring for identification purposes to be conducted during the excavation of soils overlying bedrock within the project area. The proposed project will include cement quarry mining within the entire footprint of increments 2 and 4. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock to be quarried and processed. No quarrying will occur within Kolaloa Gulch.

The AMP (Yucha and Hammatt, March 2020) proposes archaeological monitoring for identification purposes and provides a summary of previous archaeological investigations and identified historic properties present within the parcel and is formatted to address the rules outlined in HAR §13-279-4 (1) through (8) and stipulates the following.

- Archaeological monitoring will begin with the completion of a 100% coverage pedestrian inspection to confirm that there are no surface historic properties within the project area. This inspection will be completed prior to the start of project-related ground disturbance;
- A coordination meeting will be conducted between the construction team and monitoring archaeologist prior to construction activities so the construction team is aware of the need for archaeological monitoring and the provisions detailed in the plan;
- Archaeological monitoring will include a combination of on-site and on-call monitoring. An on-site archaeological monitor will observe sediment excavation for up to five (5) full days to confirm there are no subsurface historic properties within the sediment deposits of the project area. If there are no significant finds during this period, the remainder of sediment excavation will proceed under on-call archaeological monitoring with an archaeologist conducting spot checks once every 10 business-days to record progress and inspect the exposed stratigraphy for historic properties. No archaeological monitoring will occur during quarrying of the basalt bed;
- Quarterly archaeological monitoring letter reports will be submitted to SHPD consisting of a cover letter with photographs, a summary of archaeological work and the status of project related construction work;
- The Quarterly reports will start with the results of the initial pedestrian survey and are intended to keep SHPD informed. A monitoring report meeting the requirements of HAR §13-279-5 and covering all the reported work will be submitted for review and acceptance following the completion of project related archaeological monitoring;
- The archaeological monitor has the authority to temporarily halt all activity in the area in the event of a potential historic property being identified, or to record archaeological information for cultural deposits or features;
- If non-burial historic properties are identified, documentation shall include, as appropriate, recording stratigraphy using USDA soil descriptions, GPS point collection, recordation of feature contents through excavation or sampling of features, screening of features, representative scaled profile drawings, photo documentation using a scale and north arrow, and appropriate laboratory analysis of collected samples and artifacts. Additionally, photographs and profiles of excavations will be collected from across the project area even if no significant historic properties are encountered. Representative profiles will be a minimum of 2-meter sections;
- If human remains are identified, work will cease in the vicinity and the find shall be secured, and provisions outlined within the Hawaii Revised Statutes (HRS) §6E-43 and HAR §13-300-40, and any SHPD directives, shall be followed;
- Collected materials not associated with burials will be temporarily stored at the archaeological firm's office/laboratory until an appropriate curation facility is selected, in consultation with the landowner and the SHPD and;
- Any changes in these provisions shall occur only with written approval from the SHPD.

The plan meets the minimum requirement of HAR §13-279-4. **It is accepted**. Please send two hard copies of the document, clearly marked FINAL, along with a text-searchable PDF version to the Kapolei SHPD office, attention SHPD Library. Additionally, please send a digital copy of the final AMP (Yucha and Hammatt, March 2020) to lehua.k.soares@hawaii.gov.

SHPD hereby notifies the County that the AA report (Fuentes et al., March 2020) and the AMP (Yucha and Hammatt, March 2020) have been accepted. The permit issuance process may continue.

SHPD requests written notification at the start of archaeological monitoring. SHPD looks forward to receiving brief archaeological monitoring letter reports of findings **quarterly** as specified in HAR §13-282-3(f)(1). Subsequently, SHPD looks forward to receipt of an archaeological monitoring report meeting the requirements of HAR §13-279-5 for review and acceptance following the conclusion of archaeological monitoring work.

Please contact Andrew McCallister, Historic Preservation Archaeologist IV, at Andrew.McCallister@hawaii.gov or at (808) 692-8015 for matters regarding archaeological resources or this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: The County of Maui, dsa.subdivision@mauicounty.gov
The County of Maui, building.permits@mauicounty.gov
Atlas Archaeology, atlasarch808@gmail.com
Trevor Yucha, CSH, tyucha@culturalsurveys.com
Gomes, David, Hawaiian Cement, david.gomes@hawaiiancement.com

Appendix B AIS Testing Strategy

CULTURAL SURVEYS HAWAI'I
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Branch Offices:
Hilo, Hawai'i
Kona, Hawai'i
Lāwai, Kaua'i

October 14, 2022

State Historic Preservation Division
Department of Land and Natural Resources
130 Mahalani Street
Wailuku, HI 96793
(808) 652-1510

Subject: Archaeological Inventory Survey Fieldwork Strategy for the Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project, Pūlehunui Ahupua'a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 por.

CSH Job Code: PULEHUNUI 19
HICRIS Project: 2022PR01184

Aloha SHPD Staff:

Cultural Surveys Hawai'i, Inc. (CSH) has been contracted to complete an archaeological inventory survey (AIS) for the Hawaiian Cement Quarry Mining Site Increment 4 Expansion Project located in Pūlehunui Ahupua'a, Wailuku District, Maui (Figure 1). An AIS for the project was not requested by the SHPD in their Chapter 6E-42 historic preservation review of the subject project (Log No.: 2017.02140/2020.00762; Doc. No.: 2004AM09), but has been requested by the State of Hawai'i Land Use Commission (LUC), and therefore, Hawaiian Cement has proposed to voluntarily conduct an AIS. This letter provides an overview of the proposed AIS fieldwork strategy to comply with the SHPD's standard request that the project proponent and archaeological firm consult with your office regarding an appropriate testing strategy prior to initiation of the AIS.

AIS Fieldwork Strategy

The AIS fieldwork will include a 100 percent coverage pedestrian survey of the surface of the project area to identify any surface historic properties that may be present. If surface historic properties are identified, these properties will be inventoried and documented in accordance with Hawai'i Administrative Rules (HAR) 13-13-276-5(d) and other pertinent law.

WWW.CULTURALSURVEYS.COM - INFO@CULTURALSURVEYS.COM

Following the surface survey, CSH will complete 20 backhoe-assisted test excavations that are proposed for placement throughout the project area to provide representative coverage (Figure 2 and Figure 3).

Fieldwork will be supervised by CSH principal investigator and qualified osteologist, Josephine Yucha, M.S. along with a field crew of 2-4 archaeologists. A backhoe contractor will be used to slowly excavate and backfill each trench. If sand deposits or other potentially significant deposits are encountered, these deposits will be excavated by hand (shovel, trowel, etc.) utilizing the backhoe to remove backfill material and safely manage the backfill pile.

Documentation of each excavation will include the recordation of soils, a stratigraphic profile of the entire length of the excavation, photographs, and sub-meter accurate GPS location. If non-burial subsurface historic properties are identified then CSH will document these historic properties in accordance with HAR 13-13-276-5(d) and other pertinent law. If human skeletal remains are identified, they will be treated as previously identified finds. CSH will stop work, notify the SHPD and representatives of the Maui/Lāna'i Islands Burial Council (MLIBC), and ensure that the remains are preserved in place pending an MLIBC treatment determination.

Following each excavation, the area will be backfilled, compacted, and restored to near original condition. CSH will then prepare and submit a draft AIS report for the review and acceptance of the SHPD.

If you have any questions or comments regarding this strategy, please feel free to call me at (808) 242-9882 on Maui or toll free at 1-800-599-9962. You may also reach me by e-mail at tyucha@culturalsurveys.com.

Sincerely,

Trevor Yucha
Cultural Surveys Hawai'i, Inc.

CULTURAL SURVEYS HAWAII

To: SHPD **Page 3**

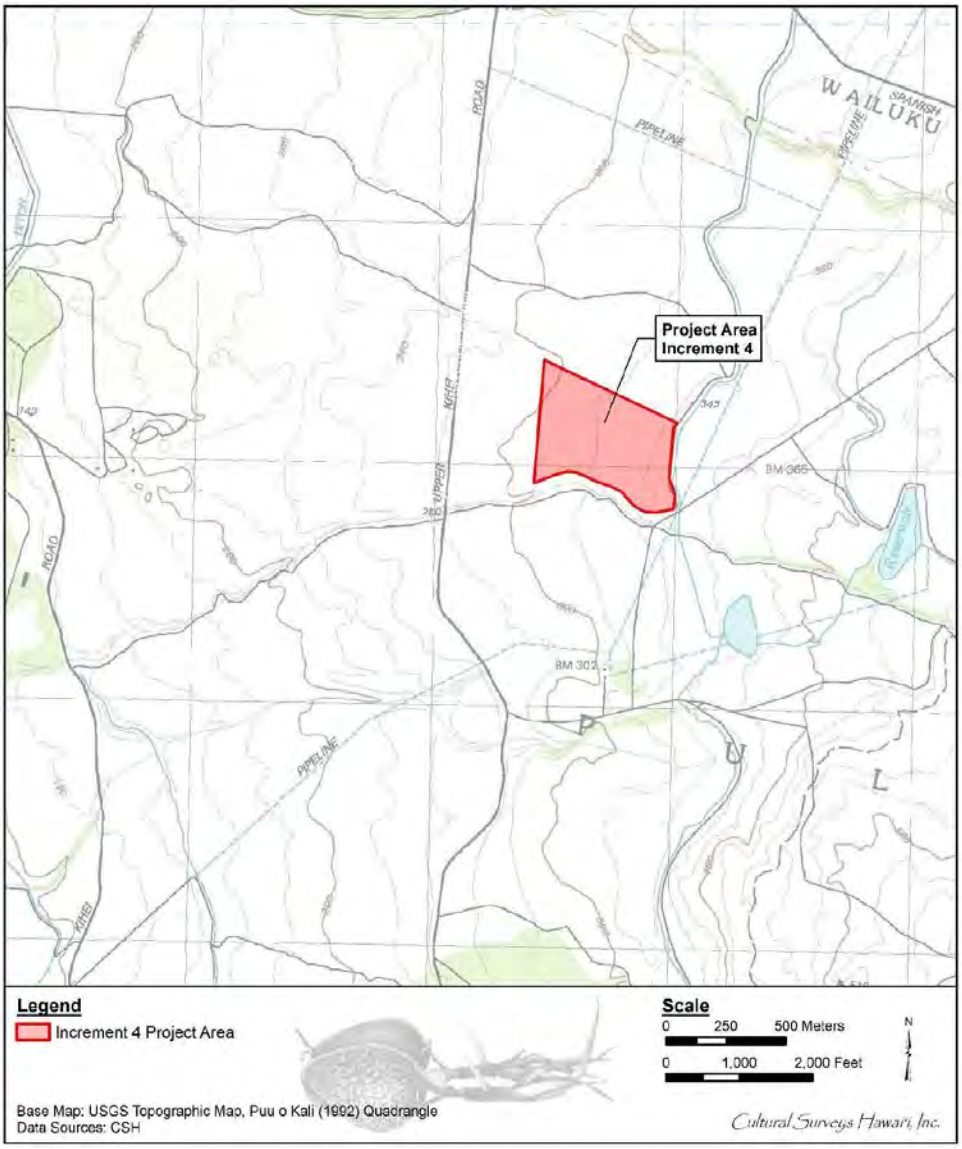


Figure 1. Portion of the 1992 Puu o Kali U.S. Geological Survey 7.5-Minute Topographic Quadrangle depicting the location of the current project area

Re: Hawaiian Cement Quarry Increment 4 Expansion Project

CULTURAL SURVEYS HAWAII

To: SHPD **Page 4**

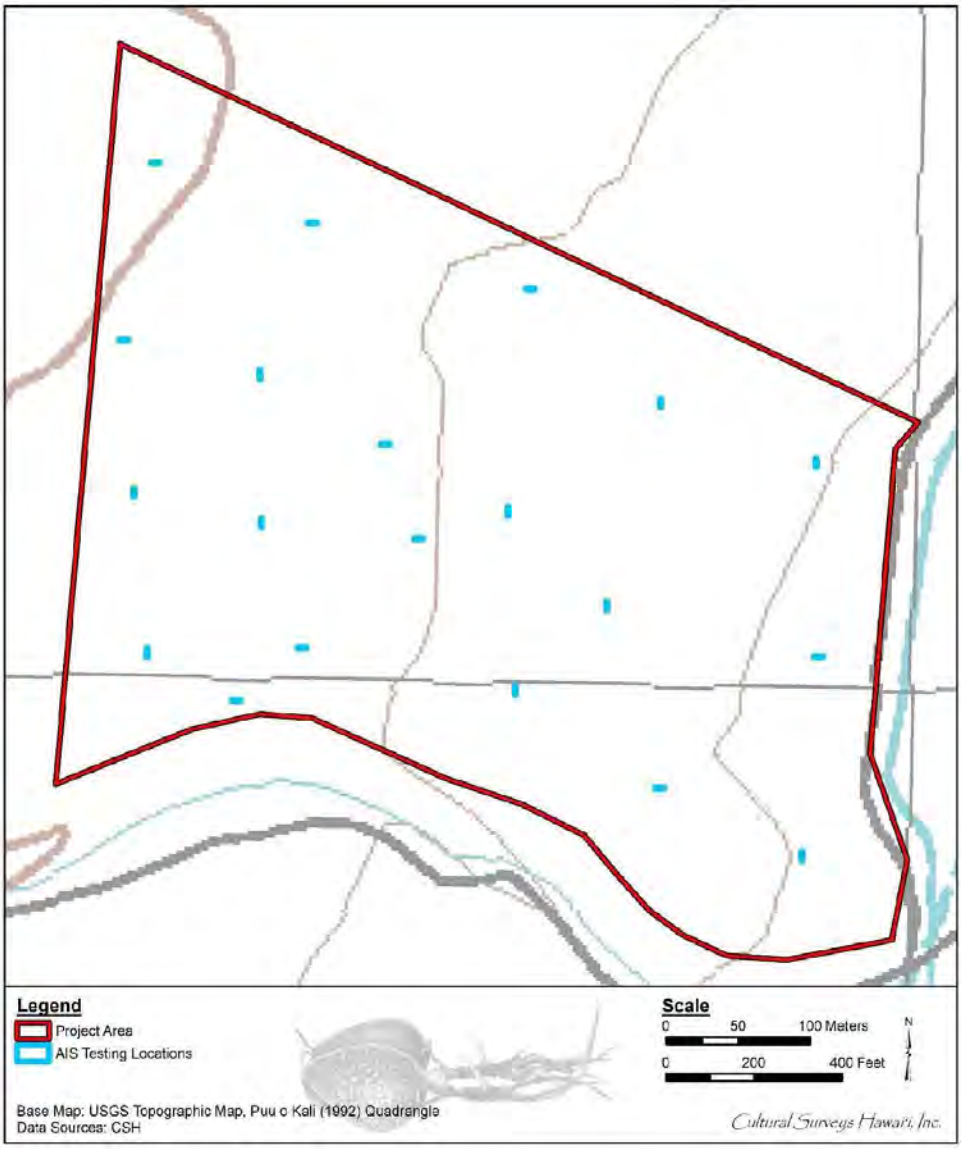


Figure 2. Portion of the 1992 Puu o Kali U.S. Geological Survey 7.5-Minute Topographic Quadrangle depicting the location of 20 proposed AIS test excavations (blue) within the project area (red)

Re: Hawaiian Cement Quarry Increment 4 Expansion Project

CULTURAL SURVEYS HAWAII

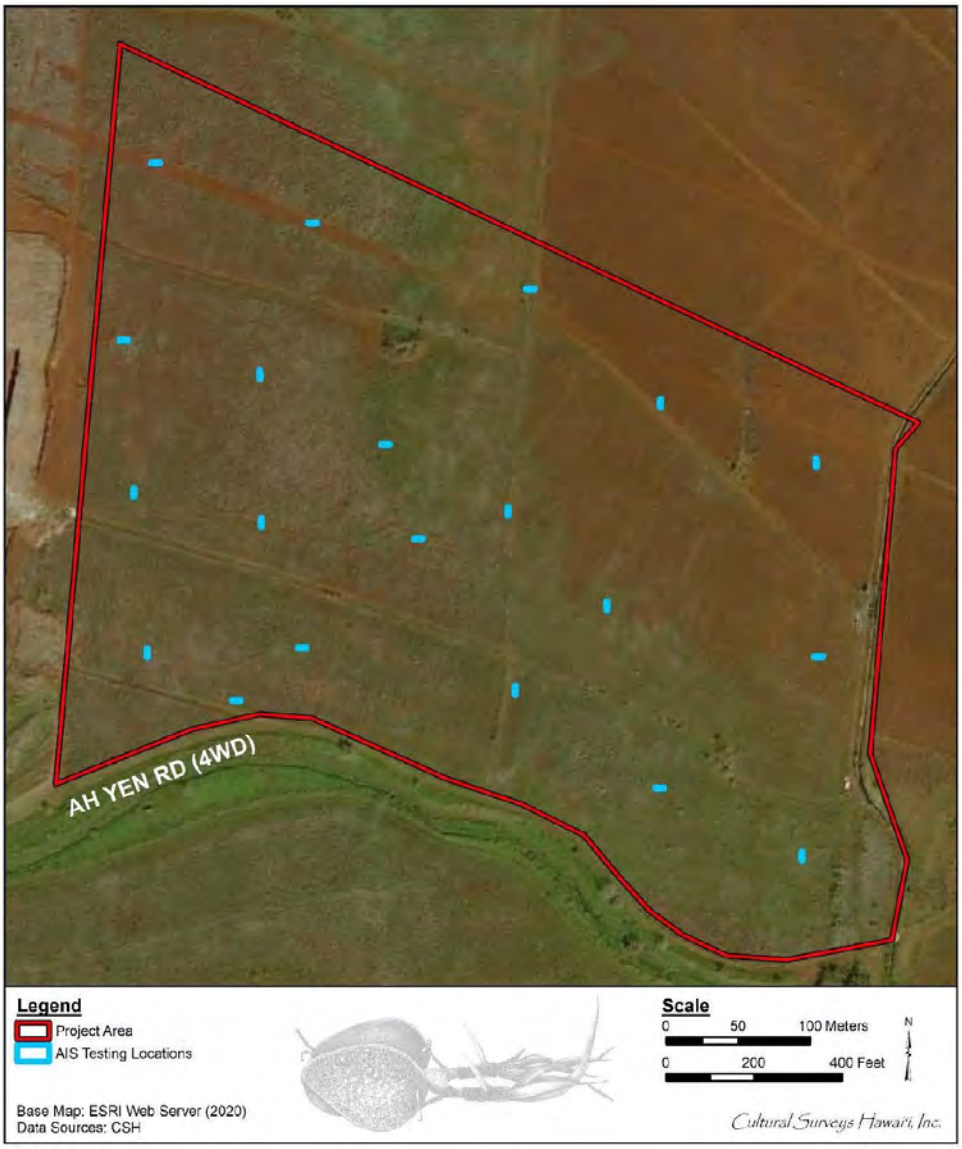


Figure 3. 2020 aerial photograph depicting the location of 20 proposed AIS test excavations (blue) within the project area (red)

EXHIBIT I.

Archaeological Monitoring Plan
Dated March 2020

FINAL

Archaeological Monitoring Plan for the Hawaiian Cement Quarry Mining Site Increments 2 and 4 Expansion Project, Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 por.

Prepared for
Hawaiian Cement

Prepared by
Trevor M. Yucha, B.S.
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: PULEHUNUI 17)

March 2020

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Management Summary

Reference	Archaeological Monitoring Plan for the Hawaiian Cement Quarry Mining Site, Increments 2 and 4 Expansion Project, Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 por. (Yucha and Hammatt 2020)
Date	March 2020
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: PULEHUNUI 17
Investigation Permit Number	CSH will likely complete the archaeological monitoring fieldwork under archaeological fieldwork permit number 20-07, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-13-282.
Agencies	County of Maui; SHPD
Land Jurisdiction	Private (Hawaiian Cement)
Project Funding	Private
Project Location	The project area is located on the western flank of Haleakalā along the edge of the central isthmus of Maui. The project area borders Upper Kīhei Road and is east (*mauka*) of the Puunene Armory and Maui Raceway Park. Increment 2 is located on the south side of Kolaloa Gulch and west side of Upper Kīhei Road. Increment 4 is located on the north side of Kolaloa Gulch and east side of Upper Kīhei Road. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey 7.5-minute topographic quadrangle.
Project Description	The proposed project will include cement quarry mining within the entire footprint of Increments 2 and 4. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock. The bedrock will be quarried and processed. No quarrying will occur within Kolaloa Gulch.
Project Acreage	Increment 2 is 56.7 acres (22.9 hectares). Increment 4 is 57.9 acres (23.4 hectares). In total, the project area is 114.6 acres (46.4 hectares).
Project-Related Disturbance	The proposed project will include quarrying and removal of bedrock throughout the entire footprint of the project area. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock. The bedrock will be quarried and processed. No quarrying will occur within Kolaloa Gulch
Historic Preservation Regulatory Context	In 1990, Archaeological Consultants Hawai‘i (ACH) completed a walk-through reconnaissance survey of the Hawaiian Cement Quarry expansion areas including Increments 2 and 4 (Kennedy 1990). At the time of the survey, the entire property was covered in active

	commercial sugarcane fields. No historic properties were identified during the survey and no further work was recommended. In 2010, Archaeological Services Hawai‘i (ASH) conducted an archaeological inventory survey for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an "archaeological assessment" in accordance with §13-284-5(5)(A). The study recommended no further work. The study was reviewed and accepted by the SHPD on 8 August 2012 (SHPD Log No.: 2011.0298 and 2011.0340; Doc. No.: 1208JP01). In 2014, ASH returned to the area to conduct an archaeological inventory survey of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2015 Draft). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. As such the study was termed an "archaeological assessment" in accordance with §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No: 1505MD19). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017 with no response. Quarrying work in Increment 3 began and has continued without SHPD acceptance of the archaeological inventory survey. In order to address proposed quarry expansion in Increments 2 and 4, the landowner and project agency are proposing to conduct archaeological monitoring for identification purposes. This archaeological monitoring plan (AMP) is intended to support the proposed project's historic preservation review under Hawai‘i Revised Statutes (HRS) §6E-42 and HAR §13-13-284. It is also intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. In consultation with the SHPD, this document fulfills the requirements of HAR §13-13-279-4.
Historic Properties Potentially Affected	No historic properties have been identified within the project area or vicinity.
Monitoring Recommendations	Archaeological monitoring will begin with the completion of a 100% coverage pedestrian inspection to confirm that there are no historic properties on the surface of the project area. This inspection will be

	completed prior to the start of project-related ground disturbance and the results will be provided to the SHPD. Archaeological monitoring will be conducted intermittently during the excavation of soils overlying bedrock within the project area and will include a combination of on-site and on-call strategies. CSH recommends that overlying sediment removal from the project area be scheduled to be completed in one effort as opposed to as needed during the quarrying effort if possible. An on-site archaeological monitor will observe sediment excavation for up to five (5) full days to confirm that there are no subsurface historic properties within the sediment deposits of the project area. If there are no significant finds during this effort, the remainder of sediment excavation will proceed under on-call archaeological monitoring with an archaeologist conducting spot checks once every 10 business-days (approximately twice per month) to record progress and confirm that subsurface conditions have not changed. No archaeological monitoring will occur during quarrying of basalt bedrock. In the event of significant finds, the SHPD will be notified. If human remains are identified, construction activity in the vicinity will be stopped and no exploratory work of any kind will be conducted unless specifically requested by the SHPD. All human skeletal remains that are encountered during excavation will be handled in compliance with HAR §13-13-300 and HRS §6E-43.

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Section 1 Introduction

1.1 Project Background

At the request of Hawaiian Cement, Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this archaeological monitoring plan (AMP) for the Hawaiian Cement Quarry Mining Site, Increments 2 and 4 Expansion Project, Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 (por.). The project area is located on the western flank of Haleakalā along the edge of the central isthmus of Maui. The project area borders Upper Kīhei Road and is east (*mauka*) of the Puunene Armory and Maui Raceway Park. Increment 2 is located on the south side of Kolaloa Gulch and west side of Upper Kīhei Road. Increment 4 is located on the north side of Kolaloa Gulch and east side of Upper Kīhei Road. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and a 2016 aerial photograph (Figure 3).

The proposed project will include cement quarry mining within the entire footprint of Increments 2 and 4 (Figure 4). Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock. The bedrock will be quarried and processed. No quarrying will occur within Kolaloa Gulch.

1.2 Historic Preservation Regulatory Context

In 1990, Archaeological Consultants Hawai‘i (ACH) completed a walk-through reconnaissance survey of the Hawaiian Cement Quarry expansion areas including Increments 2 and 4 (Kennedy 1990). At the time of the survey, the entire property was covered in active commercial sugarcane fields. No historic properties were identified during the survey and no further work was recommended.

In 2010, Archaeological Services Hawai‘i (ASH) conducted an archaeological inventory survey for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). The study recommended no further work. The study was reviewed and accepted by the SHPD on 8 August 2012 (SHPD Log No.: 2011.0298 and 2011.0340; Doc. No.: 1208JP01; Appendix A).

In 2014, ASH returned to the area to conduct an archaeological inventory survey of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2015 Draft). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. As such the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No: 1505MD19; Appendix A). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017 with no response. Quarrying work in Increment 3 began and has continued without SHPD acceptance of the archaeological inventory survey.

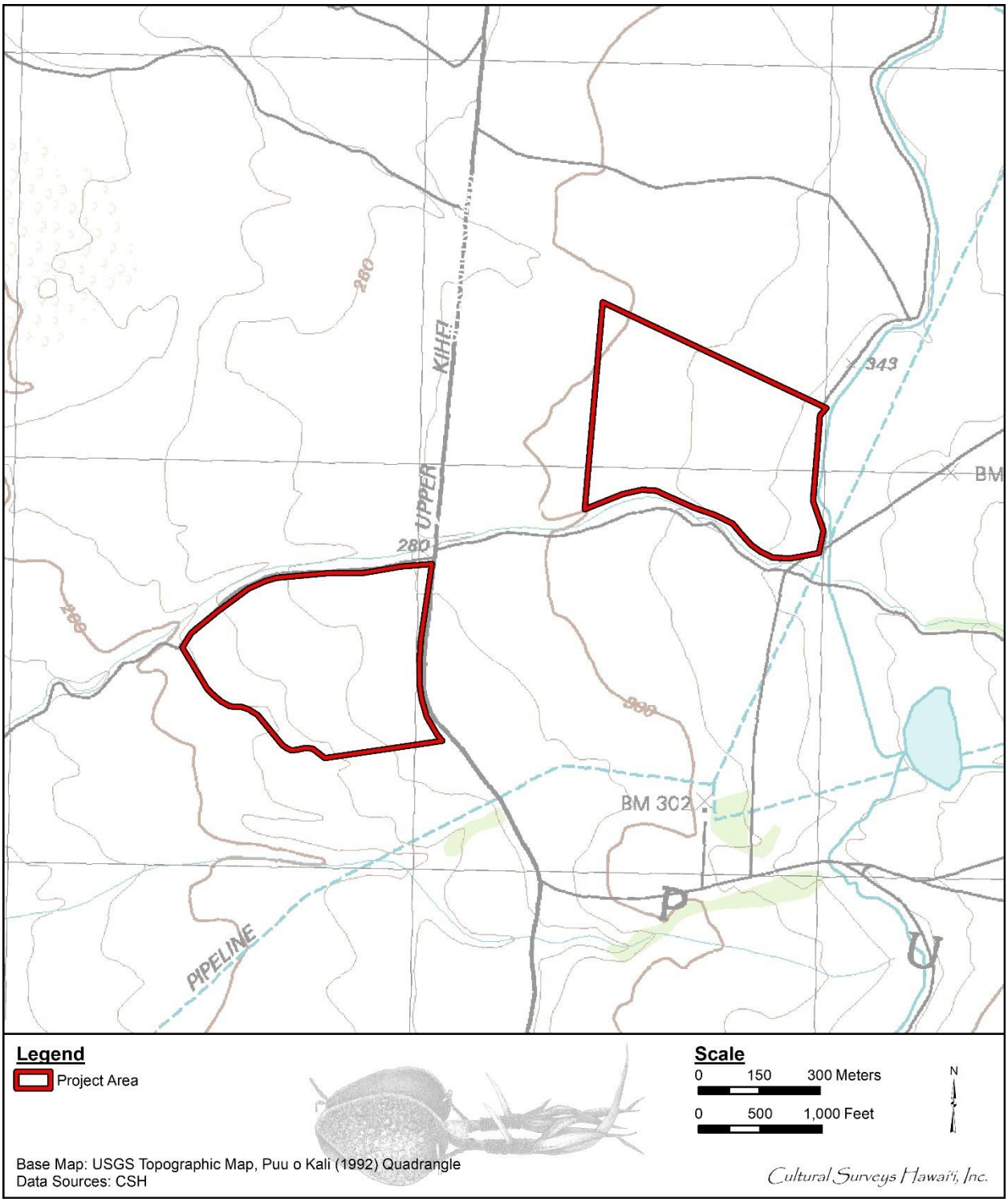


Figure 1. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of the project area (U.S. Geological Survey 1992)

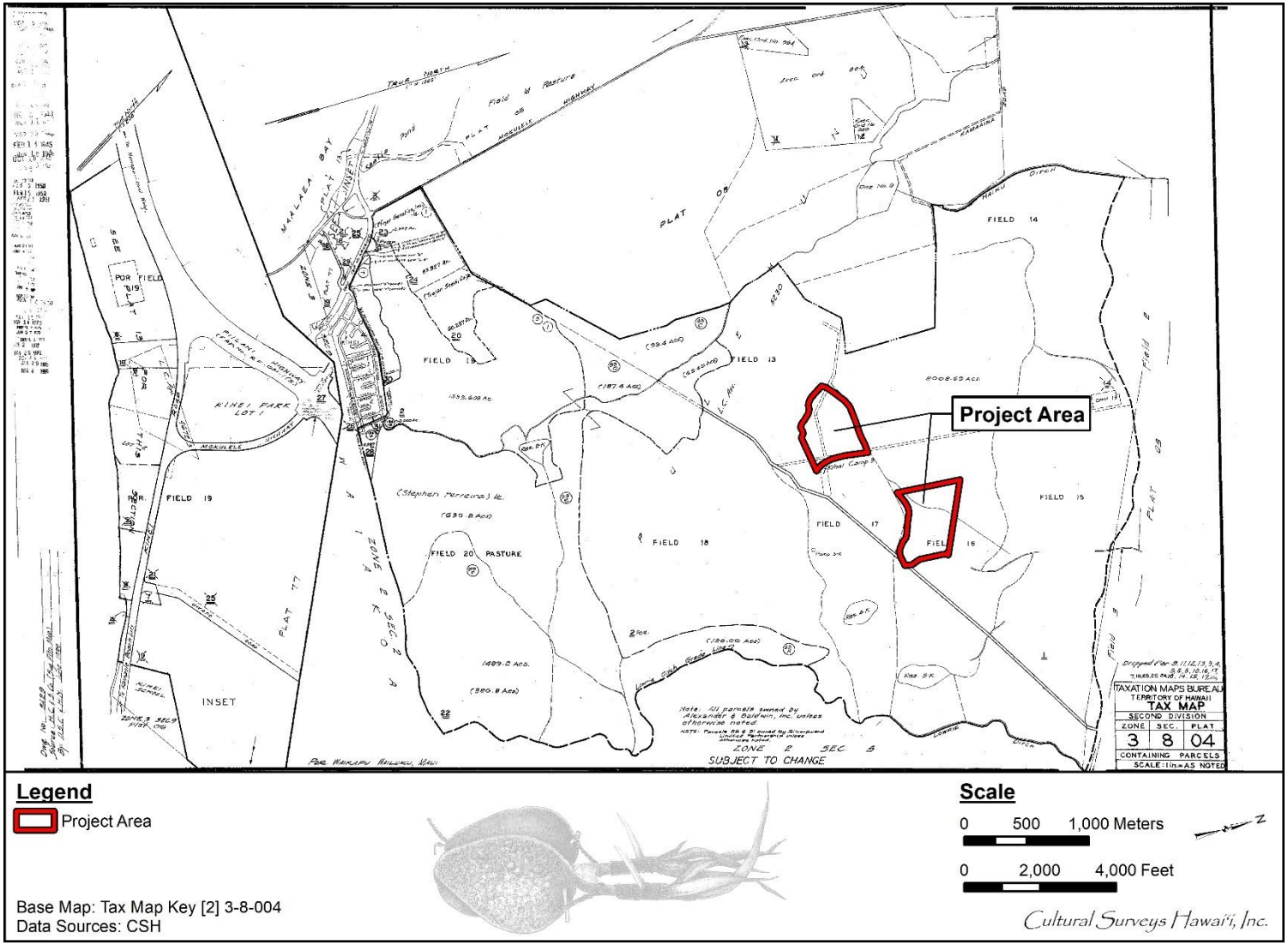


Figure 2. Tax Map Key (TMK) [2] 3-8-004 showing the project area (Hawaii TMK Service 2014)

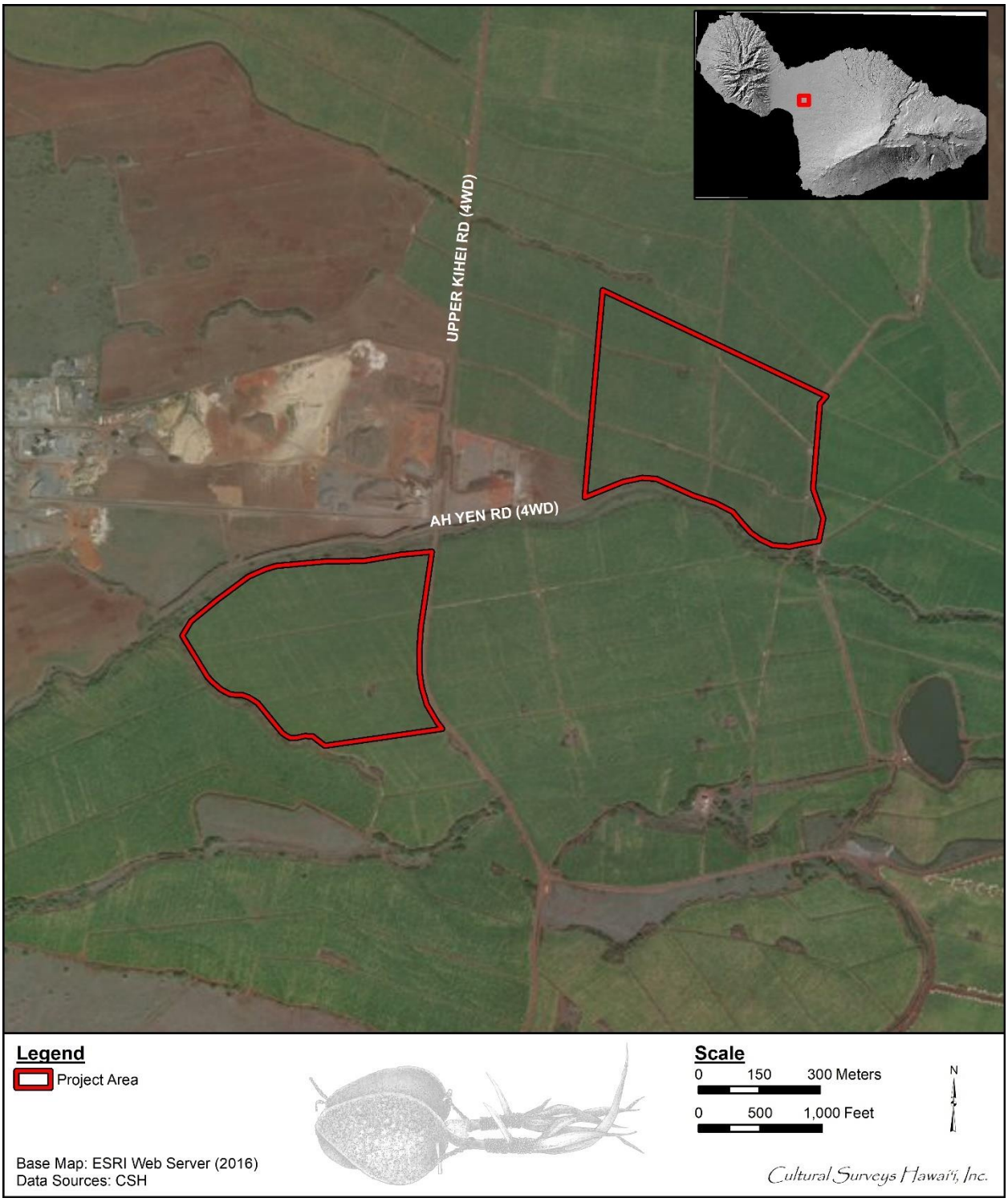


Figure 3. Aerial photograph of the project area (Esri 2016)

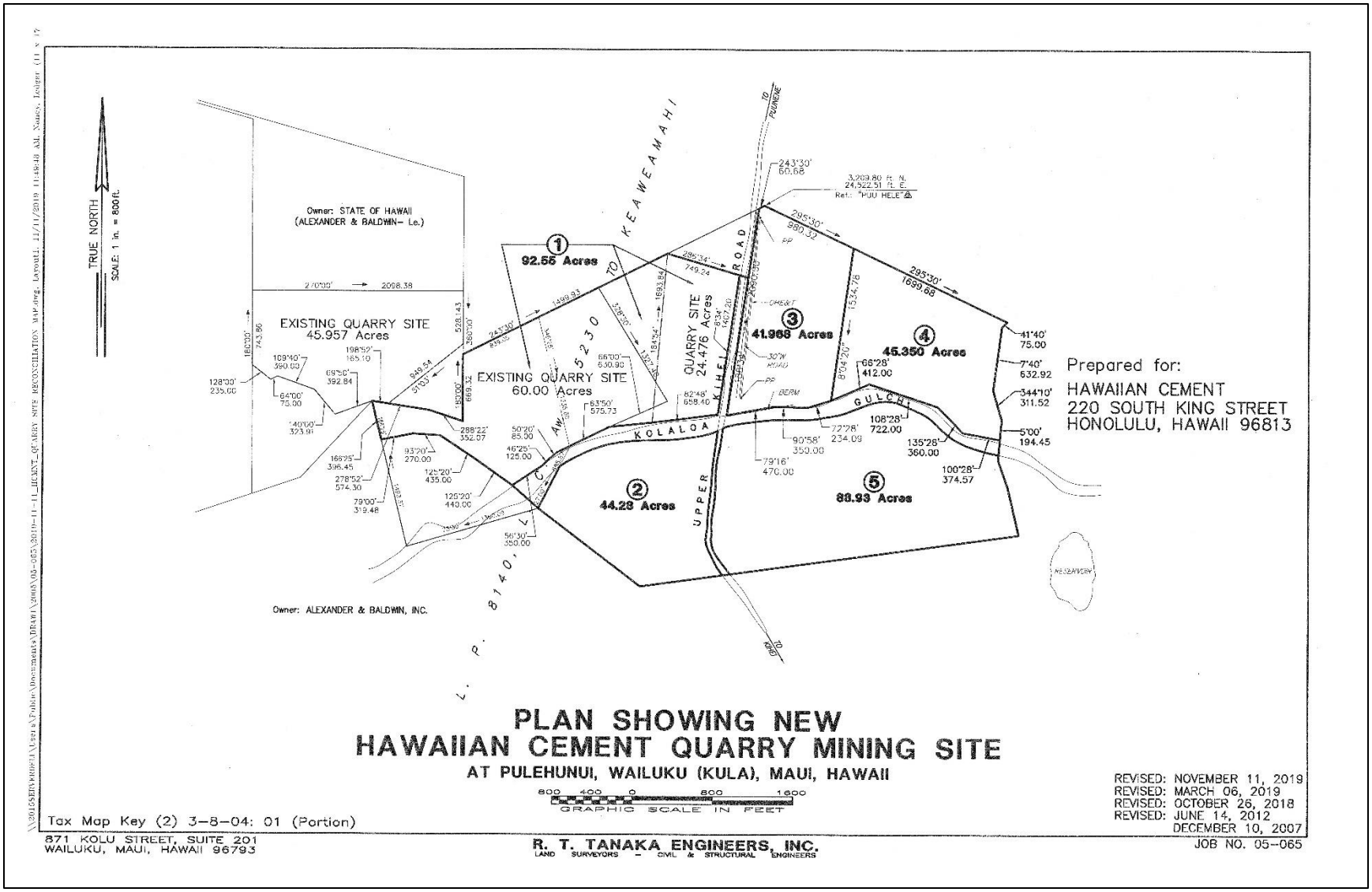


Figure 4. Hawaiian Cement Quarry Mining Site plan showing the location of Increments 2 and 4 (R.T. Tanaka Engineers Inc. 2019)

In order to address proposed quarry expansion in Increments 2 and 4, the landowner and project agency are proposing to conduct archaeological monitoring for identification purposes.

This archaeological monitoring plan (AMP) is intended to support the proposed project's historic preservation review under Hawai‘i Revised Statutes (HRS) §6E-42 and HAR §13-13-284. It is also intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. In consultation with the SHPD, this document fulfills the requirements of HAR §13-13-279-4.

1.3 Environmental Setting

1.3.1 Natural Environment

The current project area is located on the western flank of Haleakalā along the edge of the level central isthmus of Maui. The project area is located approximately 4.75 km (2.95 mi) from the nearest shoreline fronting Kīhei and is 64 to 106 m (210 to 348 ft) above mean sea level. The topography of the project area is a gentle westward slope. The project area, and overall quarry site, is bisected by Kolaloa Gulch, a perennial tributary to Keālia Pond. Other nearby gulches include Pūlehu Gulch to the north of the project area and Keāhuaiwi Gulch to the south of the project area.

In 2014, the average monthly air temperature for the project area was between 21.43°C (70.58°F) in January and 25.50°C (77.90°F) in August, with an average annual air temperature of 23.51°C (74.31°F) (Giambelluca et al. 2014). The vicinity of the project area received a mean annual rainfall of 327.0 mm (12.87 inches) between 1978 and 2007, according to the University of Hawai‘i 2011 *Online Rainfall Atlas of Hawaii* (Giambelluca et al. 2013). The mean monthly rainfall varied between 1.4 mm (0.06 inch) in June and 82.4 mm (3.24 inches) in January. This pattern of rainfall and low annual precipitation rate once sustained a lowland, dry shrubland, and grassland native ecosystem (Pratt and Gon 1998).

Vegetation with the project area includes fallow sugarcane (*Saccharum officinarum*) fields that have become overgrown with *koa haole* (*Leucaena leucocephala*), wild bitter melon (*Momordica charantia*), and other invasive trees, vines, and grasses.

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area's soils consist of Alae cobbly sandy loam, 0 to 3 percent slopes (AcA), Pulehu silt loam, 0 to 3 percent slopes (PpA), Pulehu silt loam, 3 to 7 percent slopes (PpB), Pulehu clay loam, 0 to 3 percent slopes (PsA), Pulehu cobbly clay loam, 0 to 3 percent slopes (PtA), Waiakoa extremely stony silty clay loam, 3 to 7 percent slopes (WhB) (Figure 5).

Alae Series soils are described as:

> This series consists of excessively drained soils on alluvial fans on the island of Maui. These soils developed in volcanic ash and recent alluvium derived from basic igneous rock. They are nearly level to gently sloping. Most areas have cobblestones on the surface. Elevations range from 50 to 600 feet. The annual rainfall amounts to 12 to 20 inches. The mean annual soil temperature is 74° F. Alae soils are geographically associated with Ewa, Pulehu, and Waiakoa soils.

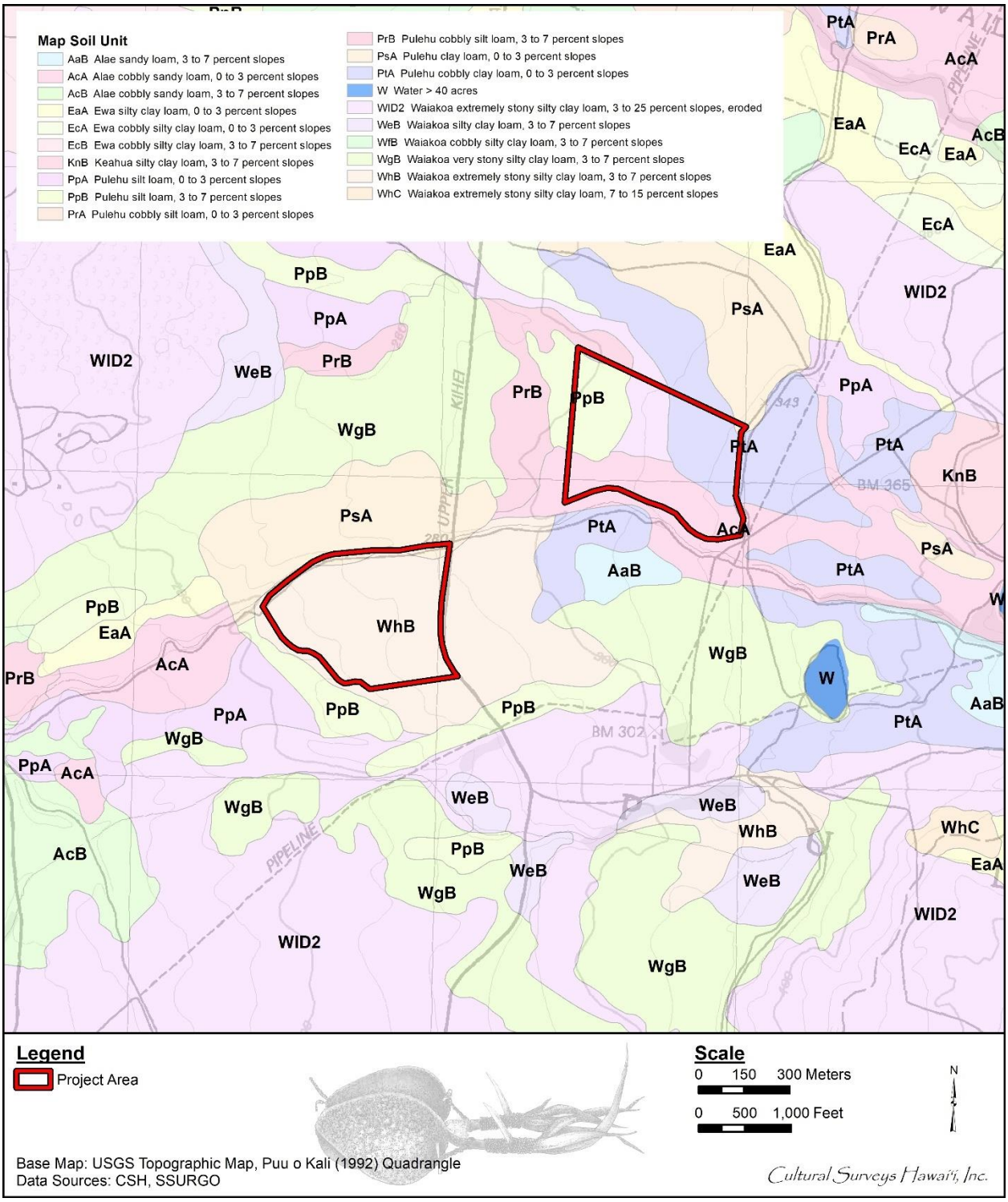


Figure 5. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001)

> These soils are used for sugarcane and pasture. Small areas are used for truck crops. The natural vegetation is feather fingergrass, kiawe, and uhaloa.(Foote et al. 1972:14)

Pulehu Series soils are described as:

> This series consists of well-drained soils on alluvial fans and stream terraces and in basins. These soils occur on the islands of Lanai, Maui, Molokai, and Oahu. They developed in alluvium washed from basic igneous rock. The soils are nearly level to moderately sloping. Elevations range from nearly sea level to 300 feet. The annual rainfall amounts to 10 to 35 inches. The mean annual soil temperature is 74° F. Pulehu sops are geographically associated with Ewa, Jaucas, Kealia, Lualualei, Waialua, and Mala soils.
>
> These soils are used for sugarcane, truck crops, pasture, homesites, and wildlife habitat. The natural vegetation consists of bermudagrass, bristly foxtail, fingergrass, kiawe, klu, lantana, koa haole, and sandbur. (Foote et al. 1972:115)

Waiakoa Series soils are described as:

> This series consists of well-drained soils on uplands on the island of Maui. These soils developed in material weathered from basic igneous rock. The upper part of the profile is influenced by volcanic ash. These soils are gently sloping to moderately steep. Elevations range from 100 to 1,000 feet. The annual rainfall amounts to 12 to 20 inches; most of it occurs in winter. The mean annual soil temperature is 74° F. Waiakoa soils are geographically associated with Keahua and Keawakapu soils.
>
> These soils are used for sugarcane, pasture, homesites, and wildlife habitat. The natural vegetation consists of buffelgrass, feather fingergrass, ilima, kiawe, uhaloa, and zinnia. (Foote et al. 1972:126)

1.3.2 Built Environment

The quarry site includes infrastructure and equipment that is used to quarry, transport, refine, and store quarry products. Infrastructure includes crushing equipment, conveyors, office and maintenance buildings, and storage buildings. The surrounding area includes fallow sugarcane fields that have remained uncultivated since the closing of commercial sugar cultivation in Central Maui in 2016. The Puunene Armory and Maui Raceway Park are located west of the project area.

Section 2 Background Research

2.1 Traditional and Historical Background

The division of Maui's lands into political districts occurred during the rule of Kaka‘alaneo, under the direction of his *kahuna* (chief), Kalaiha‘ōhi‘a (Beckwith 1970:383). This division resulted in twelve districts, or *moku*, during traditional times: Kula, Honua‘ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko‘olau, Hāmākua Loa, Hāmākua Poko, Wailuku, Kā‘anapali, and Lāhainā. The current project area is located on the western flank of Haleakalā in the *moku* of Kula and *ahupua‘a* of Pūlehu Nui. Overall, Pūlehu Nui Ahupua‘a begins at Kilohana Peak, on the summit ridge of Haleakalā, and ends at a mid-point on the west shore of the central plains at a shared boundary with Waikapū Ahupua‘a, encompassing a total area of 16,687.78 acres (McCully 1879).

2.1.1 Mo‘olelo and Traditional Accounts

While the mythological and traditional accounts of the area are relatively scarce, an analysis of the *wahi pana* (place names/sacred sites) meanings for the region may yield some insight into the patterns of life in the area prior to Western contact (Table 1). In *Native Planters in Old Hawaii,* E. S. C. Handy et al. (1991:23-24,42) summarizes the relationship that traditional Hawaiians have had with the natural environment best in the following passage:

> The sky, sea, and earth, and all in and on them are alive with meaning indelibly impressed upon every fiber of the unconscious as well as the conscious psyche. Hawaiian poetry and folklore reveal this intimate rapport with the elements (Handy et al. 1991:23-24)
>
> (T)he relationship which existed from very early times between the Hawaiian people … is abundantly exemplified in traditional mele (songs), in pule (prayer chants), and in genealogical records which associate the ancestors, primordial and more recent, with their individual homelands, celebrating always the outstanding qualities and features of those lands. (Handy et al. 1991:42)

The provided place names, together with the environmental data, suggest that the lands of coastal Pūlehu Nui were rich in marine resources. Previous research on pre-Contact occupation in Kula District (Kolb et al. 1997) has suggested that most permanent habitations were in the uplands with a smaller permanent population located along the coastline. While a reconstruction of the coastal archaeological landscape of Kula Moku underscores the importance of the uplands as a focus of agriculture and habitation, Hawaiian traditions and the presence of four fishponds are evidence that the coastal environs were also a focus of settlement and marine resource collection.

Lands surrounding the current project area were also a site of conflict between the Hawai‘i Island chief Kalani‘ōpu‘u and Maui Island chief Kahekili and is perhaps an explanation for the origins for such place names as "Waiakoa" and "Keāhuaiwi".

Table 1. Place names documented in the vicinity of the project area (from Pukui et al. (1974) unless otherwise noted)

Place Name	Meaning/Translation
Alakoa	*Lit.*, “soldier’s street” (p. 9)
Kalaepohaku	*Lit.*, “the stony promontory” (p. 72-73)
Kale‘ia	*Lit.*, “the abundance”, possibly in reference to the resources available from the fishponds and offshore fishing grounds (p. 76)
Kalepolepo	*Lit.*, “the dirt” (p. 77)
Ka‘ōpala	*Lit.*, “the rubbish”; dividing line between Pūlehu Nui and Waikapū Ahupua‘a (p. 86)
Keāhuaiwi	*Lit.*, “the bone pile”; the name of a gulch immediately adjacent to and north of Waiakoa Gulch (p. 101)
Keālia	*Lit.*, “salt encrustation”; a pond near Kīhei and major salt pan location (Sterling 1998:95)
Kīhei	*Lit.*, “cape or cloak”; sandy point and boundary marker between Pūlehu Nui and Waikapu (Sterling 1998:255); commonly used place name for the South Maui area
Kīheipūko‘a	*kīhei* literally translates as “cape or cloak” and *pūko‘a* literally translates as “coral head”; Kīheipūko‘a was a place near Keālia between Kalepolepo and Ma‘alaea (Sterling 1998:257)
Kohemālamalama	*Lit.*, “bright vagina”; also the ancient name for Kaho‘olawe
Kō‘ie‘ie	*Lit.*, “a plaything for floating in the rapids”, ancient name of Kalepolepo (Sterling 1998:252)
Kolaloa	*Lit.*, “much sexual excitement”, the name of the gulch that bisects the project area
Kula (*moku*)	*Lit.*, "plain"; always an arid region (Handy in Sterling 1998:242)
Pūlehu (gulch) Pūlehu Nui (*ahupua‘a*)	*Lit.*, “broiled”, possibly in reference to abundant sweet potato cultivation in the uplands (p. 193) “large *pūlehu*”
Waiakoa	*Lit.*, “water (used) by warrior”; the name of the gulch of the project area (p. 220)

The earliest account concerning Kīhei and Hawaiian politics is given by Samuel Kamakau (1961:70) during the time of Alapa‘i and Kekaulike:

> Alapa‘i sailed from Kohala on Hawai‘i...But when he landed at Mokulau in Kaupō (Maui) and heard that Ke-kau-like was dying, he gave up all thought of war and wished only to meet Ke-kau-like and his (half) sister Ke-ku‘i-apo-iwa-nui...He landed at Kīheipukoa with all his chiefs and fighting men...While he was at Kīhei, Alapa‘i heard that the ruling chief of Oahu was making war upon Molokai. Most of the chiefs of Molokai...were of Hawai‘i...Alapa‘i's sympathy was aroused, for these were his own brothers and children (relatives), and he made ready to go to their help on Molokai. (Kamakau 1961:70)

Other accounts involve the continuing conflict between Kahekili of Maui Island and Kalani‘ōpu‘u of Hawai‘i Island during the late 18th century. Following a losing battle at Kaupō in 1775, Kalani‘ōpu‘u dedicated several war heiau on Hawai‘i Island to aid in the defeat of Kahekili. Upon hearing this news Kahekili sent for the kahuna (priest) Kaleopu‘upu‘u who directed construction of the *heiau* of Kaluli and Pu‘uohala on the north side of Wailuku.

In 1776, the army of Kalani‘ōpu‘u landed at Keoneo‘o‘io, with their war canoes extending to Makena at Honua‘ula and proceeded to ravage the countryside. Kalani‘ōpu‘u landed with additional forces at Kīhepuko‘a at Kealia to Kapa‘ahu, 800 strong and eager to drink the waters of Wailuku:

> Across the plains of Pu‘u‘ainako (Can-trash-hill) and Kama‘oma‘o shone the feather cloaks of the soldiers … Ka-hekili was at Kalanihale just below Kihahale and above the plateau of Ka‘ilipoe at Pohakuaokahi … Kaleopu‘upu‘u [said] to Ka-hekili, “The fish have entered the sluice; draw in the net.” (Kamakau 1961:85)

The forces of Kahekili descended upon and destroyed the soldiers of Kalani‘ōpu‘u, slaying the Alapa (elite soldiers of Kalani‘ōpu‘u) on the sandhills at the southeast of Kalua. Only two men escaped to Kīheipuko‘a to tell Kalani‘ōpu‘u the news of their defeat. After a second day of warfare Kalani‘ōpu‘u sued for peace and was granted such by Kahekili and his messengers at Kīheipuko‘a (Kamakau 1961:88-89).

Coastal Pūlehu Nui also shows a few vestiges of the lifestyles and subsistence activities of the *maka‘āinana* (commoner) that lived there as well as the works of powerful *ali‘i*. Keālia Pond has been known as a source of high-quality salt from the pans in its immediate vicinity. In *Ancient Sites of Maui, Moloka‘i, and Lana‘i,* author Van James (2002:71) states, in reference to Keālia Pond:

> It is also the name and site of a former fishpond. Little is known about the ancient history of Keālia fishpond, but judging from its size, it must have been an important producer of fish stock, particularly *awa* (milkfish) and *‘ama‘ama* (mullet). Ditches and sluice gates were built at least 400 years ago to let these and other nearshore fish into the pond. A *ko‘a* (fishing shrine) or possible *heiau* platform stands near the site. (James 2002:71)

Given its location on the leeward shores of the central isthmus of Maui, and its regular access to the freshwater runoff emanating from Waikapū Stream to the north and Kolaloa Gulch to the southeast, the area had access to many resources (salt, fish, irrigation, etc.) valued and utilized by

the population. This wetland environment also attracts many species of waterfowl in the winter months when water levels in the pond rise with seasonal flooding. These would have also served as a potential source of nourishment for subsistence communities in the region (James 2002:72).

Further testament of resource gathering in the area comes from neighboring Kō‘ie‘ie Fishpond (Figure 6) which can still be seen along the Kīhei coastline. This fishpond was once part of a broader distribution of these types of structures along the coast. To this effect James (2002:73,74) states:

> In ancient times at least three or four *kuapā* (walled) fishponds were built along the Kīhei (“cloak”) coastline. With the exception of Ko‘ie‘ie pond, the names of the other ponds have been lost, and little is known about any of their histories. In such cases it was said that *Menehune* constructed them.
>
> It [Kō‘ie‘ie] is a small pond of three arces. At low tide, another fishpond ruin can be seen just south of Kō‘ie‘ie Fishpond, and still further south along the coast is yet another nameless ancient pond wall. (James 2002:73,74)

The associations of these fishponds to the *menehune*, placing their times of construction in deep antiquity, suggest that this site may have been in use in very early times. What is known regarding the fishponds here is that they had been rebuilt several times prior to, and during the first days of, Western contact. To this effect (James 2002:73-74) documents that:

> It is here at Kalepolepo that Kamehameha I is said to have beached his canoes for battle against Central Maui. The beaches were black with his fleet, and the Waikapū Stream that empties into nearby Keālia Pond was declared *kapu*. Later, Kamehameha, who noticed Kō‘ie‘ie to be in disrepair, had the fishpond rebuilt. It is recorded that chief ‘Umilīloa, in the mid-1500s, also had the pond walls rebuilt. (James 2002:73-74)

Given its history of rehabilitation from conquering Hawai‘i Island chiefs, it is believed that the fishpond at Kō‘ie‘ie was “a royal pond always stocked with the best fish” (James 2002:74). Further associations between Hawaiian royalty and Kō‘ie‘ie Fishpond are also exemplified by a story from the early historic period when Kihawahine, the family *‘aumakua* of the Kamehameha line of chiefs, appeared at Kō‘ie‘ie Fishpond in saffron-yellow robes following the death of one of Kamehameha’s sons at Kalepolepo in 1815 (James 2002:74).

2.1.2 Early Historic Period

Kīhei was one of the locations visited by Captain George Vancouver. A monument at Mai Poina ‘Oe Ia‘u Beach Park in Kīhei commemorates Vancouver’s onshore expedition in 1792, when he first met the ruling chief Kahekili. With its sheltered coastline and easy access to upcountry resources over a vast slope, Kīhei would continue to be a common stop for visiting ships.

During the early and middle 1800s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease; and nucleation around the developing port towns. The traditionally Hawaiian population was largely dispersed and, although there were royal centers and areas of more concentrated population, these areas never came close to rivaling the populations of the historic port towns that developed on Hawai‘i’s shorelines during the 1800s.



Figure 6. Ko‘ie‘ie Fishpond as viewed from the shore, near former site of Kalepolepo (James 2002:73)

In this regard, Kuykendall (1938) notes that in the period from 1830 to 1854:

> The commercial development during this period, by magnifying the importance of a few ports, gave momentum and direction to a townward drift of population; the population of the kingdom as a whole was steadily going down, but the population of Honolulu, Lahaina and Hilo was growing. (Kuykendall 1938:313)

Kuykendall's observation likely captures the demographic pattern at the Kalepolepo entrepot, a hub of early historic activity for Kīhei and eventually all of Kula Moku, located approximately one mile to the south of the current project area (Kolb et al. 1997:69). The development of Kalepolepo as an entrepot and a focus of Christian life in the 1840s and 1850s most likely increased the population in the immediate vicinity above the pre-Contact population figures, contrary to the island-wide trend of depopulation. That the population and areal extent of the Kalepolepo community reached its zenith during the mid-1800s, appears to be supported by Kolb et al. (1997:68):

> The ancient village of Kalepolepo was relatively small, and was built around an economy primarily based upon the exploitation of ocean resources--primarily the excellent fishing grounds as well as three large fishponds. However, as the number of visiting ships increased, Kalepolepo soon became an important provisioning area. By 1850 we know that the economic opportunities were attracting a number of European entrepreneurs. (Kolb et al. 1997:68)

In 1820 the whaling industry was introduced in Hawai‘i. Although the whaling trade centered on Lāhainā, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that "From the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei]." The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs and in particular the long-lasting Irish potato.

After 1830, dryland agriculture in the old Kula District expanded with a focus on Irish potato cultivation. The California Gold Rush of 1849 further intensified the demand as a California-Hawai‘i potato trade began to flourish. Kula became the area of highest potato production and was known as "the potato district" (the area between 2000 and 5000 ft. elevation). During this time, sugar cultivation and ranching were established in the Kula region. According to Helen Wong Smith, sugar was present prior to 1846, with six sugar producers operating on the slopes of Haleakalā, and ranching occurred in the area prior to the 1840s (Brown and Haun 1989:C-7 and C-6). Much of the produce, sugar, and livestock moved down the Kalepolepo and Kekuawaha‘ula‘ula Trails to the landing at Kalepolepo, just south of the project area. (Donham 1992:5) notes that the inundation of land clearing and cultivation associated with the Gold Rush resulted in "deforestation [which] adversely affect[ed] the amount of rainfall in the district, and periods of drought became more common."

Around 1849 John Halstead built the Koa House at Kalepolepo in Kīhei. The building, part store and part residence, thrived on both the trade of the whaling industry and the then thriving potato industry. During the Gold Rush years, the store became "an emporium for Irish potatoes" and served as a gathering place for the whaling sailors (Burgett and Spear 1995:6). David Malo created a balance for the boisterous whaling crowd by constructing the Kilolani Church at Kalepolepo around 1852. Potato production thrived in Kula from 1830-1850 until successful potato cultivation and production in California and Oregon resulted in a decline in the Hawai‘i

trade (Burgett and Spear 1995:6-7). Halstead ran his store until 1876, closing shop when the potato industry diminished (Janion 1977:25-31).

2.1.3 The Māhele and the Kuleana Act

The most significant change in land-use patterns and allocation came with the Māhele of 1848 and the privatization of land in Hawai‘i. This action hastened the shift of the Hawaiian economy from that of a subsistence-based economy to that of a market-based economy. During the Māhele, all of the lands in the Kingdom of Hawai‘i were divided between *mō‘ī* (king), *ali‘i* (chief), *konohiki* (overseer of an *ahupua‘a*), and *maka‘āinana* (tenants of the land) and passed into the Western land tenure model of private ownership. On 8 March 1848, Kauikeaouli (Kamehameha III) further divided his personal holdings into lands he would retain as private holdings and parcels he would give to the government. This act paved the way for government land sales to foreigners, and in 1850 the legislature granted resident aliens the right to acquire fee simple land rights (Moffat and Fitzpatrick 1995:41-51).

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay in cash an amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent was issued that gave full title of ownership to the tenant. But by 1850, the government of Hawaii was offering land for sale to both Native Hawaiians and foreigners. Such lands were referred to as Royal Patent Grants or as Grants.

A total of 13 land commission claims were made in Pūlehu Nui, and nine were awarded (LCAs 0327B, 9671, 9019, 4672, 9672, 9673, 8866, 4567, and 5230). Only one of these awards, LCA 5230, is immediately surrounding and inclusive of the current project area (Figure 7 and Figure 8). Supporting testimony given to the land commissioners indicate that the 1668.78 acres of LCA 5230 were awarded to Keaweamahi by the King in 1843 and never disputed. The testimony given by Kaauwai and Kaiakekaua additionally maintained that there were a great many natives that lived within the *ahupua‘a* of Pūlehu Nui. The majority of the lands awarded were *kula* used for potato (both sweet potato and Irish potato) cultivation and were primarily located along the upper elevations of Kula Moku (Waihona ‘Aina 2000).

In 1879, following the initial division of lands during the Māhele, the western boundary of Pūlehu Nui was disputed by the owners of adjacent lands in Waikapū. The western boundary of Pūlehu Nui that was specified by the Commissioner of Boundaries and surveyed included approximately 2,000 feet along the coastline from a sand spit known as Kīhei to a point of rocks called Kalaepōhaku. The eastern boundary line that was being claimed for Waikapū, however, would cut Pūlehu Nui off from the ocean, this being the more specific issue in the boundary dispute. Testimony was given by *kama‘aina* (Native Hawaiian residents) of Pūlehu Nui and/or lands next to it regarding their familiarity with the boundaries of Pūlehu Nui Ahupua‘a. All witnesses, with the exception of one, consistently stated the line between Pūlehu Nui and Omaopio was along a ravine or *kahawai*. The line carried along this *kahawai* and continued to follow the same natural boundary to Ka‘opala at the bottom of the East Maui slope. Ka‘opala meets the bottom of the West Maui slope and creates a depression and this is where the boundary turns course, following the natural depression or shallow *kahawai* to the sea. The court agreed that the boundary likely followed this natural line and concurred with the findings of the Commissioner of

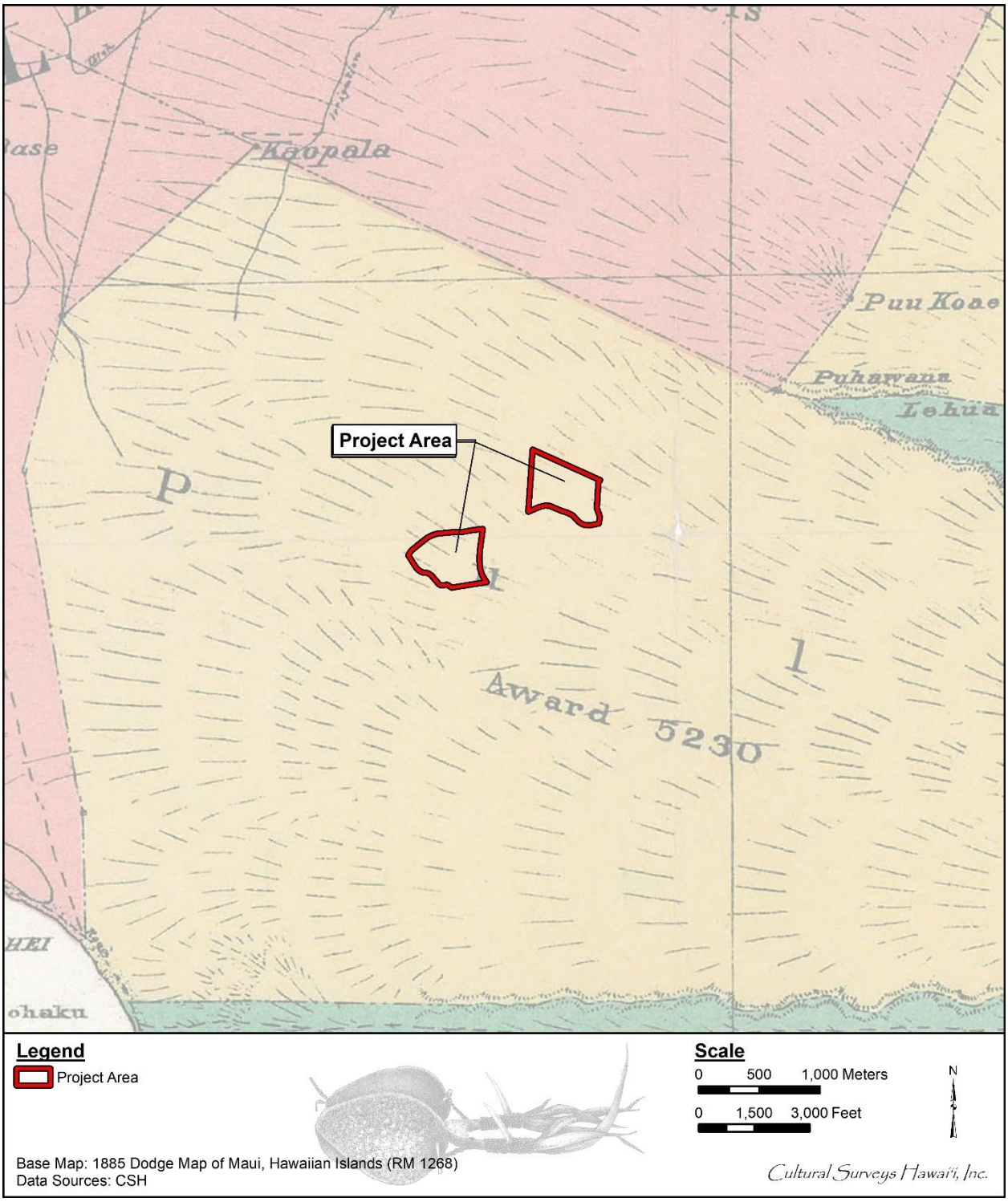


Figure 7. Portion of the 1885 Dodge map of Maui (RM 1268) showing the location of the project area within Award 5230 (Dodge 1885)

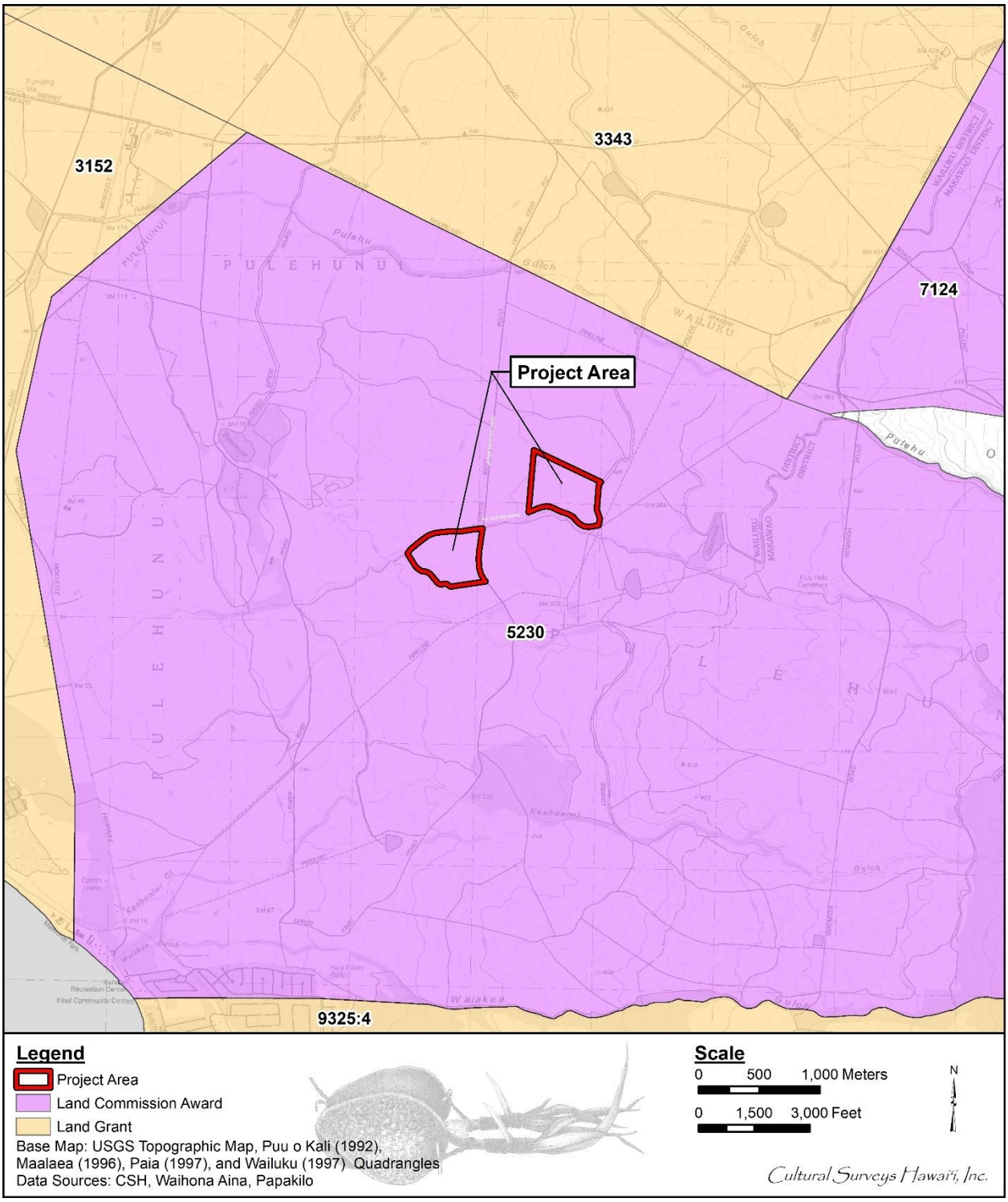


Figure 8. USGS topographic quadrangle map with an overlay of Land Commission Awards and Land Grants recorded in the vicinity of the project area (U.S. Geological Survey 1992, 1996, 1997a, 1997b)

Boundaries. As a result, the original 2,000 feet of coastline from Kīhei to Kalaepohaku that was attributed to Pūlehu Nui Ahupua‘a was upheld. (McCully J Court Opinion, in Sterling 1998:254-257)

2.1.4 Late 1800s through Early 1900s

By the time John Halstead closed shop in 1876, the boom years of Kalepolepo had passed. By 1880 the government survey of the Kula area showed the demarcation of only a few LCAs and those who had received awards had replaced them with grants. Lower Kula consisted primarily of pastureland for ranching (Wong Smith in Donham 1992:B-6). Kennedy (1992:9) notes that at this time *kiawe* (*Prosopis pallida*) was imported to feed cattle and provide wood.

Regarding the settlement at Kalepolepo and the impact of the changes associated with the change to ranching on the general area known as Kīhei, Clark (1980:48) comments:

> Halstead finally closed his store in 1876, as demands for his goods had steadily decreased, and moved to Ulupalakua . . . By this time the once thriving Hawaiian village at Kalepolepo had been almost totally abandoned as well. The slopes of Haleakala had gradually become denuded of their forests and torrential rains had caused heavy soil runoffs into the Kalepolepo shoreline. Cattle had trampled down the brush and grassy fields, causing sand dunes to drift and fill up the pond. Clouds of dust filled the air instead of cooling winds. Except for a handful of fishing families, Kalepolepo [and likely the Kīhei area in general] was deserted (Clark 1980:48).

The shift in the economics of coastal Pūlehu Nui to ranching was also noted by E.S. Craighill Handy. He noted that large sections of “Crown Lands” which had not been claimed as *kuleana* [family homestead property] during the Māhele (1848 and later) were given by the Kingdom to various Pūlehu Nui ranchers. The *kiawe* tree was imported and cultivated around 1840 as a source of cattle feed, and the low plains of Pulehu Nui were soon covered in *kiawe* forests (Handy and Handy 1972:510-511). In this manner, upland agricultural pursuits gradually gave way to ranching activities as the demand for locally produced agriculture dropped with the closure of the nearby entrepot at Kalepolepo.

Sugar would soon fill the void, and in late 1898 the Kīhei Plantation Company, Ltd (KPC) was organized with a capitalization of 60,000 shares at $50 par value. Water was the most critical component in the decision to locate sugar cultivation along the leeward shores of Maui’s arid coastline. The discovery of an ample supply of irrigation water early in 1898 led to the drilling of a large, successful well, but the supply of water was limited (Stearns and Macdonald 1942). Over the next four years, two ditches were developed to supplement the water needs of the 4,873 acres of sugar under cultivation at Kīhei (Gilmore 1936).

The history of the Kīhei Plantation Company begins with the annexation of the Hawaiian Islands by the United States in 1898. Sugar prices were rising due to the outbreak of war between the United States and Spain over the colonies in Cuba, Puerto Rico and the Philippines. Henry P. Baldwin, of the Maui plantation of HC&S, entered into a partnership with O‘ahu businessman Benjamin F. Dillingham to convert Lorrin A. Thurston’s landholdings in Kīhei into a sugar enterprise (Dean 1950:62).

Up to that time, sugar cultivation within the central isthmus of Maui was centered around the main towns of Wailuku and Kahului. Water tunneled from springs in the West Maui Mountains flowed through ditches in Wailuku to irrigate fields as far away as Mā‘alaea. Water from the windward rain belt of Kailua ran through a network of ditches from East Maui to Pā‘ia, to irrigate fields in Pu‘unēnē (Wilcox 1996).

The McCandless Brothers drilled a successful Maui-Type well (U.S.Geological Survey Well 14 / Hawaiian Commercial & Sugar Well K1) in 1899. It was located just inland from the coast in North Kīhei, between Keālia Pond and the Waiakoa Homestead Lands. This well was drilled vertically to approximately 60 feet through the Honomanū basalts, and tunneled laterally over 1,500 feet in order to skim 10 million gallons of fresh irrigation water per day from sources beneath the Kīhei plains (McCandless 1936).

The plantation company in Kīhei built bridges to span streams and gulches flowing through the company fields. The plantation had planned the construction of a mill in North Kīhei, and ordered a plant to be built. It was decided that the new HC&S mill under construction at Pu‘unēnē would have more than enough capacity to mill all the cane from the Kīhei fields. The order for the mill was transferred to the ‘Ōla‘a Sugar Company in Hawai‘i, in exchange for a supply of steel rails for new railway requirements at Pu‘unēnē. A large-scale Kona storm hit the plantation on November 15th, 1900, and caused immense damage to both Kīhei and the HC&S fields in Pu‘unēnē. Bridges were knocked out, buildings were flattened, and washouts filled irrigation ditches with silt. Repairs were effected immediately, with the new HC&S mill at Pu‘unēnē commencing operations January 29, 1902 (Dean 1950).

The Kihei Plantation Company had the McCandless Brothers drill two or three additional Maui-Type wells on the north side of reservoir K2 at the discharge end of the existing pipeline of Well 14. The plantation in Kīhei failed in 1908 before the well site was fully developed. It would have been named the HC&S K2 well, and would have included a large pumping station (Stearns and Macdonald 1942).

2.1.4.1 Railway Operations

The Kihei Plantation Company planned to construct a railway to move their cane. The sugar agency of William Dimond & Company placed an order for a locomotive from the Baldwin Locomotive Works in Philadelphia. The order was placed April 1899, and the plantation locomotive “Haleakala” was built and sent on to Maui (Condé and Best 1973).

By March of 1900, the first annual report of the Kihei Sugar Company stated, “It was our intention to complete the main [rail]road only as far as Camp #2, or for about 2 miles, but as the development of Camp #3 required pushing on of the road one and a half miles further, this has been done, having been completed the 15th of February” (Condé and Best 1973:230). An additional six miles of track connected the Kīhei wharf to the various well pumping stations, and north to meet up with HC&S track (Condé and Best 1973). Establishing the railroad at Kīhei made it possible to harvest and transport over two thousand tons of sugar in a single year (Figure 9) (Dean 1950).

The laying of the railroad and the cultivation of the sugar cane was performed primarily by Japanese field labor. Kīhei’s plantation Camp #1 was set up inland of the Kīhei wharf and mooring pier. Two stables and a plantation store were located at Camp #1. Hospital services were provided

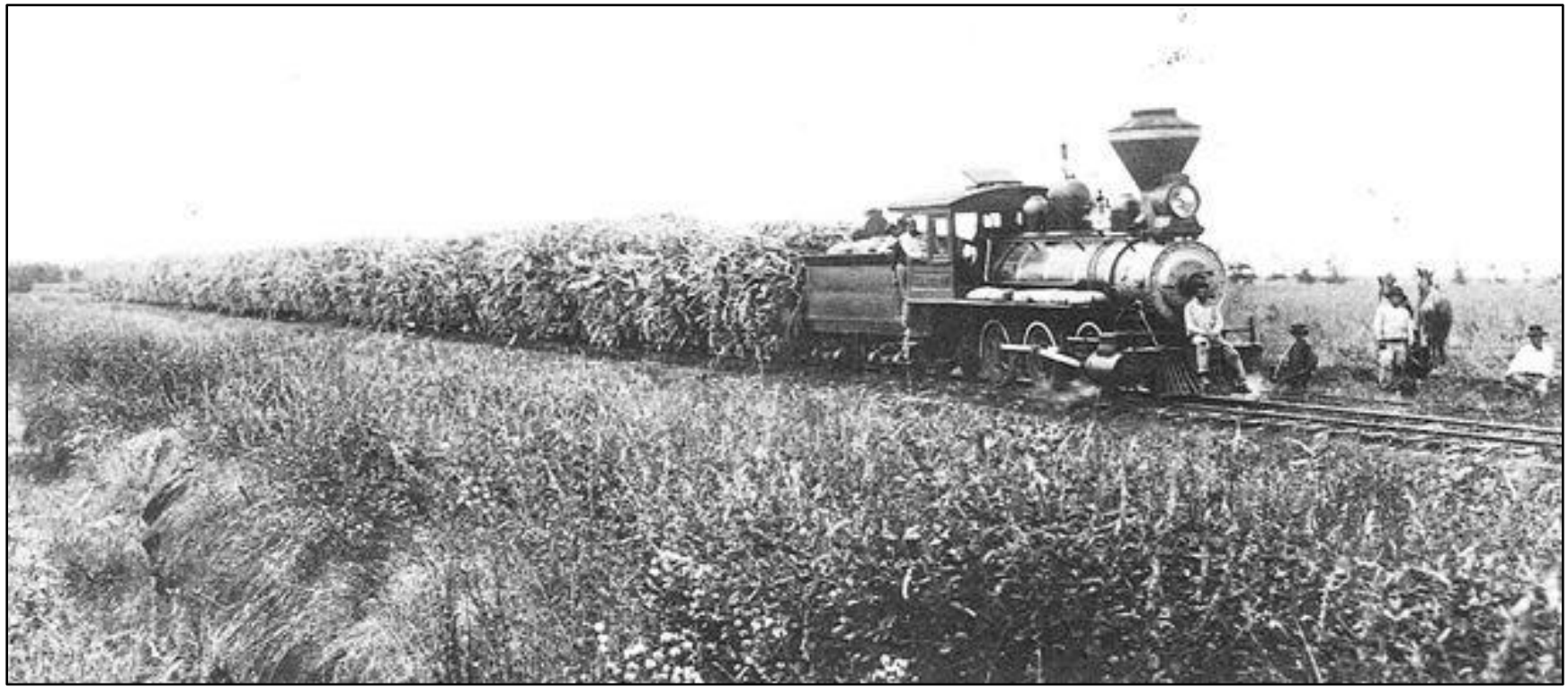


Figure 9. KPC locomotive “Haleakala” transporting cane from Kīhei fields to the mill at Pu‘unēnē, circa 1905 (Condé and Best 1973)

by HC&S in Pu‘unēnē. Kihei Camp #3 was located 2 ½ miles north of Kihei Camp 1 at Kolaloa Gulch, along the North Kīhei line of the HC&S railroad (Shoemaker 1907). A 1910 map of the HC&S planation in Pu‘unēnē depicts a portion of the field and rail network surrounding the project area (Figure 10). The “Upper Main R.R. Kihei” extended across Kolaloa Gulch between Increments 2 and 4 of the project area. A spur from this line extended through Increment 4 of the project area to the “K. No 4 Reservoir Ditch. Camp K-3, labeled as “Pump 3-K” is located adjacent to the project area along Makawao Road.

When the plantation was forced to close in 1908 due to diminished returns and underdeveloped water sourcing, the entirety of the company’s rolling stock was absorbed by a subsidiary of HC&S. This included a Baldwin 10-ton locomotive, two large flat cars, and approximately 235 cane cars. After this merger the rolling stock of the KPC was absorbed into the larger system that connected Kahului and Kihei to plantations further east of the central isthmus. After acquiring the locomotive, the name was changed from “Haleakala” to “Hawaiian Commercial & Sugar #4,” becoming renamed again in 1910 as “Kihei” (Figure 11) (Condé and Best 1973:230-231).

2.1.4.2 Water Source Development

The Lowrie Ditch project, named for former HC&S manager William J. Lowrie, brought an additional source of water to the Kīhei plains. His plan was to begin the ditch at the Pāpa‘a‘ea Reservoir, at the 1,000 ft. elevation, and maintain a four-foot drop per mile following the ditch’s initial plunge from the Kailua reservoir. Steep mountain gulches were traversed using the force of the constant weight of water flowing in a series of siphons. The Halehaku Gulch, at 250 feet deep, and the Māliko Gulch, at over 350 feet deep, were both crossed by giant siphons fabricated of three-eighths-inch iron, and set in place by Japanese laborers. At a weir located above Pā‘ia, the allocation of water began. The first tenth of the water flow in the Lowrie Ditch was divided out to the Pā‘ia Plantation (an 11/20ths share) and the Haikū Plantation (a 9/20ths share). The distance traveled, from Kailua to the plantation’s Kīhei boundary, was 21.9 miles (Thrum 1900).

More water was required from wells and the East Maui watershed. The manager for the Kihei Plantation Company, W.F. Pogue, asked the management of HC&S for an even larger allocation of water for the Kīhei lands. In 1901, Samuel T. Alexander ordered the construction of a new ditch, tapping the water sources from Nāhiku to Honomanū. It was determined that the Kihei Plantation Company would receive 2/9ths of the capacity from the enterprise (Figure 12) (Dean 1950).

The Kihei Plantation Company failed to live up to the expectations of its promoters with an inadequate water supply as the key difficulty. With the waters of the Ko‘olau Ditch flowing to the Kīhei fields, production appeared to have hit its peak. Although 5,609 tons of sugar was delivered in 1903, high costs required a change of managers in Kīhei, and a reduction of the HC&S milling charge to $7 per ton. The incoming HC&S manager, Frank Fowler Baldwin, determined that the best course of action was to buy out the company for $375,000 (Condé and Best 1973).

In 1908, the lands of the Kihei Plantation Company were divided up between five new major business entities of HC&S; the Kailua Plantation Company (994 acres), the Kalialinui Plantation Company (923 acres), the Kula Plantation Company (996 acres), the Makawao Plantation Company (982 acres), and the Pulehu Plantation Company (978 acres) acquired the remaining acreage not included in the railroad right-of-way. Water rights reverted to HC&S, and were reapportioned between the new plantations (Dean 1950). Sugar operations continued in North Kīhei until circa 1968, when HC&S leased lands to a corn research farm.

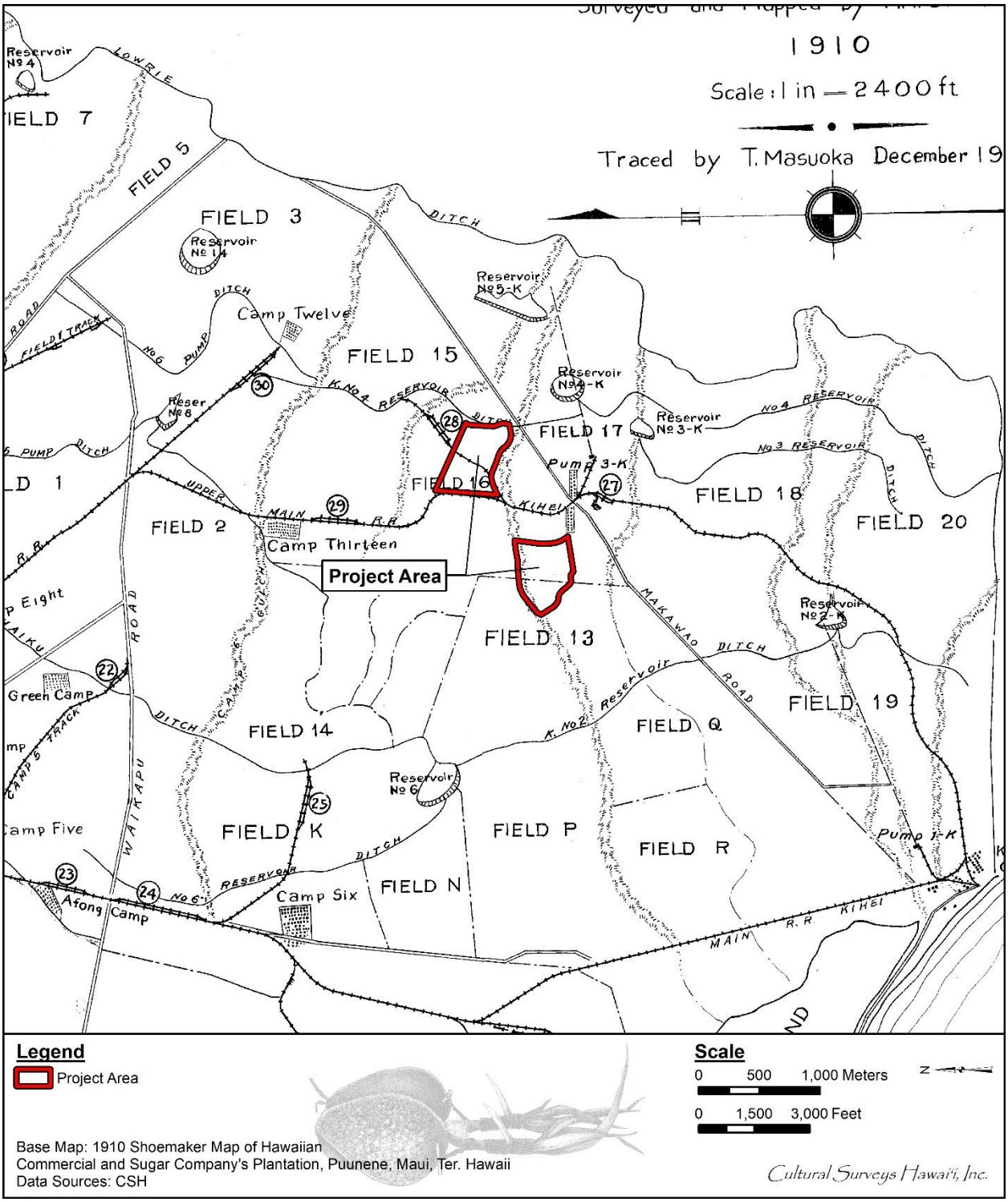
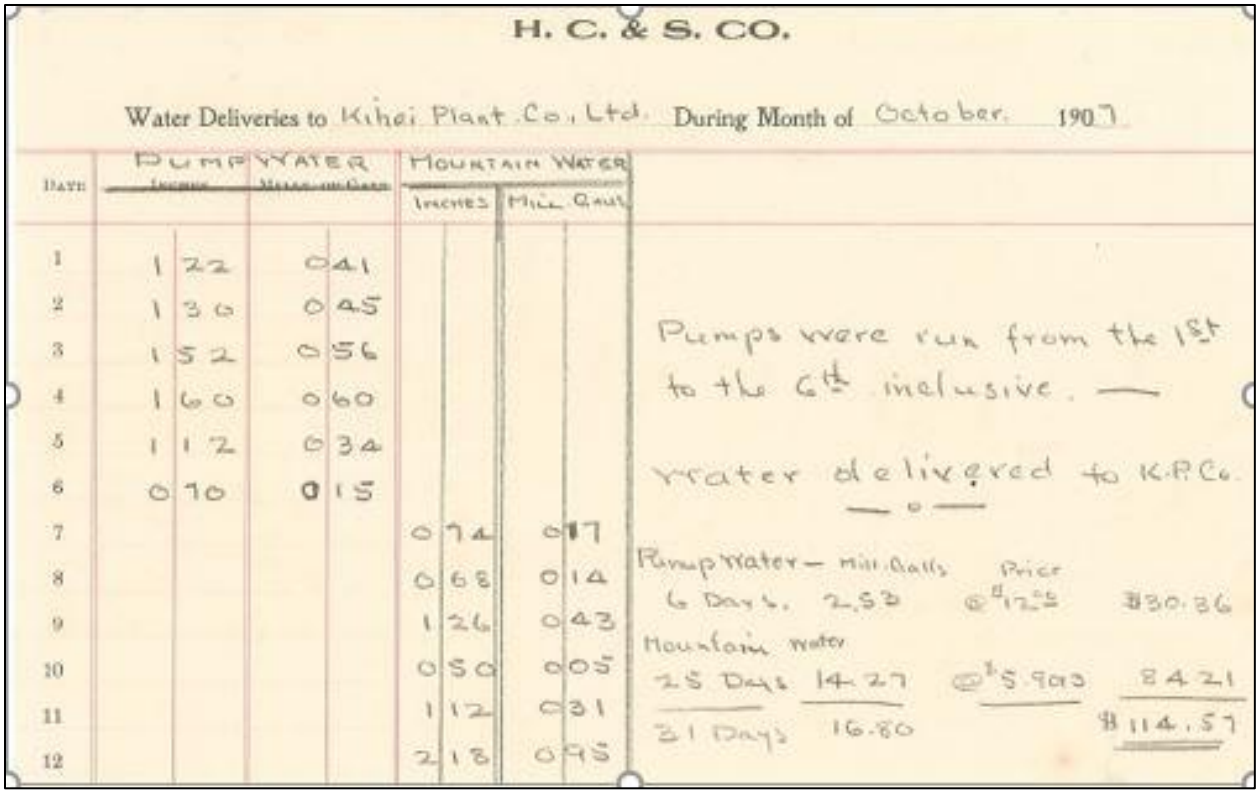


Figure 10. Portion of the 1910 Shoemaker map of the HC&S Plantation in Pu‘unēnē showing the current project area (Shoemaker 1910)



Figure 11. KPC locomotive servicing HC&S mill as “Hawaii Commercial & Sugar No. 4” (Condé and Best 1973:231)



H. C. & S. CO.

Water Deliveries to Kihei Plant Co., Ltd. During Month of October. 1907

Date	Pump Water Inches	Pump Water Mill. Gals.	Mountain Water Inches	Mountain Water Mill. Gals.
1	1 22	041		
2	1 30	045		
3	1 52	056		
4	1 60	060		
5	1 12	034		
6	0 70	015		
7			074	017
8			068	014
9			126	043
10			050	005
11			112	031
12			218	095

Pumps were run from the 1st to the 6th inclusive. —

Water delivered to K.P.Co.

— o —

Pump water — mill. Gallons Price

6 Days. 2.53 @ $12.25 $30.36

Mountain water

25 Days 14.27 @ $5.903 84.21

31 Days 16.80 $114.57

Figure 12. Portion of an accounting statement for water delivered to the Kihei Plantation Company in 1907 (CSH archives)

2.1.5 Early 1900s to Mid-1900s

The post-WWI years saw HC&S add electricity to some villages. HC&S completed the Waikapū well [Well 7] in 1926 - one of the largest deep wells in the world. The additional capacity of 40 million gallons per day (mgd) was instrumental in planning for more sugar and industry within Maui's central plains. On November 11, 1929, Inter-Island Airways, Ltd. began flying regularly scheduled flights between the Hawaiian Islands. Amphibious eight-passenger Sikorsky S-38 aircraft landed at Mā‘alaea Bay, taxied up a concrete ramp, and delivered passengers to waiting automobiles for the trip to Wailuku and points beyond (Saito 2008). By 1936, the airline had purchased three new sixteen-passenger Sikorsky S-43 aircraft to supplement their four S-38's (Kennedy 1937).

Harold T. Stearns traversed the island of Maui between 1932 and 1942, conducting studies of the geology and ground-water resources. Between 1939 and 1940, Gordon A. Macdonald completed geologic maps for the study. Their combined work highlighted the then-recent explorations for water in Pūlehu Nui as a source of drinking water and for dust control during construction of the airport (Stearns and MacDonald 1942). They reported that the isthmus of Maui "was without trees and covered with drifting sand prior to the planting of cane. Old residents report that red dust storms were nearly a daily occurrence. It seems possible that very little water existed under the Maui isthmus, prior to irrigation. If so, the annual pumpage of 45.500 million gallons (average over the past 10 years) represents mostly return flow from the 78.271 million gallons of surface water imported for irrigation. [This measurement establishes that] recovery from wells is about 58% of surface water deliveries."

2.1.5.1 Pre-WWII Aviation History

By 1937, the Civil Aviation Authority (C.A.A.) for the Territory of Hawai‘i recommended an airport for Pu‘unēnē to accommodate the continued growth of commercial service. The site was approved by the U. S. Army, Inter-Island Airways (later Hawaiian Airlines), HC&S, the Kahului Railroad Company, and the C.A.A. (Balch 1938). Three intersecting runways were designed alongside the existing government roadway and railway lines connecting Kīhei Village to the HC&S mill and village at Pu‘unēnē.

By 1938, it was clear that Japanese aggression against mainland China was jeopardizing the political stability of the Pacific region (Morison 1951). Pacific Naval Air Bases (P.N.A.B.) construction engineers were assigned to reinforce United States military outposts across the Pacific. In Hawai‘i, the construction of new civilian airports at Kane‘ohe (O‘ahu), and Pu‘unēnē (Maui) was undertaken by U.S. Engineer Department (U.S.E.D.) contractors. Prior to 1940, thirteen separate defense-related construction projects were begun in the Hawaiian Islands, primarily at Pearl Harbor (Woodbury 1946).

The Hepburn Board, a commission of six officers and engineers reporting to the United States Navy, authorized the immediate military-backed expansion of an existing design for a civilian airfield at Pu‘unēnē. Quarters for a permanent utility squadron, as well as for rotating Carrier Air Service Units (CASU) crews, were hastily approved (Woodbury 1946). U.S. Engineer Department and Pacific Naval Air Base construction crews began work on June 17, 1940, building quarters and messing facilities for 500 men. The Navy used barracks at the National Guard Camp in Paukūkalo while completing buildings at NAS Puunene (Shettle Jr. 1997).

Two 50,000-gallon above-ground gasoline tanks were erected, and railroad spurs were laid to facilitate a direct supply line with the Kahului Harbor. As work progressed, a slew of change orders added bombproof revetments for aircraft storage, as well as bomb and ammunition magazines. By the time Pearl Harbor on O‘ahu was attacked, Naval Air Station Puunene was an active training base (Navy 1947).

The location of Utility Squadron Three (VJ-3) at the Pu‘unēnē airfield was found to be ideal for operations involving the use of radio-controlled aircraft for anti-aircraft training. The development of radio-controlled full-scale aircraft was code-named “Project Dog,” and began as a military program located on the east coast of the United States in the mid 1930’s (Fahrney 1982). “Project Dog” was moved to San Diego in 1938, and finally to the Navy’s Maui Airport at Pu‘unēnē early in 1940, in order to prove the practicality of radio-controlled assault drones. These were the earliest experiments leading towards the development of the guided missile.

Full-scale fortification of the Hawaiian Islands began in January 1940, immediately after President Franklin D. Roosevelt cancelled all trade agreements with Japan. On May 7, 1940, the U.S. Pacific Fleet was ordered out of the Port of Los Angeles, to be based at Pearl Harbor in the Territory of Hawai‘i. This action was designed as a deterrent against further aggression by Japan in the Pacific region (Morison 1951).

Lieutenant Robert F. Jones commanded VJ-3 at NAS Puunene and advanced the syllabus of testing radio-controlled aircraft to the point where a radio-controlled aerial torpedo was thought to be possible. By April 1941, the Navy’s efforts to develop a practical way to control drone aircraft from greater distances was in full swing (Rogers II 2002). In the middle of this research program, Navy Fighting Squadron VF-2 arrived at the Pu‘unēnē aerodrome for training purposes in April 1941.

Flying F2A Brewster “Buffalo” fighter aircraft, the “Flying Chiefs” of VF-2 trained on Maui for approximately two months, returning to sea with the U.S.S. Lexington to take part in operations to ferry aircraft and supplies to Midway Island. The training regime of VF-2 included the use of “unrestricted air space for gunnery and tactics and many nearby bombing and strafing targets” (Lacouture 1989). The target range was located at lower ‘Ulupalakua and the aircraft used practice bombs filled with lime powder and beach sand to mark their accuracy.

In May 1941, the 1st Battalion of the Army’s 299th Infantry Regiment was assigned to establish defensive positions along the exposed coastal areas of Maui. Tents housing the administrative section for the Army’s 24th Infantry Division, and the Fourth Platoon Signal Company, Aircraft Warning Air Corps Detachment, were located within a 14-acre section at the Maui Airport at Pu‘unēnē (Allen 1950).

Plans were drawn up to expand the airfield to a size large enough to support both a Navy carrier air group and an Army Air Corps bombardment group. On average, pre-war U.S. Navy air groups consisted of 90 aircraft, made up of scout, dive-bomber, fighter, and torpedo divisions. A pre-WWII Army Air Corps bombardment group, consisting of three squadrons of medium or heavy bombers, would have numbered about 30 aircraft (Morison 1953).

2.1.5.2 World War II (1941-1945)

With the outbreak of war between Japan and the United States, NAS Puunene became the command headquarters for both Navy and Army units on the island of Maui. Plantation heavy

equipment and plantation operators worked side by side with U.S. Engineering Department personnel to accelerate construction of defensive positions and immediately lengthen runways at the base. The call for an immediate extension of the runways to military specifications involved extensive engineering to reroute miles of irrigation culverts for HC&S. The dispersion of facilities planned for NAS Puunene would come to utilize over 2,500 acres of land, and involve housing for over 5,000 men (Cotten 1945).

The attack on Pearl Harbor, December 7th, 1941, forced the "Project Dog" program at NAS Puunene to assign its research to safer bases on the mainland United States. Wartime operations for VJ-3 would concentrate exclusively on providing radio-controlled aircraft as realistic targets for fleet anti-aircraft gunnery training exercises (Rogers II 2002). Under wartime conditions, responsibilities for VJ-3 included maintaining an intense schedule of weather flights, rescue flights, and anti-submarine reconnaissance flights in the waters surrounding Maui.

Early in 1942, the first Carrier Air Service Unit, CASU-4, was commissioned at NAS Puunene, and the utility squadron personnel of VJ-3 were reinforced by Naval Air Station Officers. In June 1942, VF-72 (U.S. Navy Fighting Squadron 72), the first of over 150 squadrons of U.S. Navy fighter, bomber, and scout aircraft, arrived for advanced training prior to moving into forward combat areas (Wilcox 2004). For four days in early June 1942, as the Battle of Midway raged 600 miles to the northwest, NAS Puunene personnel were ordered into shelters and revetments, expecting bombing raids by Japanese aircraft sweeping across the Hawaiian archipelago (Vint 2000). With the success of American naval forces at Midway, the threat of a Japanese invasion of the Hawaiian Islands was postponed, and U.S. efforts to outfit military bases in the Hawaiian Islands for wartime training were redoubled.

Anti-aircraft gun emplacements and protective aircraft revetments were given top construction priority by the U.S. Pacific Naval Air Bases supervisors. Heavy equipment and civilian operators from Wailuku Sugar Company and Hawaiian Commercial & Sugar Company were employed at NAS Puunene, with their pay charged back to the U.S. government. Sugar milling at plantations across the Hawaiian Islands was confined to daylight hours until "blackout" procedures for night operations were approved (Allen 1950:289).

U.S. Engineering Department (U.S.E.D.) construction contractors were reinforced at NAS Puunene by additional Pacific Naval Air Bases (P.N.A.B.) personnel in July 1942. Domestic water pipelines were laid by HC&S to supply military camps being constructed at ten separate locations across the central Maui plains, including the Camp 6 location proximate to NAS Puunene. The main government road and the railroad lines that served the wharf at North Kīhei were rerouted, as NAS Puunene expanded. The U.S. Army National Guard 108th Regiment, 27th Infantry Division, took up defensive duties along Maui's coastlines beginning March, 1942, and occupied formal headquarters at NAS Puunene (Army 1948). On November 16, 1942, 400 men forming an advance echelon of the Navy's 39th Construction Battalion arrived at NAS Puunene, to begin construction of underground fuel bunkers, bombproof buildings, ammunition magazines and an aviation ground school (Cressy 1944).

The establishment in 1943 of NAS Puunene as a "Top Gun" school for fighter-aircraft tactics was based on the Navy's use of highly-decorated veteran fighter pilots, such as Commanders Edward "Butch" O'Hare, James "Jimmy" Flatley, and James "Jim" Thach to relay the latest intelligence from the front lines to new pilots rotating into combat (Feightner 1997). "Maui Group

Local Naval Defense Forces", based at NAS Puunene, controlled the training airspace over the Kaho‘olawe aerial bombing ranges, and administered the training schedule (Lundstrom and Ewing 1990). Army National Guard Divisions were assigned to occupation, guard, and training stations in the Hawaiian Islands during World War II. Shoreline defenses held by the 27th Infantry Division on Maui were replaced by men of the 40th Infantry Division (U.S. Army 1947). As elements of both the 27th and 40th Divisions were combined and sent to the South Pacific for combat duty, they were replaced on Maui by regiments from the 33rd Infantry Division (Journal 1948). A resident of Maui during WWII said, "It was common to see groups of soldiers wearing their unit insignias all over Maui: the "Sunshine" [40th Division], and "Golden Cross" [33rd Division], and the last ones stationed here were the "Mohawks" [98th Division]"(Sanford 2004).

As of March 6 1943, the 48th Construction Battalion ("SeaBees") replaced the 39th C.B., and immediately began construction of a new sewer and water system for NAS Puunene (Turner 1945). Newsletters published by the 39th Seabees (*Shore Lines*) and the 48th Seabees (*Trade Wind*) were joined by an official NAS Puunene newspaper, "To All Hands" (later renamed *The Island Breeze*). The publisher of the "Maui News," Maui's leading civilian newspaper, printed a companion weekly named "The Valley Islander," which incorporated military news from all of the services based on Maui, including the 4th Marine Division in Kokomo (Sanford 2008). All military news in these papers was censored, but personnel changes, "scuttlebutt" gossip columns, and sports highlights featuring teams organized within military leagues on Maui attracted an avid readership.

The 127th SeaBees relieved the 48th SeaBees in May of 1944, and finished an extensive network of ammunition magazines located toward Kīhei of the main air base. The completion of expanded housing areas, a second CASU area, and additional "SeaBees" housing was accomplished before the end of 1944. Two Mobile Construction Battalion Units, CBMU 563 and CBMU 575, arrived to maintain the refrigeration and water purification systems.

On July 1, 1945, NAS Puunene personnel numbered 565 officers and 2,798 enlisted men, including seven Navy nurses, eight WAVES (Women Accepted for Volunteer Emergency Service) officers, and 92 WAVES enlisted personnel (Monthly Station Report of On-Board Personnel, NAS Puunene, "Confidential," 1 July 1945). Total aircraft on board numbered 271 (Monthly Station Report of On-Board Aircraft, "Confidential," 1 June 1945). The total number of structures built numbered over 300 (Cotten 1945).

Immediately following the August 1945 surrender of Japan to the military forces of the United States, facilities essential to the operation of Naval Air Station Kahului began to be removed from Pu‘unēnē. The bowling alley, bakery, and other specialized structures at NAS Puunene were relocated to NAS Kahului, only to be partially or entirely destroyed by a series of tidal waves that struck NAS Kahului facilities April 1, 1946 (Priestman 1946).

During 1946, Mauians were allowed to rent residential structures in Housing Area "A", the area closest to the *pūnāwai* (Reservoir 6) known as "Airport Village". The cost was reportedly $36.00 per month (Cabos 2000). By 1947, the HC&S Company began to reclaim over 100 acres of former cane land for sugar cultivation in Parcels 2-B, 2-C, 2-F and Parcel 7 (Figure 13). During 1947, the use of the airstrip at Pu‘unēnē by civilians led some Mauians to believe that the site might be further expanded as a general aviation facility (Belknap 1947). But by the end of 1948, the site of the former Naval Air Station at Kahului had been chosen to replace the Pu‘unēnē site for all future civilian flight operations (Yoklavich et al. 1997).

By quitclaim deed dated December 31, 1948, the lands of the former air base were transferred from the United States back to the Territory of Hawai‘i. In 1950, the Maui News reported that plans to allow for subsistence farming and the raising of pigs on five to ten-acre plots on former NAS Puunene lands were proceeding (Maui News, 8-23-50 1:1) (Figure 14).

The remaining base facilities, most of which were wooden structures, had, by that time, been abandoned or demolished. In May, 1951, the operations of Hawaiian Airlines and Trans-Pacific Airlines (later Aloha Airlines) were moved to the new civilian airport at Kahului, which utilized the runways of the former Naval Air Station Kahului. Thereafter, the airfield at Pu‘unēnē was placed on “caretaker status”, and sugar cultivation reclaimed much of the land area formerly dedicated to the aerodrome (Figure 15).

2.1.6 Modern Land Use

Many changes occurred in Kīhei following the end of World War II in 1945. With the airfield abandoned, a *Maui News* article reported that Maui farmers had begun to raise alfalfa on some of the land at NAS Puunene (Young 1950). Shortly following statehood in 1959, the County of Maui established a network of Civil Defense fallout shelters across the county, as well as in the Pu‘unēnē airport area. Revetment and splinter shelters of the former air base were reorganized for civilian use and stocked with supplies of water, crackers and Geiger counters in the event of an atomic attack. In all, six separate shelters were established within the former boundaries of NAS Puunene, with a combined capacity estimated to accommodate 1,213 people (Figure 16).

Postwar aircraft enthusiasts used the abandoned runways 1-19 and 14-32 for general aviation operations until the early 1960’s, when all general (civilian) flight operations were transferred to the Kahului Airport. A short portion of runway 1-19 remained open to support the aerial chemical spraying operations of the HC&S Company. Sanctioned drag races began in 1963, when the Valley Isle Timing Association was organized to regulate drag racing on runway 14-32, at the former airfield. The Hawai‘i Army National Guard developed a 30-acre parcel of property within the former air base for use as an armory, which included facilities for helicopter and military vehicle maintenance (Helber et al. 1995).

By the mid-1970’s, sugar cultivation operations had demolished all but one of the main runways, and had retaken most of the land area (over 1,400 acres) previously given up for the original pre-war Maui Airport. A 1976 aerial photograph depicts the expanse of sugar cane growth within and surrounding the vicinity of the project area (Figure 17). Since the 1970s, these fields within the project area were further expanded into offshoot portions of Kolaloa Gulch (see Figure 3). The project area continued to be used for commercial sugarcane growth until the closing of HC&S production in 2016.

The Hawaiian Cement Puunene Quarry started in the late-1970s with 28 acres. The quarry was further expended in 1980 to 194 acres. The primary resource of the quarry is basalt that is crushed and used for road base course, concrete and pavement aggregate, railroad ballast, and many other purposes (Yanik 2018).

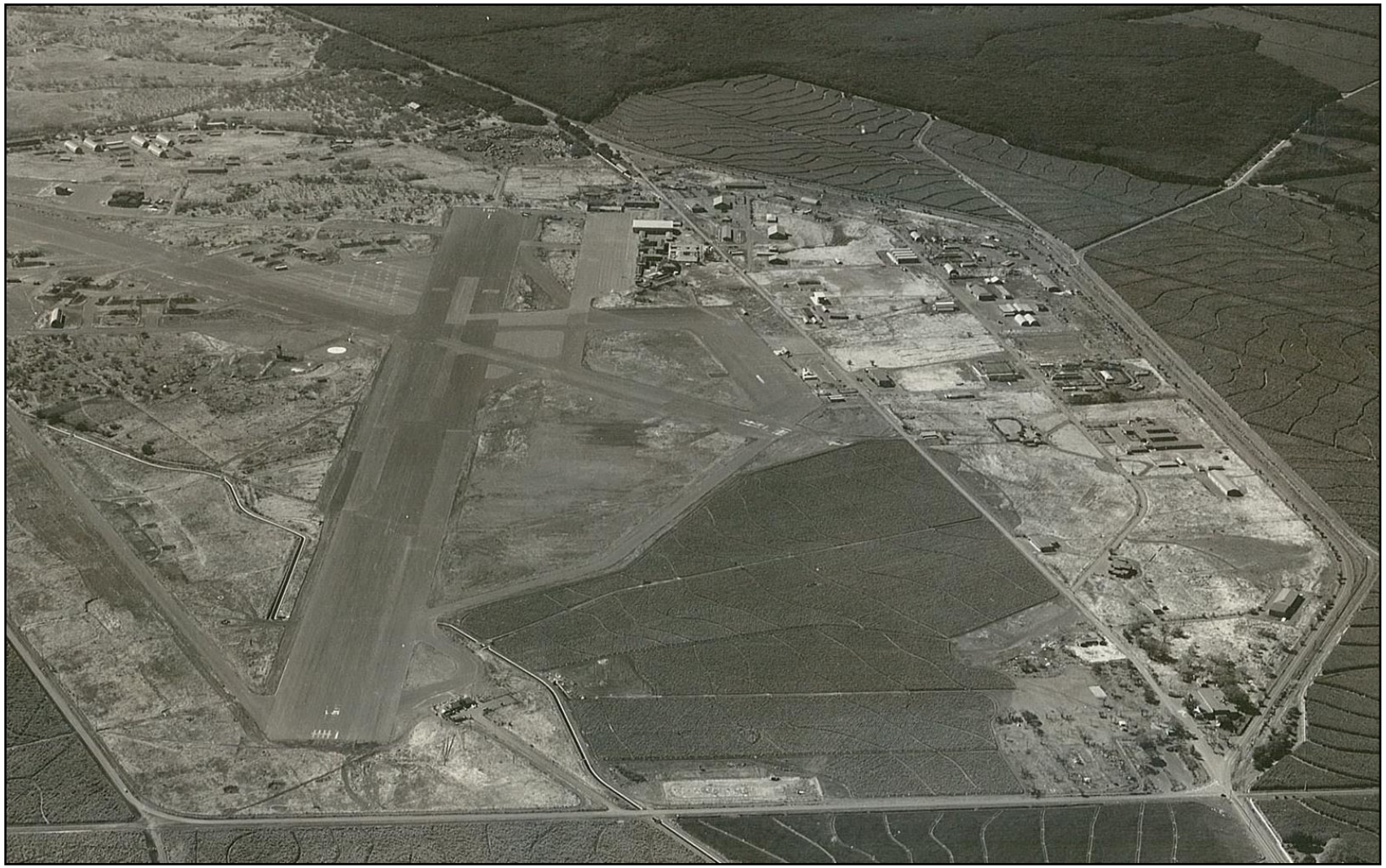


Figure 13. Postwar NAS Puunene showing a return of some land to sugar cane cultivation in foreground, at center, right; photo dated Feb. 12, 1947, and back stamped “U.S. Army Air Forces Photo Lab,” (Command 1947)

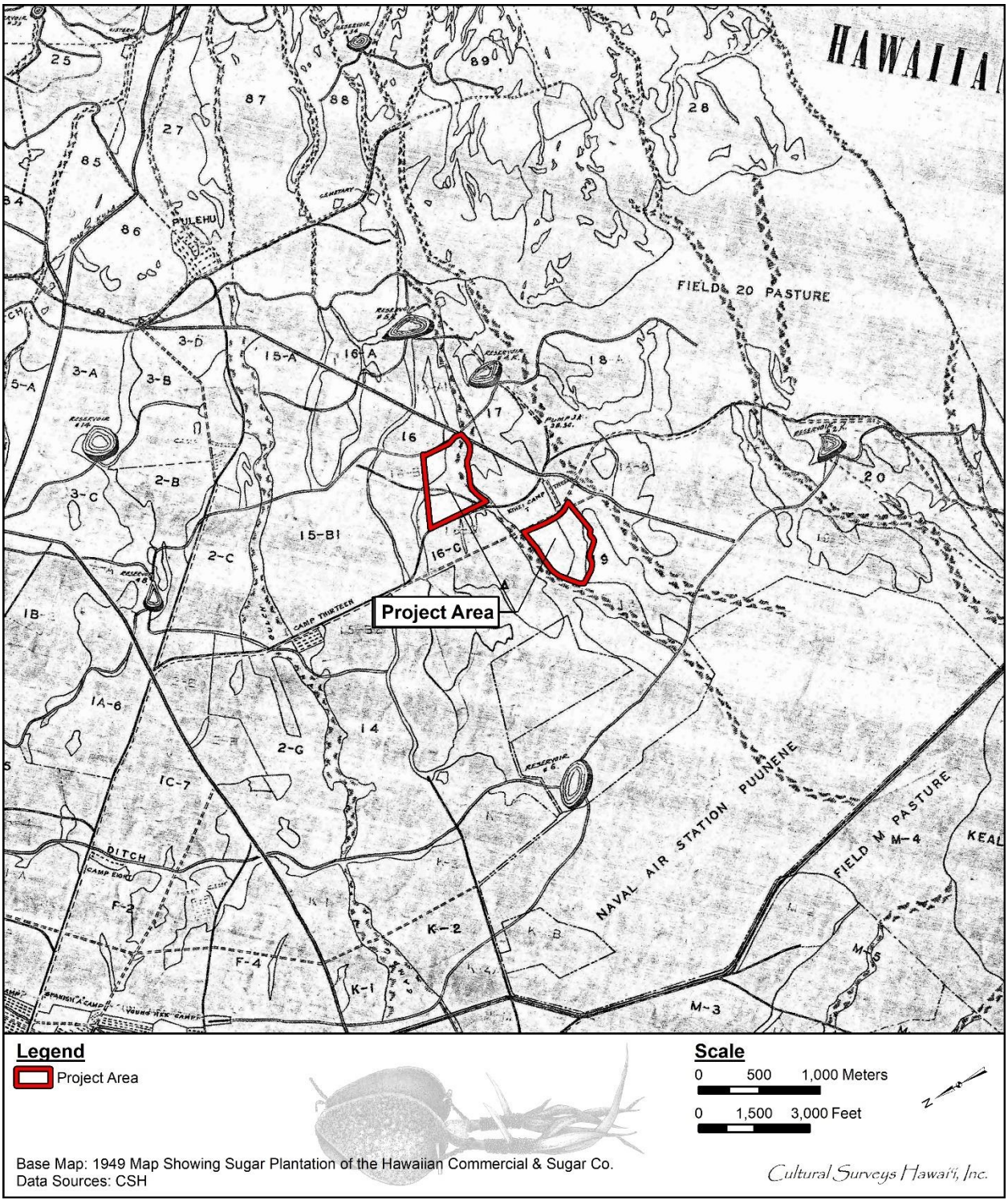


Figure 14. Portion of the 1949 HC&S sugar plantation map showing the boundary of NAS Puunene located west of the current project area (Hawaiian Commercial & Sugar Co. 1949)

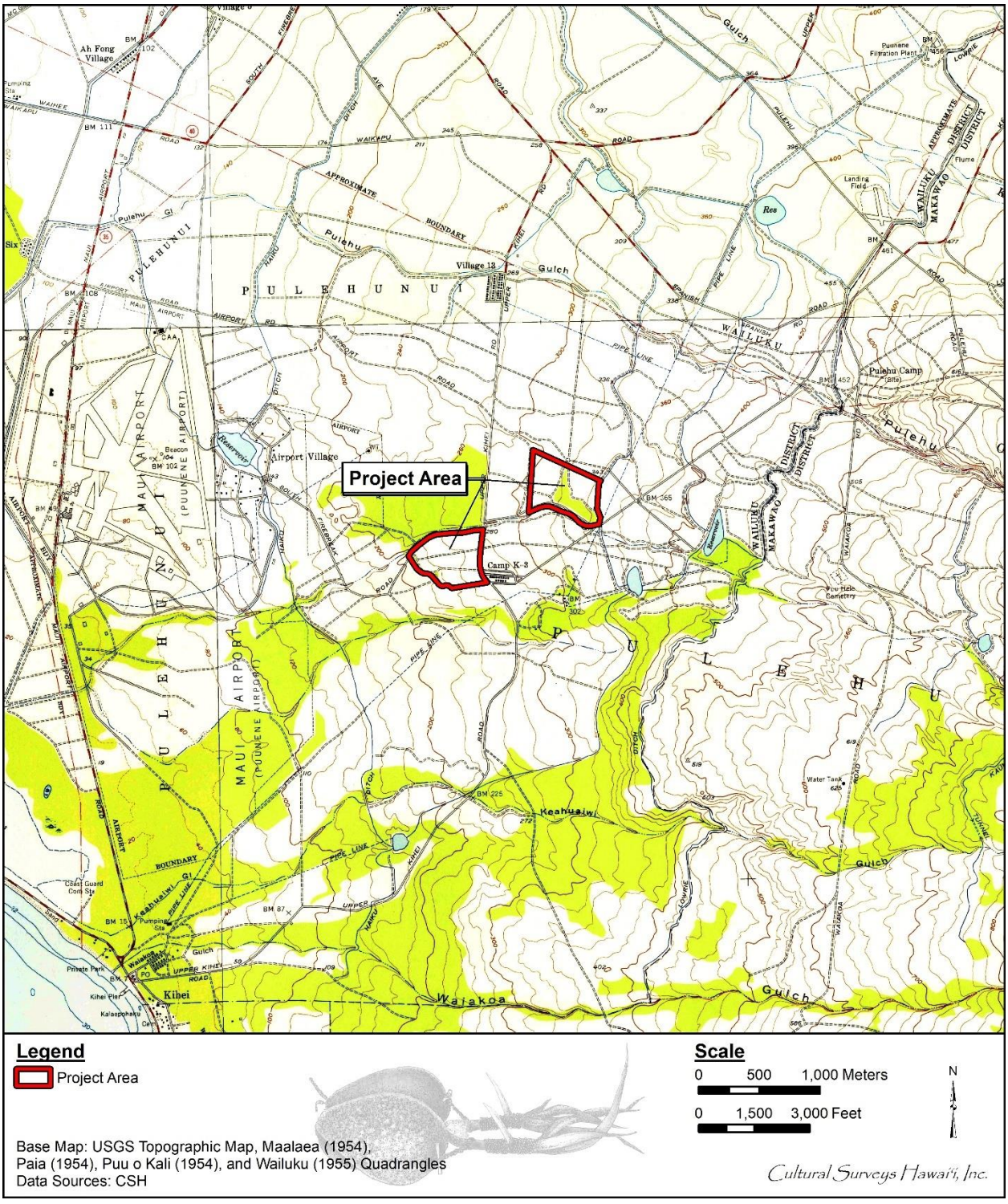


Figure 15. Portion of the 1954 USGS topographic quadrangle depicting the layout of the NAS Puunene (labeled Maui Airport) in the vicinity of the project area

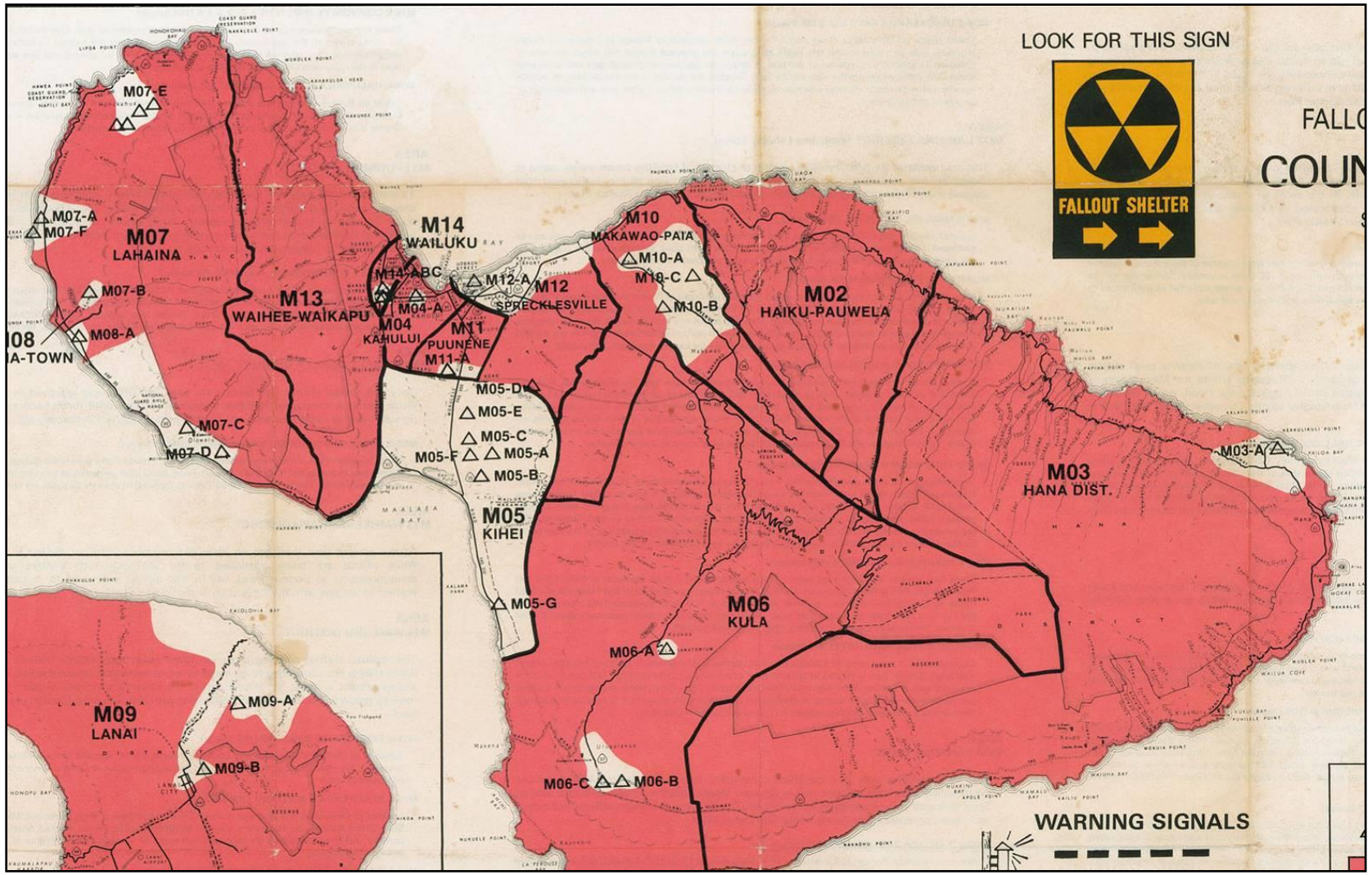


Figure 16. Maui Island map showing MO5 A through F, splinter shelters of the former NAS Puunene that were outfitted as fallout shelters in the 1960’s (County of Maui n.d.)

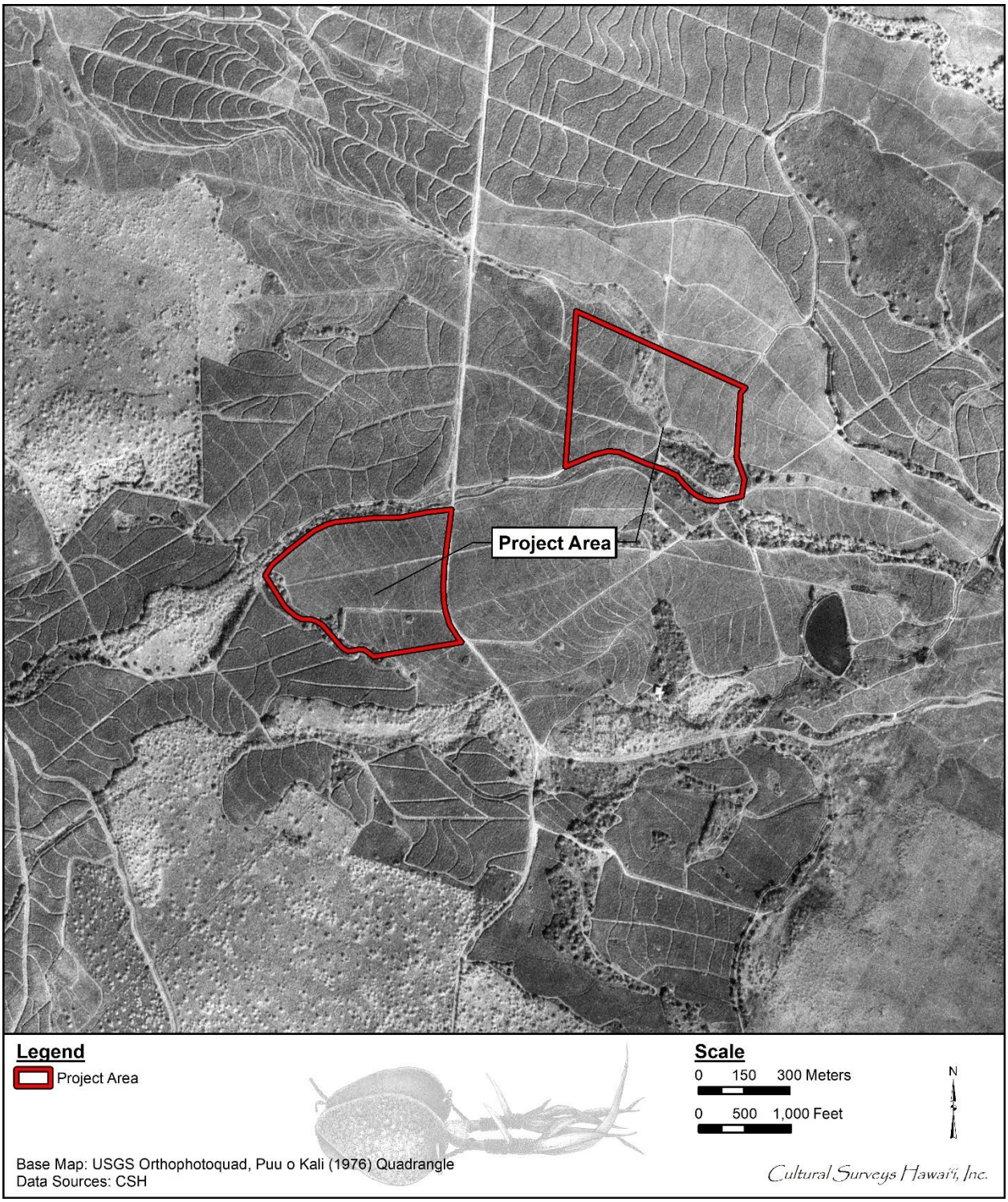


Figure 17. Portion of the 1976 Puu o Kali USGS orthophotoquad showing the expanse of commercial sugar cane fields within and surrounding the current project area (U.S. Geological Survey 1976)

2.2 **Previous Archaeological Research**

The earliest archaeological studies on the island of Maui were a part of island-wide surveys conducted in the early 1900s (Stokes 1917; Walker 1931). These studies tended to focus on the generation of descriptive lists of large-scale architecture or traditional ceremonial *heiau* sites. No *heiau* or other archaeological sites were documented in the immediate vicinity of the current project area. Between 1931 and 1976, only sporadic archaeological studies were undertaken in the region and none in the vicinity of the project area.

Following the passage of the National Historic Preservation Act in 1966 and HRS Chapter 6E, which established the Historic Preservation Program in 1976, archaeological studies occurred as a condition of development on a more frequent basis. The lands surrounding the current project area have been subject to a variety of studies as described in Table 2 and depicted in Figure 18. These studies have identified NAS Puunene, consisting of 59 standing structures and 165 total features (SIHP # 50-50-09-4164), sugarcane plantation features (SIHP # -4800), post-war ranching features (SIHP # -4801), the Kīhei Railroad bed (SIHP # -4802), the Haiku Ditch and reservoir (SIHP # -4803), and 90 other historic properties (SIHP #s 50-50-10-6693 through -6774), consisting of features associated with the sugar plantation, ranching and/or WWII period. No historic properties have been documented within the current project area. Historic properties that have been documented in the vicinity of the project area are depicted in Figure 19 and further descript in Table 3.

2.2.1 Kennedy (1990)

In 1990, ACH completed an archaeological walk-through reconnaissance survey of the proposed Hawaiian Cement Puunene Quarry site including the current project area. The study documented that the entire property was covered in sugarcane with the exception of Kolaloa Gulch. The survey included an inspection of Kolaloa Gulch and the surrounding agricultural fields. No historic properties were identified, and no further work was recommended.

2.2.2 Tomonari-Tuggle et al. (2000)

In November 1999, International Archaeological Research Institute, Inc. (IARII) conducted an AIS of the former location of naval air station (NAS) Puunene (Tomonari-Tuggle et al. 2000), located north of the present project area. The entire NAS Puunene, consisting of 165 features, 59 of which are standing structures, has been deemed historically significant and designated SIHP # 50-50-09-4164. In addition to this historic military site, four other historic properties were identified: sugarcane plantation features (SIHP # -4800), post-war ranching features (SIHP # -4801), Kīhei Railroad bed (SIHP # -4802), and Haiku Ditch and reservoir (SIHP # -4803).

2.2.3 Lee-Greig et al. (2011)

From 18 October through 12 December 2009 and from 1 through 17 February 2010, CSH conducted an AIS of approximately 3165 acres in Pūlehu Nui for a proposed agricultural subdivision (Lee-Greig et al. 2011). Ninety historic properties (SIHP #s 50-50-10-6693 through -6774) were documented, consisting of features associated with the sugar plantation, ranching and/or WWII period.

Table 2. Previous Archaeological Studies in the Vicinity of the Project Area

Reference	Type of Study	Location	Results
Kennedy (1990)	Archaeological reconnaissance survey	Hawaiian Cement Puunene Quarry	No historic properties identified
Tomonari-Tuggle et al. (2000)	Archaeological inventory survey as part of an archaeology, architecture, and oral history report	Former NAS Puunene	Documented NAS Puunene, consisting of 59 standing structures and 165 total features (SIHP # 50-50-09-4164) and identified four other historic sites: sugarcane plantation features (SIHP # -4800); post-war ranching features (SIHP # -4801); Kīhei Railroad bed (SIHP # -4802); and Haiku Ditch and reservoir (SIHP # -4803)
Lee-Greig et al. (2011)	Archaeological inventory survey	Approximately 3165 acres located northeast and extending *mauka* from the present project area	Identified 90 historic properties (SIHP #s 50-50-10-6693 through -6774), consisting of features associated with the sugar plantation, ranching and/or WWII period
Rotunno-Hazuka et al. (2011)	Archaeological inventory survey	Hawaiian Cement Puunene Quarry Expansion Increment 1	No historic properties identified
Fuentes et al. (2015 Draft)	Archaeological inventory survey	Hawaiian Cement Puunene Quarry Expansion Increment 3	No historic properties identified

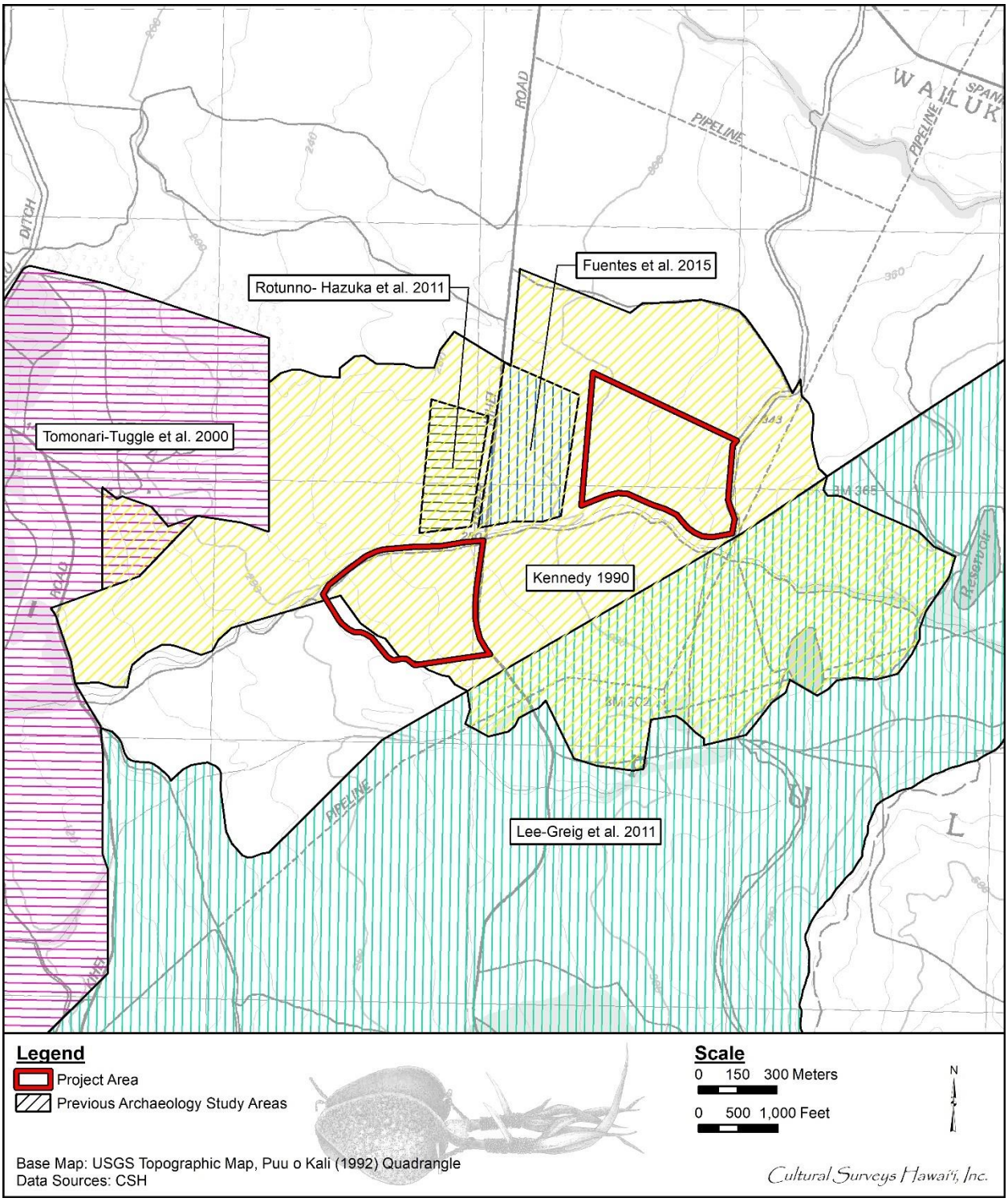


Figure 18. Portion of the 1992 Puu o Kali USGS topographic quadrangle depicting the location of previous archaeological studies in the vicinity of the current project area

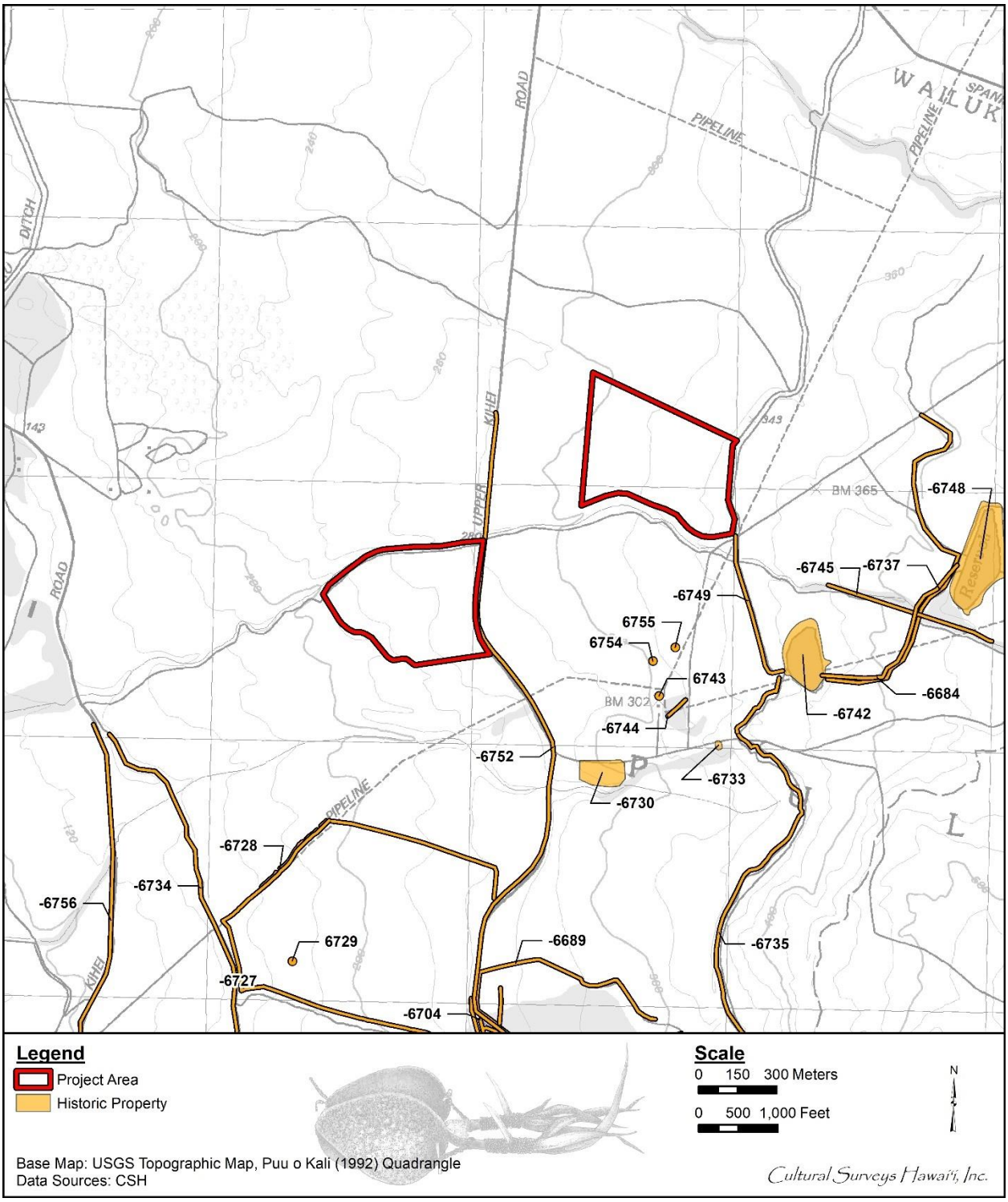


Figure 19. Portion of the 1992 Puu o Kali USGS topographic quadrangle depicting the location of previously documented historic properties in the vicinity of the project area

Table 3. Historic properties documented in the vicinity of the project area

SIHP 50-50-10-	Feature	Feature Type	Function	Probable Age	Condition
6684	None	Irrigation Pipe	Water Control	Historic Plantation	Fair to Poor
6689	None	Fence Line	Animal Husbandry	Historic Ranch	Good
6704	None	Fence Line	Animal Husbandry	Historic Ranch	Fair
6727	None	Fence Line	Indeterminate	Historic Ranch	Poor
6728	None	Irrigation Ditch	Water Control	Historic Plantation	Remnant
6729	None	C-Shape	Indeterminate	Possible Historic	Good
6730	Overall	Plantation Camp 3	Habitation	Historic Plantation	Good to Remnant
	A	Platform	Habitation	Historic Plantation	Good to Fair
	B	Wall	Indeterminate	Historic Plantation	Fair
	C	Wall	Indeterminate	Historic Plantation	Fair
	D	Depression	Indeterminate	Historic Plantation	Fair to Poor
	E	Mound	Indeterminate	Historic Plantation	Good
	F	Wall/Depression	Indeterminate	Historic Plantation	Poor
	G	U-Shape	Indeterminate	Historic Plantation	Poor
	H	Depression/Hole	Habitation	Historic Plantation	Poor
	I	Terrace	Habitation	Historic Plantation	Remnant
6733	None	Reservoir	Agriculture	Historic Plantation	Good
6734	None	Irrigation Ditch	Water Control	Historic Plantation	Good
6735	Overall	Irrigation Ditch and Component Gates	Water Control	Historic Plantation	Good to Fair
	A	Irrigation Ditch	Water Control	Historic Plantation	Good
	B	Irrigation Gates	Water Control	Historic Plantation	Fair
6737	None	Irrigation Ditch	Water Control	Historic Plantation	Good
6742	None	Reservoir	Agriculture	Historic Plantation	Good
6743	None	Pump House	Agriculture	Historic Plantation	Remnant
6744	None	Fence Line	Animal Husbandry	Historic Ranch	Remnant

SIHP 50-50-10-	Feature	Feature Type	Function	Probable Age	Condition
6745	None	Fence Line	Possible Boundary Marker	Historic Plantation	Poor
6748	None	Reservoir	Agriculture	Historic Plantation	Good
6749	None	Irrigation Ditch	Water Control	Historic Plantation	Good
6752	None	Historic Road	Transportation	Historic Plantation	Good to Poor
6754	None	WWII-Era Bomb Shelter	WWII Military	WWII Military	Excellent
6755	None	Concrete Cistern	Water Control	Historic Plantation	Good
6756	None	Historic Road	Transportation	Historic Plantation	Good to Poor

2.2.4 Rotunno-Hazuka et al. (2011)

In 2010, ASH conducted an archaeological inventory survey for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an "archaeological assessment" in accordance with §13-284-5(5)(A). The study recommended no further work.

2.2.5 Fuentes et al. (2015 Draft)

In 2014, ASH returned to the area to conduct an archaeological inventory survey of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2015 Draft). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. As such the study was termed an "archaeological assessment" in accordance with §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No: 1505MD19). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017 with no response. Quarrying work in Increment 3 began and has continued without SHPD acceptance of the archaeological inventory survey.

2.3 Predictive Model

While previous archaeological studies conducted in the vicinity of the project area have identified numerous surface historic properties related to commercial sugarcane cultivation, ranching, and military use, no historic properties have been identified within the current project area. The project area was subject to a reconnaissance level pedestrian inspection with no finds. Two adjacent archaeological inventory surveys included a total to 37 backhoe-assisted test excavations with no finds. The adjacent studies documented that the stratigraphy of this area includes an agricultural plow zone developed over eroding and solid basalt bedrock. Based on the results of previous archaeological studies, there is a low expectation of the inadvertent discovery of historic properties within the project area. However, architectural remnants or artifacts related to plantation agriculture, the plantation railroad, or nearby military use are possible. Furthermore, while unlikely at this location given the traditional and historic background of the area, human burials have been identified beneath agricultural plow zones on Maui (Yucha and Yucha 2018 Draft; Yucha et al. 2017).

Section 3 Archaeological Monitoring Provisions

Under Hawai‘i State historic preservation legislation, “Archaeological monitoring may be an identification, mitigation, or post-mitigation contingency measure. Monitoring shall entail the archaeological observation of, and possible intervention with, on-going activities, which may adversely affect historic properties” (HAR §13-13-279-3).

Hawai‘i State historic preservation legislation governing archaeological monitoring programs requires that each monitoring plan discuss eight specific items (HAR §13-13-279-4). The monitoring provisions below address these eight requirements in terms of archaeological monitoring for the excavations within the current project area.

1) Anticipated Historic Properties:

   No historic properties have been previously documented within the project area. A review of traditional and historical research and previous archaeological studies conducted in the area suggests that architectural remnants or artifacts related to plantation agriculture, the plantation railroad, or nearby military use are possible.

2) Locations of Historic Properties:

   The entire project area was previously used for commercial sugarcane agriculture and was subject to continuous plowing. Artifacts and structural remnants may be located anywhere within the project area.

3) Fieldwork:

   Archaeological monitoring will begin with the completion of a 100% coverage pedestrian inspection to confirm that there are no historic properties on the surface of the project area. This inspection will be completed prior to the start of project-related ground disturbance and the results will be provided to the SHPD.

   Archaeological monitoring will be conducted intermittently during the excavation of soils overlying bedrock within the project area and will include a combination of on-site and on-call strategies. CSH recommends that overlying sediment removal from the project area be scheduled to be completed in one effort as opposed to as needed during the quarrying effort if possible. An on-site archaeological monitor will observe sediment excavation for up to five (5) full days to confirm that there are no subsurface historic properties within the sediment deposits of the project area. If there are no significant finds during this effort, the remainder of sediment excavation will proceed under on-call archaeological monitoring with an archaeologist conducting spot checks once every 10 business-days (approximately twice per month) to record progress and confirm that subsurface conditions have not changed. No archaeological monitoring will occur during quarrying of basalt bedrock.

   The monitoring fieldwork will likely encompass the documentation of subsurface archaeological deposits (e.g., trash pits, structural remnants) and will employ current standard archaeological recording techniques. This will include drawing and recording the stratigraphy of excavation profiles where cultural features or artifacts are exposed as well as representative profiles. These exposures will be photographed, located on project area maps, and sampled. Photographs and representative profiles of excavations will be taken

even if no historically significant sites are documented. As appropriate, sampling will include the collection of representative artifacts, bulk sediment samples, and/or the on-site screening of measured volumes of feature fill to determine feature contents.

In the event of significant finds, the SHPD will be notified. If human remains are identified, construction activity in the vicinity will be stopped and no exploratory work of any kind will be conducted unless specifically requested by the SHPD. All human skeletal remains that are encountered during excavation will be handled in compliance with HAR §13-13-300 and HRS §6E-43.

4) Archaeologist's Role:

The on-site archaeologist will have the authority to stop work immediately in the area of any findings so that documentation can proceed, and appropriate treatment can be determined. In addition, the archaeologist will have the authority to slow and/or suspend construction activities in order to ensure that the necessary archaeological sampling and recording can take place.

5) Coordination Meeting:

Before work commences on the project, an archaeologist shall hold a coordination meeting to orient the construction crew to the requirements of the archaeological monitoring program. At this meeting the monitor will discuss the procedures for both on-site and on-call monitoring. The archaeologist will also emphasize his or her authority to temporarily halt construction and that all finds (including objects such as bottles) are the property of the landowner and may not be removed from the construction site. At this time, it will be made clear that the archaeologist must be on-site to conduct a pedestrian inspection before work commences, remain on-site for five (5) full days of sediment excavation, and continue with spot checks once every 10 business-days for the duration of sediment excavation. It will also be clarified that no archaeological monitoring is required during quarrying of basalt bedrock.

6) Laboratory Work:

Laboratory work will be conducted in accordance with HAR §13-13-279-5(6). Laboratory analysis of non-burial related finds will be tabulated, and standard artifact and midden recording will be conducted as follows. Artifacts will be documented as to provenience, measurements, weight, type of material, and presumed function. Photographs of representative artifacts will be taken for inclusion in the archaeological monitoring report. Bone and shell midden materials will be sorted down to species, when possible, and then tabulated by provenience.

As appropriate, collected charcoal material obtained within intact cultural deposits will be analyzed for species identification. Charcoal samples ideal for dating analyses will be sent to Beta Analytic, Inc. for radiocarbon dating. If appropriate, artifacts may be sent to the University of Hawai‘i-Hilo Geoarchaeology Lab for Energy-Dispersive X-ray Fluorescence (EDXRF) analysis in order to identify and possibly geographically locate the source material. All analyzed samples, provenience information, and results will be presented in table form within the archaeological monitoring report.

7) Report Preparation:

The report will contain sections on monitoring methods, archaeological results, stratigraphy, and results of laboratory analyses, and it will present a synthesis of these results. The report will address the requirements of a monitoring report (pursuant to HAR §13-13-279-5). Photographs of excavations will be included in the monitoring report even if no historically significant sites are documented. Should burial treatment be completed as part of the monitoring effort, a summary of this treatment will be included in the monitoring report. Should burials and/or human remains be identified, CSH will provide all appropriate additional written documentation (e.g., letters, memos, reports) that may be requested by the SHPD.

8) Archiving Materials:

All burial materials will be addressed in accordance with SHPD directives. Materials not associated with burials will be temporarily stored at CSH's Wailuku office until an appropriate curation facility is selected, in consultation with the landowner and the SHPD. All data generated will be stored at the CSH offices.

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Appendix A SHPD Correspondence

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

PAUL CONRY
INTERIM FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

August 8, 2012

Mr. Jeffrey Pantaleo, Principal Investigator
C/O Ms. Lisa Rutunno-Hazuka
Archaeological Services Hawai'i
Via Email: lisa@ashMaui.com

LOG NO: 2011.0298
LOG NO: 2011.0340
DOC NO: 1208JP01

Aloha Ms. Rotunno-Hazuka:

SUBJECT: **Chapter 6E-42 Historic Preservation Review-**
Archaeological Assessment Report for the Hawaiian Cement Quarry Expansion Project
Pulehunui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)

Thank you for the opportunity to review the report titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pors.. Pulehunui Ahupua'a, Kula Moku; Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011). The report was originally received on January 26, 2011. We apologize for the delayed response.

The archaeological survey with negative findings was conducted for the 24.476-acre proposed rock quarry expansion site. A surface investigation occurred along with twenty excavated mechanical backhoe test trenches. Over the years, the project area has been disturbed continuously by intensive agricultural propagation and rock mining. Approximately 9.5 acres are active sugarcane fields. No further archaeological work is recommended for the project area, we concur with this recommendation.

The report contains information as required for assessment reports, pursuant to Hawaii Administrative Rule (HAR) 13-284 and13-276-5; it is accepted as final. We request that a few corrections to be included in the final report (see attachment). Please send one hardcopy of the corrected final document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. Please send a corrected final report to the Maui SHPD office as well. For questions about this letter, please contact Jenny at (808) 243-5169 or Jenny.L.Pickett@Hawaii.gov.

Mahalo,

Theresa K. Donham
Archaeology Branch Chief

cc: County of Maui, Planning fax: (808) 270-7634
County of Maui DSA fax: (808) 270-7972

Ms. Lisa Rotunno-Hazuka
August 8, 2012
Page 2

ATTACHMENT

Requested corrections for: *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pors., Pulehunui Ahupua'a, Kula Moku; Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011).

Previous Archaeological Studies

1) Please add the recent Cultural Surveys Hawaii archaeological surveys (2007 etc) to the map (Figure 9) and to the previous archaeology background text.

Lab Work

2) Please edit this section to indicate nothing was identified, collected, or being curated.

Trench Descriptions

3) Please correct the associated trench Figures to correspond with the accurate text references.

Additional Comment

4) Please adjust the contents regarding archaeological recommendations for adjacent areas accordingly. In the final copy of the report, please adjust the associated contents accordingly. As we recently discussed in meeting regarding the project report, individual projects are usually treated separately so each project needs to be evaluated on a case-by-case basis. We hope to continue evaluating and providing recommendations regarding future proposed projects for the surrounding areas.

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

W. ROY HARDY
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

May 12, 2015

Jeffrey Pantaleo, M.A.
c/o Lisa Rotunno-Hazuka
Archaeological Services Hawaii, LLC
PO Box 1015
Puunene, Hawaii 96784
Via email to: lisa@ashmaui.com

LOG NO: 2014.04654
DOC NO: 1505MD19
Archaeology

Aloha Mr. Pantaleo:

SUBJECT: Chapter 6E-42 Historic Preservation Review–
Draft Archaeological Assessment for the Hawaiian Cement Quarry
Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)

Thank you for the opportunity to review the submittal titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 pors., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui* by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014). We received the submitted report on October 13, 2014 and apologize for the delay in our reply.

An archaeological survey was conducted prior to planned expansion of the existing Hawaiian Cement Quarry at the request of Mr. Gomes for the owner. This report documents an archaeological inventory survey of 41.968 acres, a portion of the 2,008 acres contained in parcel 001. Fieldwork occurred on the 14th and 28th of June and the 3rd and 12th of July in 2014. 33.168 acre were cultivated in sugarcane at that time, while 8.8 acres were cleared following harvest. Pedestrian survey was performed by one archaeologist and was followed by 19 mechanical excavations, including 17 backhoe trenches and two bulldozer cuts. No historic properties were identified in any of the excavations or above ground.

We are requesting revisions to the report as detailed in the attachment to this letter. Please contact me at (808) 243-4641 or Morgan.E.Davis@hawaii.gov if you have any questions or concerns about this letter.

Mahalo,

Morgan E. Davis
Lead Archaeologist, Maui Section

Archaeological Services Hawaii, LLC
May 12, 2015
Page 2

Attachment
Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 pors., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014)

1. Executive Summary, page 2, first paragraph: please replace "As detailed in" for "The" before 'background research.'

    a. Fifth paragraph: please delete everything after the second paragraph, beginning with the sentence beginning "Similarly" – these statements regarding areas outside of the survey area are out of scope for this report.

2. Introduction, page 9, first paragraph: please include a citation for the prior AA work in the nearby 42 acres mentioned here.

3. Figure 2, page 11: please provide a more detailed/closeup view (or a second map showing a portion, not all, of parcel 001) of the APE including the boundaries of Camps 3 and 13.

4. Existing Conditions, page 12, Environmental Setting first paragraph, first sentence: please replace "piece of land district" with "section of land."

    a. Second to last sentence, same page: please replace "Kula District" with either "Makawao District" or "Kula Moku."

    b. Last sentence: please clarify which "this" *ahupua'a* is referring to, as two were mentioned above.

5. Previous Archaeology, page 17, second entry: please note that Sinoto and Pantaleo 1991 does not appear on figure 8; please include.

    a. Page 18, ASH 2010 AA, end of page: please provide a citation for the information about adding marine shells as a soil conditioner to provide phosphorous.

    b. Page 19, final sentence: please replace lead-in "Unfortunately" with "However."

6. Field Work, page 21, second paragraph: please indicate the transect spacing used in pedestrian survey.

    a. Third paragraph, second sentence: please revise – testing was not "systematic random" because it was worked around actively-farmed acreage, approximately 70% of the parcel was farmed in sugarcane at the time.

7. Results of Survey, page 22, third sentence: please revise as necessary, the sentence appears to have been cut off/incomplete after the number 17.

    a. Somewhere in here, the inconsistency of excavation results needs to be addressed. Some trenches contained only a single layer, while others were up to five deep; yet all this was within a generally consistent depth. Please revise as necessary.

8. Table 1, pages 24-25: please continue the header on both pages.

    a. Please provide a key for the null (?) value appearing first in the entry of Layer V, Trench #1.

9. Discussion and Recommendations, page 54, paragraph 2: please revise to include an explanation for variety observed in the findings and questioned in item 7a above.

a. Fourth paragraph, sentence beginning "Similarly" and below – delete text between this word and the final sentence, these statements regarding areas outside of the survey area are out of scope for this report.

10. Appendix A, beginning on page 60: please review and revise. There are too many trench profiles labelled "TR 3" to be accurate; and only TRs 1-6 appear to be present. Also, specifically anomalous trenches like TR 9 are missing.

EXHIBIT J.

State Historic Preservation Division Archaeological Assessment and Archaeological Monitoring Plan Acceptance Letter Dated April 17, 2020

DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
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STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD., STE 555
KAPOLEI, HI 96707

April 17, 2020

Mr. Glen Ueno, Administrator
County of Maui
Department of Public Works
Development Services Administration Division
250 South High Street
Wailuku, Hawaii 96793

IN REPLY REFER TO:
Log No.: 2017.02140
2020.00762
Doc. No.: 2004AM09
Archaeology

Dear Mr. Glen Ueno:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
Archaeological Assessment Report for the Hawaiian Cement Expansion Project and Archaeological Monitoring Plan for the Increments 2 and 4 of the Expansion Project
Pūlehu Nui Ahupuaʻa, Wailuku District, Island of Maui
TMK: (2) 3-8-004:001 por.

This letter provides the State Historic Preservation Division's (SHPD's) review of the subject draft report titled, *Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-004:001 pors., Pūlehu Nui Ahupuaʻa, Kula Moku, Wailuku District, Island of Maui* (Fuentes et al., March 2020). SHPD previously reviewed the subject archaeological assessment (AA) report and request revisions to the report in a letter dated May 12, 2015 (Log No. 2014.04654, Doc. No. 1505MD19). SHPD received the subject revised report on September 17, 2017 (Log No. 2017.02140).

This letter also provides SHPD's review of the subject draft plan titled, *Archaeological Monitoring Plan for the Hawaiian Cement Quarry Mining Site Increments 2 and 4 Expansion Project, Pūlehu Nui Ahupuaʻa, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 por.* (Yucha and Hammatt, March 2020). SHPD received the subject archaeological monitoring plan on March 31, 2020 (Log No. 2020.00762) following consultation between Hawaiian Cement, Cultural Surveys Hawaii Inc. (CSH, archaeological consultant), and SHPD on March 4, 2020.

The parcel has been subject to previous archaeological investigations including an archaeological reconnaissance survey (Kennedy 1990), and two archaeological inventory surveys (Rotunno-Hazuka et al. 2011 and Fuentes et al., March 2020). The two archaeological inventory survey (AIS) investigations identified no historic properties. Per HAR §13-284-5(b)(5)(A), negative AIS results shall be presented in an archaeological assessment (AA) report. SHPD reviewed and accepted the Rotunno-Hazuka et al. (2011) AA report in a letter dated August 8, 2012 (Log Nos. 2011.0298 and 2001.0340, Doc. No. 1208JP01). SHPD reviewed and requested revisions to a draft of the Fuentes et al. (October 2014) AA report in a letter dated May 12, 2015 (Log No. 2014.04654, Doc No. 1505MD19) and received the subject revised report on September 17, 2017 (Log No. 2017.02140).

The Fuentes et al. (2020) AIS was conducted in support of the Hawaiian Cement Quarry Expansion project. The project area consists of a 41.968-acre portion of the overall 2,008-acre subject parcel. Archaeological testing of the project area included a pedestrian survey of a portion of the project area spaced in 5-meter intervals. Additionally, 17 backhoe test trenches and two bulldozer cuts were excavated. No historic properties were. The AA report includes the locations of the test trenches, photographs, soil profiles drawn to scale, and soil descriptions using USDA soil terminology and attributes with Munsell colors.

The revised Fuentes et al. (2020) AA report adequately addressed the requested revisions from our previous review (Log No. 2014.04654, Doc No. 1505MD19). The report meets the minimum requirements specified in HAR §13-276-5. **The AA report is accepted.** Please send two hard copies of the document, clearly marked FINAL, along with a copy of this review letter and a text-searchable PDF version to the Kapolei SHPD office, attention SHPD Library and to lehua.k.soares@hawaii.gov.

Hawaiian Cement and their archaeological consultant (CSH) consulted with SHPD during a meeting on March 4, 2020. During the meeting, Hawaiian Cement requested SHPD review the revised AA report submitted to SHPD on September 17, 2017 (Log No. 2017.02140). Additionally, Hawaiian Cement proposed work for increments 2 and 4 of the expansion project, including a field inspection with program of archaeological monitoring for identification purposes to be conducted during the excavation of soils overlying bedrock within the project area. The proposed project will include cement quarry mining within the entire footprint of increments 2 and 4. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock to be quarried and processed. No quarrying will occur within Kolaloa Gulch.

The AMP (Yucha and Hammatt, March 2020) proposes archaeological monitoring for identification purposes and provides a summary of previous archaeological investigations and identified historic properties present within the parcel and is formatted to address the rules outlined in HAR §13-279-4 (1) through (8) and stipulates the following:

- Archaeological monitoring will begin with the completion of a 100% coverage pedestrian inspection to confirm that there are no surface historic properties within the project area. This inspection will be completed prior to the start of project-related ground disturbance;
- A coordination meeting will be conducted between the construction team and monitoring archaeologist prior to construction activities so the construction team is aware of the need for archaeological monitoring and the provisions detailed in the plan;
- Archaeological monitoring will include a combination of on-site and on-call monitoring. An on-site archaeological monitor will observe sediment excavation for up to five (5) full days to confirm there are no subsurface historic properties within the sediment deposits of the project area. If there are no significant finds during this period, the remainder of sediment excavation will proceed under on-call archaeological monitoring with an archaeologist conducting spot checks once every 10 business-days to record progress and inspect the exposed stratigraphy for historic properties. No archaeological monitoring will occur during quarrying of the basalt bed;
- Quarterly archaeological monitoring letter reports will be submitted to SHPD consisting of a cover letter with photographs, a summary of archaeological work and the status of project related construction work;
- The Quarterly reports will start with the results of the initial pedestrian survey and are intended to keep SHPD informed. A monitoring report meeting the requirements of HAR §13-279-5 and covering all the reported work will be submitted for review and acceptance following the completion of project related archaeological monitoring;
- The archaeological monitor has the authority to temporarily halt all activity in the area in the event of a potential historic property being identified, or to record archaeological information for cultural deposits or features;
- If non-burial historic properties are identified, documentation shall include, as appropriate, recording stratigraphy using USDA soil descriptions, GPS point collection, recordation of feature contents through excavation or sampling of features, screening of features, representative scaled profile drawings, photo documentation using a scale and north arrow, and appropriate laboratory analysis of collected samples and artifacts. Additionally, photographs and profiles of excavations will be collected from across the project area even if no significant historic properties are encountered. Representative profiles will be a minimum of 2-meter sections;
- If human remains are identified, work will cease in the vicinity and the find shall be secured, and provisions outlined within the Hawaii Revised Statutes (HRS) §6E-43 and HAR §13-300-40, and any SHPD directives, shall be followed;
- Collected materials not associated with burials will be temporarily stored at the archaeological firm's office/laboratory until an appropriate curation facility is selected, in consultation with the landowner and the SHPD and;
- Any changes in these provisions shall occur only with written approval from the SHPD.

The plan meets the minimum requirement of HAR §13-279-4. **It is accepted**. Please send two hard copies of the document, clearly marked FINAL, along with a text-searchable PDF version to the Kapolei SHPD office, attention SHPD Library. Additionally, please send a digital copy of the final AMP (Yucha and Hammatt, March 2020) to lehua.k.soares@hawaii.gov.

SHPD hereby notifies the County that the AA report (Fuentes et al., March 2020) and the AMP (Yucha and Hammatt, March 2020) have been accepted. The permit issuance process may continue.

SHPD requests written notification at the start of archaeological monitoring. SHPD looks forward to receiving brief archaeological monitoring letter reports of findings **quarterly** as specified in HAR §13-282-3(f)(1). Subsequently, SHPD looks forward to receipt of an archaeological monitoring report meeting the requirements of HAR §13-279-5 for review and acceptance following the conclusion of archaeological monitoring work.

Please contact Andrew McCallister, Historic Preservation Archaeologist IV, at Andrew.McCallister@hawaii.gov or at (808) 692-8015 for matters regarding archaeological resources or this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: The County of Maui, dsa.subdivision@mauicounty.gov
The County of Maui, building.permits@mauicounty.gov
Atlas Archaeology, atlasarch808@gmail.com
Trevor Yucha, CSH, tyucha@culturalsurveys.com
Gomes, David, Hawaiian Cement, david.gomes@hawaiiancement.com

Exhibit “B”
Letters of Authorization

HAWAIIAN CEMENT
A subsidiary of Knife River Corporation

January 31, 2025

Kate Blystone, Director
County of Maui
Department of Planning
One Main Plaza
2200 Main Street, Suite 315
Wailuku, Hawaii, 96793

SUBJECT: Proposed Hawaiian Cement Puʻunēnē Supplemental Quarry in Puʻunēnē, Maui, Hawaiʻi (TMK No. (2)3-8-004:001(por.))

Dear Ms. Blystone,

Hawaiian Cement, applicant for permits relating to a new quarry location, hereby authorizes Munekiyo Hiraga to prepare, file, process, and obtain necessary permits and approvals for a rock quarry on a portion of the land parcel identified by TMK No. (2)3-8-004:001, including, but not limited to, amendments to the existing State Special Permit (SP 92-380) and County Special Use Permit (CUP 2006/0002).

Should you have any questions, please contact Karlynn Fukuda of Munekiyo Hiraga at (808) 244-2015, or by email at planning@munekiyohiraga.com.

Sincerely,

David Gomes, President

KF:de

cc: Karlynn Fukuda, Munekiyo Hiraga
K:\DATA\HawnCemt\PuuneneSupplQuarry\Apps\SSP1\HC LOA.docx

99-1300 HALAWA VALLEY STREET AIEA, HAWAII 96701-3289 TELEPHONE (808) 532-3400 FACSIMILE (808)532-3499

February 10, 2025

Kate Blystone, Director
County of Maui
Department of Planning
One Main Plaza
2200 Main Street, Suite 315
Wailuku, Hawaii, 96793

RE: PROPOSED HAWAIIAN CEMENT PUUNENE SUPPLEMENTAL QUARRY IN PUUNENE, MAUI, HAWAII: TMK NO. (2) 3-8-004:001 CPR UNIT NO. 2 (POR.)

Dear Ms. Blystone,

Mahi Pono, owner of the subject property, hereby authorizes Hawaiian Cement and Munekiyo Hiraga to prepare, file, process, and obtain necessary permits and approvals for a rock quarry on a portion of the land parcel identified by TMK No. (2) 3-8-004:001 CPR Unit No. 2, including, but not limited to, amendments to the existing State Special Permit (SP 92-380) and County Special Use Permit (CUP 2006/0002).

Should you have any questions, please contact Karlynn Fukuda of Munekiyo Hiraga at (808) 244-2015, or by email at planning@munekiyohiraga.com.

Sincerely,

Ceil W. Howe III
CEO

cc: Karlynn Fukuda, Munekiyo Hiraga



MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.