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GOVERNOR

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CRAIG K. HIRAI
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM
HAWAII HOUSING FINANCE AND DEVELOPMENT CORPORATION
677 QUEEN STREET, SUITE 300
Honolulu, Hawaii 96813
FAX: (808) 587-0600

IN REPLY REFER TO:
17:PEO/95

December 26, 2017

Mr. Scott Glenn, Director
Office of Environmental Quality Control
Department of Health, State of Hawai'i
235 S. Beretania Street, Room 702
Honolulu, Hawai'i 96813

Dear Mr. Glenn:

With this letter, the Hawai'i Housing Finance and Development Corporation (HHFDC) hereby transmits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFNSI) for the Proposed Kaiwahine Village Housing Project situated at TMK No. (2)3-8-004:028, in the Kihei District on the island of Maui for publication in the next available edition of the Environmental Notice.

Enclosed is a completed OEQC Publication Form, one (1) hard copy of the DEA-AFNSI, three (3) Adobe Acrobat PDF files of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions, please contact Janice Takahashi, Chief Planner at (808) 587-0639.

Sincerely,

Craig K. Hirai
Executive Director

Enclosures

c: Ikaika Ohana/A0578 Kihei L.P. c/o Tom Fisher
Rachel Okoji, Environmental Risk Analysis, LLC

19-265

From: webmaster@hawaii.gov
To: HI Office of Environmental Quality Control
Subject: New submission for The Environmental Notice
Date: Tuesday, December 26, 2017 3:56:54 PM

Action name

Kaiwahine Village

Type of document/determination

Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)

HRS §343-5(a) trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Maui - multiple districts

Tax Map Key(s) (TMK(s))

(2) 3-8-004:028

Proponent type

Applicant

Permit(s)/approval(s)

- Chapter 201H-38 Affordable Housing Exemption

Approving agency

Hawaii Housing Finance and Development Corporation

Agency contact name

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Agency address

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United States
Map It

Applicant

Ikaika Ohana/A0578 Kihei L.P.

Applicant contact name

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Was this submittal prepared by a consultant?

Yes

Consultant

Environmental Risk Analysis LLC

Consultant contact name

Rachel Okoji

Consultant contact email

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Consultant address

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Honolulu, Hawaii 96826
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Map It

Action summary

Ikaika Ohana/A0578 Kihei L.P. is proposing the development of Kaiwahine Village in Kihei, Maui on 9.289 acres of land identified as TMK (2)3-8-004:028. The 120-unit rental housing project will be built in two phases and will target families with incomes at 60 percent or less of the area median income. Phase I will consist of 64 units, with 32 two- and 32 three-bedroom units (including a manager's unit). Phase II will consist of 56 units with 32 two- and 24 three-bedroom units.

Reasons supporting determination

Please see Section 7 of the document titled, Findings and Reasons Supporting Agency Determination.

Searchable PDF(s)

- Kaiwahine-Village-DEA-AFNSI-transmittal-letter-12-26-17.pdf
- Kaiwahine-Village-DRAFT-EA.pdf

Shapefile upload

- Figure-1.mxd.zip

Authorized individual

Rachel Okoji

Proponent

Ikaika Ohana/A0578 Kihei L.P.

Authorization

- The above named authorized individual hereby certifies that he/she has the authority on behalf of the identified proponent to make this submission.

ENVIRONMENTAL ASSESSMENT

Kaiwahine Village
Proposed Housing Development
0 Kaiwahine Street
Kihei, Hawaii 96753
Tax Map Key (2) 3-8-004-028

Applicant:

Ikaika Ohana/A0578 Kihei L.P.

Approving Agency:

Hawaii Housing Finance and Development Corporation

December 2017

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ENVIRONMENTAL ASSESSMENT

Kaiwahine Village
Proposed Housing Development
0 Kaiwahine Street
Kihei, Hawaii 96753
Tax Map Key (2) 3-8-004-028

Prepared by:
Environmental Risk Analysis, LLC
905A Makahiki Way
Honolulu, Hawaii 96826

Prepared for:
Ikaika Ohana/A0578 Kihei L.P.
2000 E. Fourth Street, Suite 220
Santa Ana, California 92705

Applicant:

Ikaika Ohana/A0578 Kihei L.P.

Approving Agency:

Hawaii Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, Hawaii 96813

December 2017

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Acronyms and Abbreviations

amsl	above mean sea level
ASTM	American Society for Testing and Materials
C&D	construction and demolition
CBRS	Coastal Barrier Resources System
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
dBA	decibels, A-weighted
DBEDT	Department of Business, Economic Development & Tourism
DPR	Department of Parks and Recreation
DOE	Department of Education
DOH	Department of Health
DPR	Department of Parks and Recreation
DWS	Department of Water Supply
EA	Environmental Assessment
EDR	Environmental Database Resource
EPA	Environmental Protection Agency
ERA	Environmental Risk Analysis, LLC
ESA	Environmental Site Assessment
ESG	Emergency Solutions Grant
FEMA	Federal Emergency Response Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
HAR	Hawaii Administrative Rules
HDOH	Hawaii State Department of Health
HHFDC	Hawaii Housing Finance and Development Corporation
HOME	HOME Investment Partnerships Program
HOPWA	Housing Opportunities for Persons with AIDS
HRS	Hawaii Revised Statutes
HTF	Housing Trust Fund
HUD	Department of Housing and Urban Development
LIHTC	Low Income Housing Tax Credits
LUC	Land Use Commission
LUO	Land Use Ordinance
LUST	leaking underground storage tank
MECO	Material Energy Chemicals and Other
msl	mean sea level
mg/L	milligrams per liter
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
PER	Preliminary Engineering Report
PM	Particulate Matter

REC	Recognized Environmental Condition
SAAQS	State Ambient Air Quality Standards
SCS	Scientific Consultant Services
SEL	sound exposure levels
SHPD	State Historic Preservation Division
SHWS	State Hazardous Waste Sites
SMA	Special Management Area
SO2	sulfur dioxide
TIAR	Traffic Impact Analysis Report
TMK	tax map key
UIC	Underground Injection Control
US	United States
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank

Executive Summary

This Environmental Assessment (EA) was conducted to assess potential environmental impacts associated with the construction and operation of a proposed affordable housing development on unimproved real property known as tax map key (TMK) (2) 3-8-004-028 in Kihei, Hawaii on the island of Maui. The EA was prepared to identify, document and address potential environmental impacts associated with the Proposed Action. The EA examines two alternatives, the Proposed Action, and the No Action Alternative.

- Alternative I – No Action Alternative
- Alternative II – The Proposed Action – 120-Unit housing development on Kaiwahine Street in Kihei, Hawaii. This multi-family apartment development would provide affordable rental housing for low income households.

The Office of the Governor of Hawaii, Hawaii State Legislature, and Hawaii Housing Finance and Development Corporation (HHFDC) have identified a need for affordable housing in Hawaii. In support of the Proposed Action, HHFDC approved an award of Rental Assistance Revolving Funds, Hula Mae Multifamily Bonds, as well as Federal and State Low Income Housing Tax Credits (LIHTC). In support of the Proposed Action, the HHFDC will be allocating funds from the Funds from the HOME Investment Partnerships Program (HOME) program which is subsidized by HUD.

The following potentially impacted environments were evaluated in this EA.

- Topography and Geology
- Soils
- Natural Hazard
- Flora and Fauna
- Wetlands
- Water Resources
- Climate and Air Quality
- Noise
- Solid Wastes
- Land Use Considerations and Zoning
- Archaeological and Cultural Considerations
- Circulation and Traffic
- Social Factors and Community Identity
- Economic Considerations
- Recreational and Public Facilities
- Visual and Aesthetic Resources
- Infrastructure Systems and Utilities

<u>Findings</u>

- A Finding of No Significant Impact (FONSI) is anticipated based on the environmental and societal factors considered under the Proposed Action and the No-Action Alternative.

- While potential impacts to Soil, Air Quality, Noise and Circulation and Traffic are possible during construction, implementing best management practices would reduce these impacts to less than significant levels.

- Beneficial impacts to Land Use Considerations and Zoning are anticipated as they would address the necessity of affordable rental housing for lower income persons.

- Under Alternative I, the No Action Alternative, Land Use Considerations and Zoning would incur a negative impact as full use of the land will not be realized. Additional negative impacts are anticipated to Social Factors and Community Identity under Alternative I. If No Action is taken, lower income households may not have access to affordable housing, which puts families at risk of homelessness.

SECTION 1 INTRODUCTION

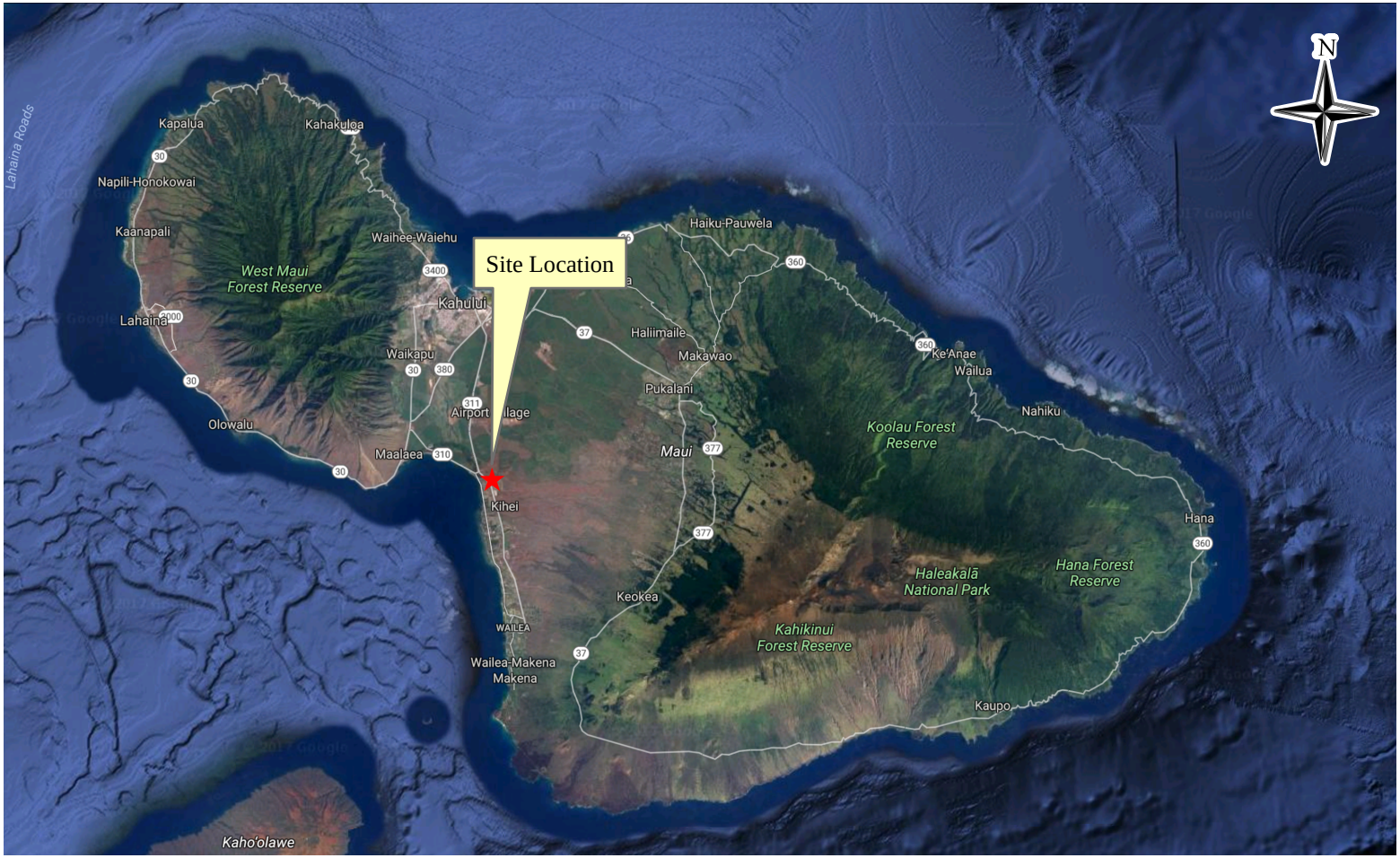
1.1 Scope and Authority

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA); 24 Code of Federal Regulations (CFR) Part 50 and Part 58 Environmental Review with National Housing Trust Fund (HTF) Environmental Provisions at 24 CFR §93.301(f)(1); the Council on Environmental Quality (CEQ) regulations, 40 CFR 1500-1508; and pursuant to Chapter 343, Hawaii Revised Statutes (HRS) and associated Title 11, Chapter 200 Hawaii Administrative Rules (HAR). The intent of the document is to ensure that systematic consideration is given to the environmental consequences of the Proposed Action. The Proposed Action is the construction of a new housing development on the island of Maui, in Kihei, Hawaii (Figures 1 and 2). A NEPA EA is required because the project is partially funded by the U.S. Department of Housing and Urban Development's (HUD) HOME Investment Partnerships (HOME) and HTF programs which are administered by the County of Maui, specifically the Department of Housing and Human Concerns (DHHC). A Chapter 343, HRS EA is required because of the use of state funds, specifically the Rental Housing Revolving Fund which is administered by the Hawaii Housing Finance and Development Corporation (HHFDC). The information contained within this document has been acquired from the Section 201H Application for Kaiwahine Village (County of Maui, Department of Housing and Human Concerns, 2011).

1.2 Project Information

Project Name:	Kaiwahine Village Proposed Housing Development Project Kihei, Hawaii
Applicant:	Ikaika Ohana/A0578 Kihei L.P. 2000 E. Fourth Street, Suite 220 Santa Ana, California 92705 Contact: Douglas Bigley (714) 492-1599
Agent:	Environmental Risk Analysis, LLC 905A Makahiki Way Honolulu, Hawaii 96826 Contact: Russell Okoji (808) 425-0968
Approving Agency:	HHFDC 677 Queen Street, Suite 300 Honolulu, Hawaii 96813
Project Location:	Kaiwahine Street Kihei, Hawaii 96753 Island of Maui
Tax Map Key No.:	(2) 3-8-004-028

Total Affected Area:	9.289-acre parcel
Existing Land Use:	Currently unpaved and undeveloped
State Land Use Classification:	Urban
State Special District:	N/A
Community Plan:	Kihei-Makena Community Plan – Single Family
LUO Zoning:	R-1 Residential District
LUO Special District:	None
Flood Zone:	Flood Insurance Rate Map Zone X
Land Owner:	Royal Main Properties LLC



Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kaiwahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Site Location Map FIGURE NUMBER: 1a

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Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kaiwahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Site Location Map FIGURE NUMBER: 1b

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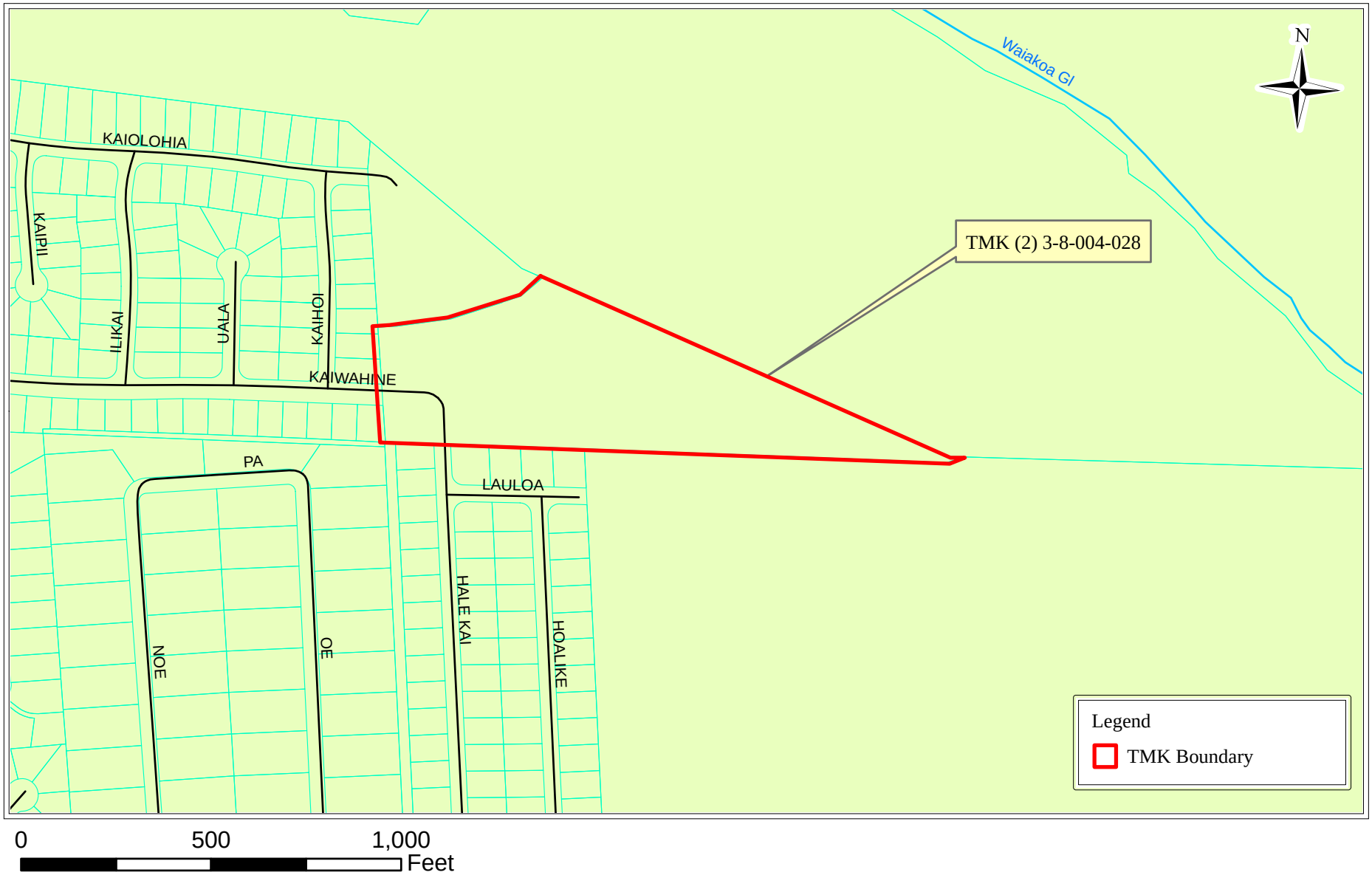

Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kaiwahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: TMK Map FIGURE NUMBER: 2

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SECTION 2 PROJECT DESCRIPTION

2.1 Purpose and Need

Purpose: This EA has been prepared to satisfy the requirements of NEPA, 24 CFR § 93.301(f)(1), 24 CFR Part 50 and Part 58, and HRS Chapter 343. The purpose of the Proposed Action is to develop an affordable housing complex for low income families. These units will address the dire need for affordable housing on Maui, for many residents who are at risk of becoming homeless due to the severe housing shortage.

Need: The Office of the Governor of Hawaii has expressed a specific need to create additional affordable housing for the very low income to moderate income households. The Hawaii State Legislature has also recognized this need by enacting Act 227, SLH 2016, which sets a goal of 22,500 rental housing units by 2026 and passing legislation that has increased monies to funds such as the Rental Housing Revolving Fund for financing to build affordable rental housing units. The Department of Business, Economic Development & Tourism (DBEDT) projects a population increase in Maui County of 25% by 2025. This would result in a total demand of between 14,000 and 15,000 additional housing units for Maui County by 2025. (DBEDT, 2015)

In May 2015, the HHFDC approved the Consolidated Plan for funding through HOME, the Housing Opportunities for Persons with AIDS Program (HOPWA), and the Emergency Solutions Grant Program (ESG). The application to HUD will fund the Counties of Maui, Hawaii, and Kauai (HHFDC, Consolidated Plan Information Packet). This project helps to fulfill the need for affordable rental housing on Maui.

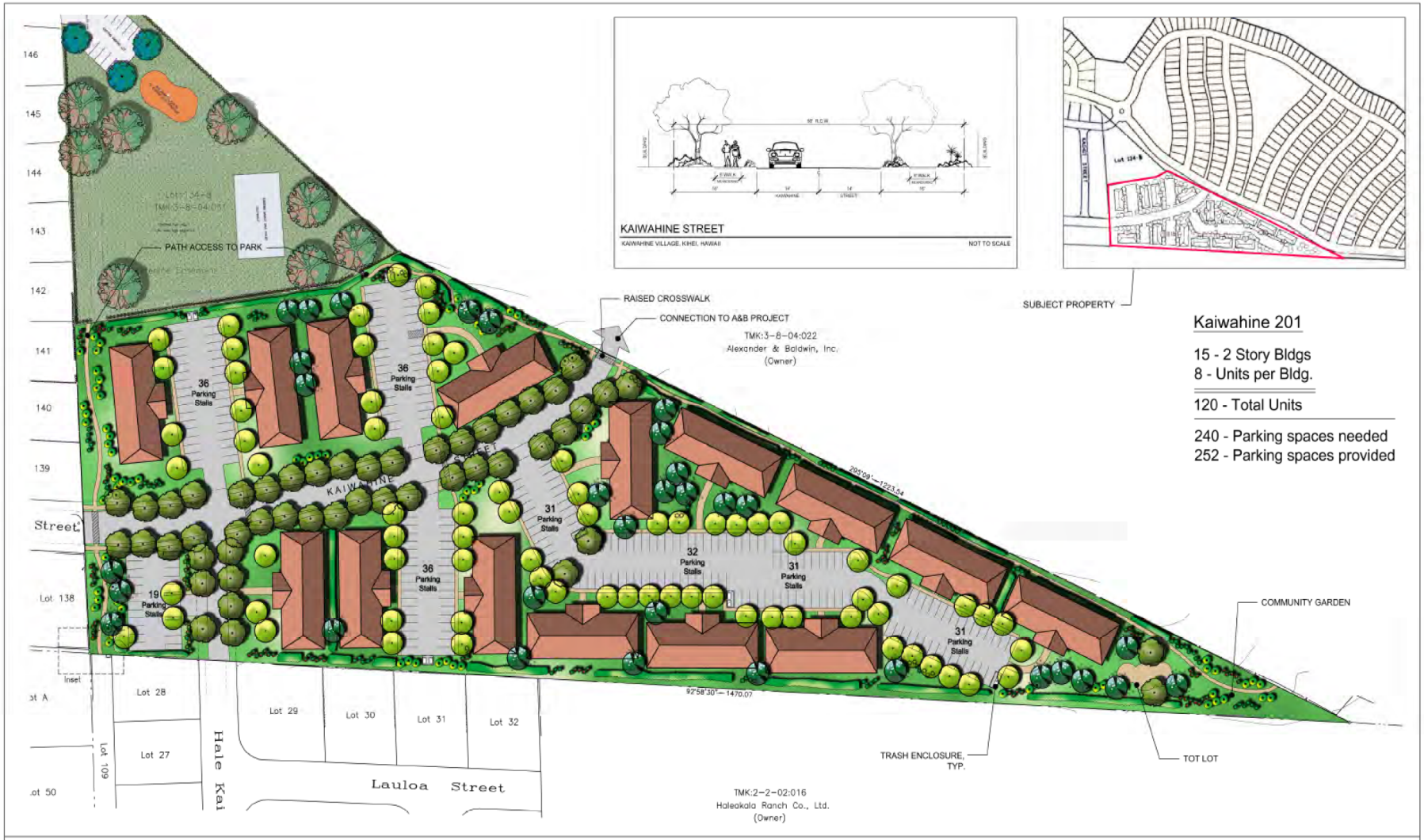
2.2 Project Description

The proposed development site is identified as tax map key (TMK) (2) 3-8-004: 028. It is also Lot 134-A of the Hale Piilani Subdivision, which encompasses 9.289 acres of land situated in Kīhei on the west side of the Island of Maui (Figures 1 and 2). Access to the property is via Kaiwahine Street off Piilani Highway. The property is currently vacant with no structures. The only site improvements are irrigation sprinklers and perimeter fencing. In 2009, a District Boundary Amendment from Agricultural to Urban was granted pursuant to Ordinance No. 3682, along with a change in zoning from Agricultural to R-1 Residential pursuant to Ordinance No. 3683.

Ikaika Ohana is proposing the development of an affordable housing project consisting of two different phases. Phase I will consist of 64 units, with 32 two bedroom units and 32 three bedroom units (including a manager's unit) for tenants with incomes ranging from 30% to 60% of the area median income of the County of Maui. Phase II will comprise of 56 units with 32 two bedroom and 24 three bedroom units (including a manager's unit) for tenants in the same income ranges. Inclusive of both phases, the development plan will have a total of 120 affordable housing units (Figure 4), with proposed rents ranging from $371 to $1,076 a month (2017). Associated improvements include grading, paved roadways, concrete curbs, gutters and sidewalks; water system, drainage system, sewer system and landscaping. The objective of this project is to produce an affordable housing development, while utilizing the least amount of State of Hawai'i resources. State financing sources include tax-exempt bonds, low income housing tax credits, and the Rental Housing Revolving Fund.

2.3 Construction Time Frame and Estimated Project Construction Costs

In order to make the project economically feasible, the Kaiwahine Village will be developed pursuant to Section 201H-38, Hawaii Revised Statutes. This process allows for an expedited review of affordable housing projects and the ability to request exemption from all statutes, ordinances, charter provisions, and rules of any government agency relating to planning, zoning, construction standards for subdivisions, development and improvement of land, and the construction of dwelling units thereon. The proposed project is requesting various exemptions from the Maui County Code. The total cost of Phase 1 is estimated to be $26,682,000, or $416,906 per unit. The total cost of Phase II is estimated to be $27,160,000, or $485,000 per unit. Construction is expected to begin in 2018 with completion by 2020.



Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kaiwahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Concept Plan FIGURE NUMBER: 3

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CONCEPTUAL FRONT ELEVATION
(BOTH BUILDING TYPES ELEVATION SIMILAR)

0' 5' 10' 20'

REAR ELEVATION

0' 5' 10' 20'

BUILDING SUMMARY: 8- TYPE "A" BUILDINGS
7- TYPE "B" BUILDINGS
TOTAL : 15 BUILDINGS, 120 UNITS

CHRIS HART & PARTNERS, INC.
LANDSCAPE ARCHITECTURE & LAND USE PLANNING

KAIWAHINE PROPOSED DEVELOPMENT
SITE PLAN AND ELEVATIONS

CHARLES H PALUMBO ARCHITECT INC.
architecture
425 Paumakua Street
Honolulu, HI 96821
Phone/Fax: (808) 577 8877
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website: www.charlespalumbo.com

Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kaiwahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Site Plan and Elevations FIGURE NUMBER: 4

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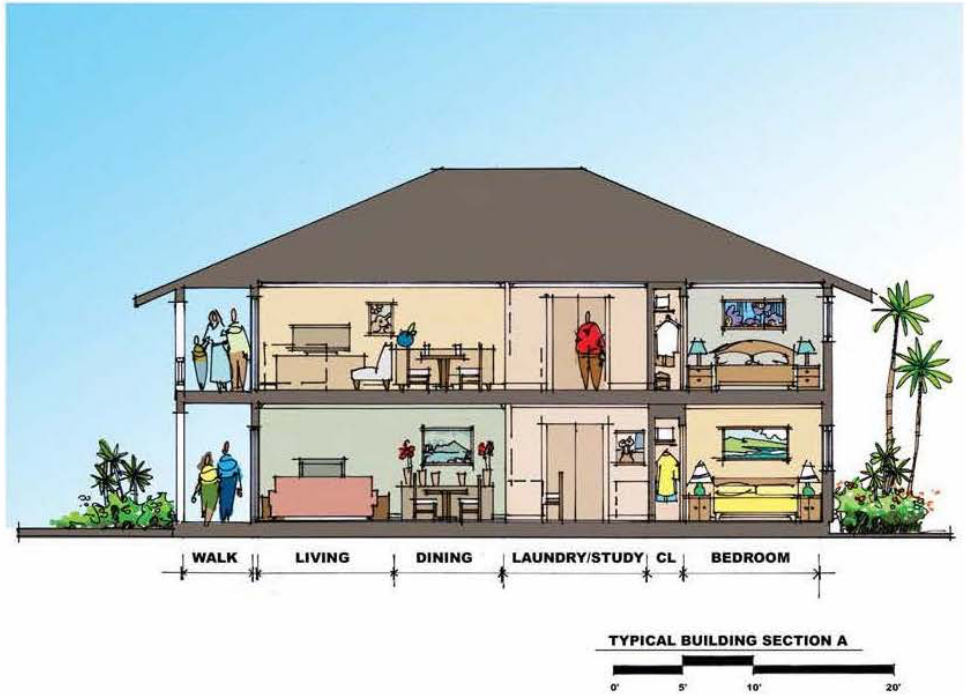

CHRIS HART & PARTNERS, INC.
LANDSCAPE ARCHITECTURE & LAND USE PLANNING

KAIWAHINE PROPOSED DEVELOPMENT
SIDE ELEVATION & BUILDING SECTION

CHARLES H. PALUMBO ARCHITECT INC.
OFFICE OF ARCHITECTURE
425 Puuhonua St./Street
Honolulu, HI 96821
Phone/Fax (808) 371-8877
e-mail: charlespalumbo@hawaii.rr.com
website: www.charlespalumbo.com

Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kaiwahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Side Elevation & Building Section FIGURE NUMBER: 5

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SECTION 3 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section details the alternatives that were analyzed in the EA. Under NEPA (as implemented by the CEQ regulations [40 CFR Parts 1500-1508]) and HAR, Title 11, Department of Health (DOH), Chapter 200 Environmental Impact Statement Rules, Section 11-200-17(f), all alternatives considered for the proposed project should be evaluated. These alternatives may possibly enhance environmental quality or avoid, reduce, or minimize some or all of the adverse environmental effects, costs, and risks.

3.1 Alternative I: No Action Alternative

Under the No Action alternative, the property which is zoned for residential uses, would continue to remain vacant. Additionally, 120 affordable rental housing units targeted at low income families would not become available. Given the recognized need for affordable-priced housing as well as the land owner's desire to see some use made of the land, this No Action Alternative is not preferred.

3.2 Alternative II: Proposed Action

The Proposed Action is the construction of a 120-unit multi-family subdivision. This development would provide affordable rental housing to low income households.

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SECTION 4 AFFECTED ENVIRONMENT

This section discusses the current status of the potentially affected environments should the Proposed Action be implemented. Affected environments include important natural and cultural sources and systems. Environmental consequences are provided in Section 5. A Phase I Environmental Site Assessment was conducted in 2017 following ASTM guidelines. No Recognized Environmental Concerns were identified for the property (Appendix A).

4.1 Physical Environment

4.1.1 Topography and Geology

According to the United States Geological Survey (USGS), Maui, Hawaii, 7.5-minute topographic quadrangle map, the subject property elevation is approximately 150 feet above mean sea level (msl). The subject property slopes in a westerly direction and is characterized by level to gently sloping topography. Elevations at the site range from approximately 142 feet above mean sea level (amsl) at its eastern extent to approximately 98 feet amsl among its western boundary. Waiakoa gulch lies to the north of the subject parcel. The Site is undeveloped.

4.1.2 Soils

The United States Department of Agriculture (USDA) Soil Conservation Service classifies the soil within the Site as Waiakoa. Waiakoa is extremely stony silty clay loam, which is characterized as having medium runoff and severe erosion hazard. Typical profile includes extremely stony silty clay loam from 0 to 20 inches, followed by stony silty clay loam to 28 inches, and bedrock down to 32 inches (USDA, 2004).

4.1.3 Natural Hazard

The Site is depicted on Federal Emergency Management Agency (FEMA) flood insurance rate map (FIRM) Map No. 1500030580F, panel 580 of 825, revised September 19, 2012. It was determined that the Site lies within Flood Zone X, beyond the 500-year flood plain (Figure 6).

The Site is not located in a tsunami evacuation zone. The County of Maui, Evacuation Zone Map (2013) for the area is presented as Figure 7.

4.1.4 Flora and Fauna

The project site is former Haleakala Ranch land, an area of rock and scrub. Onsite flora is typical of such areas and include weeds and scrub grasses, as well as Kiawe trees. Except for few plant native species such as `ilima (Sida fallax) and `uhaloa (Waltheria americana), vegetation in the project area was generally composed of non-native introductions. Although decomposing grasses dominated the vegetation regime, larger vegetation common to arid regions such as kiawe (Prosopis pallida), koa haole (Leucaena leucocephala), and castor bean (Ricinus communis) were present. Sisal (Agave sisalana) and horseradish trees (Moringa oleifera) were observed near the project area's south boundary, adjacent to existing residential housing.

On-site fauna includes rats, mice, mongoose, francolins, and mynah. There are no endangered or threatened species, no candidates listed as endangered or threatened species, or any critical habitat for any such species known to occur on the site.

An inquiry with the US Fish and Wildlife Service (USFWS, 2017a) revealed there are six federally listed species in the vicinity of the project area:

- the endangered Hawaiian hoary bat (Lasiurus cinereus semotus),
- the Hawaiian goose or nene (Branta sandvicensis),
- Hawaiian petrel (Pterodroma sandwichensis),
- band-rumped storm petrel (Oceanodroma castro),
- one endangered insect, the Blackburn's sphinx moth (Manduca blackburni), and
- the threatened Newell's shearwater (Puffinus newelli).

There is no proposed or final critical habitat within the vicinity of the project area as reported by USFWS.

The USFWS provided the following recommendations to avoid or minimize project impacts to listed species:

Hawaiian hoary bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as three feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

Measures to avoid and minimize impacts to the endangered Hawaiian hoary bat:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

Nene

Nene are found on the islands of Hawaii, Maui, Molokai, and Kauai predominately, with a small population on Oahu. They are observed in a variety of habitats, but prefer open areas, such as pastures, golf courses, wetlands, natural grasslands and shrub lands, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

Measures to avoid and minimize potential project impacts to Nene:

- Do not approach, feed, or disturb Nene.
- If Nene are observed loafing or foraging within the project area during the Nene breeding season (September through April), have a biologist familiar with the nesting behavior of Nene 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 three 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 feet of proposed work, or a previously undiscovered nest is found within said radius after work begins.

- In areas where Nene are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.

Blackburn's sphinx moth

The Blackburn's sphinx moth may be in the vicinity of the proposed project area. Adult moths feed on nectar from native plants, including beach morning glory (Ipomoea pes-caprae), iliee (Plumbago zeylanica), and maiapilo (Capparis sandwichiana); larvae feed upon non-native tree tobacco (Nicotiana glauca) and native aiea (Nothocestrum sp.). To pupate, the larvae burrow into the soil and can remain in a state of torpor for up to a year (or more) before emerging from the soil. Soil disturbance can result in death of the pupae.

Survey recommendations:

- A biologist familiar with the species should survey areas of proposed activities for Blackburn's sphinx moth and its larval host plants prior to work initiation.
    - These surveys should be conducted during the wettest portion of the year (usually November-April or several weeks after a significant rain) and within 4-6 weeks prior to construction.
    - Surveys should include searches for eggs, larvae, and signs of larval feeding (chewed stems, grass, or leaf damage).
    - If moths or their larval host plants are found during the survey, please contact the USFWS for additional guidance to avoid take.
- Any larval host plants of Blackburn's sphinx moth identified should not be cut or disturbed without further consultation with the Service.

Measures should be taken to avoid attraction of BSM to the project location and prohibit tree tobacco from entering the site. Tree tobacco can grow greater than three feet tall in approximately six weeks. If it grows over three feet, the plants may become a host plant for BSM. Recommended mitigation measures include the following:

- Remove any tree tobacco less than three feet tall.
- Monitor the site every 4-6 weeks for new tree tobacco growth before, during and after the proposed ground-disturbing activity.
    - Monitoring for tree tobacco can be completed by any staff, such as groundskeeper or regular maintenance crew, provided with picture placards of tree tobacco at different life stages.

Seabirds

Hawaiian seabirds may traverse the project area at night during the breeding season (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

Measures to avoid and minimize potential project impacts to seabirds:

- Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

4.1.5 Wetlands

The USFWS National Wetland Inventory, Wetlands Mapper (USFWS, 2017b) did not identify any wetlands in the project area. The nearest wetland is a freshwater forested /shrub wetland approximately a 1/4 mile to the north of the Site. The Wetlands Mapper figure is presented as Figure 8.

4.1.6 Water Resources

Groundwater

The Maui Department of Water Supply (DWS) provides public water service for the Kihei-Makena region. The County water system serves the communities of Waihee and Waiehu to the north, Wailuku, Kahului, Paia to the east, and Maalaea-Kihei-Makena to the south. Approximately 75 percent of the water supply to the Central Maui System is withdrawn from the Iao Aquifer with the balance supplied from the adjacent Waihee Aquifer to the northwest. Potable water for South Kihei is provided by the County's Central Maui System which supplies water to two concrete reservoirs and one concrete tank. The site has obtained its water lateral from the DWS.

Chapter 14.12, Water Availability of the Maui County Code mandates that verification of a long-term reliable supply of water is required before building permit issuance or subdivision approval. However, within section 14.12.030 Exemptions, affordable housing projects are exempt from this requirement as follows, (E) "Residential Workforce housing units developed by a qualified housing provider pursuant to chapter 2.96 of this code, and are within the service area of the department's central or west Maui water system," and (F) "Residential development projects with one hundred percent affordable housing units and are within the service area of the department's central or west Maui water system". Total potable allocation from the BWS system is limited to 30,000 gpd or 250 gpd per multi-family unit.

The Site overlies the Makawao aquifer system of the Central aquifer sector. The Makawao aquifer system consists of an upper and lower aquifer system. The upper system is described as a high level (fresh water not in contact with sea water), unconfined (where water table is upper surface of saturated aquifer), perched (aquifer on an impermeable layer) aquifer (Mink and Lau, 1990). It is classified as a potentially used, fresh drinking water source (<250 milligrams per liter [mg/l] chloride [Cl-], replaceable, and highly vulnerable to contamination (Mink and Lau, 1990). The lower system is described as a basal (fresh water in contact with sea water), unconfined (where water table is upper surface of saturated aquifer), flank (horizontally extensive lavas) aquifer (Mink and Lau, 1990). It is classified as a currently used, low salinity drinking water source (250-1,000 mg/l Cl-, irreplaceable, and moderate vulnerable to contamination (Mink and Lau, 1990).

Per the Environmental Database Resource (EDR) report, there are numerous USGS wells within a 1-mile radius of the Site. No water wells are listed on the Federal Public Water Supply System Information database and four (4) water wells identified in the State Database Well Information are located within a 1-mile radius of the subject property (EDR, 2015e). The Site is down-gradient of the Underground Injection Control (UIC) line (Figure 9) as such; the underlying aquifer is not considered a drinking water source and a wider variety of wells are allowed. Injection wells do require a UIC permit or permit exemption and permit limitations are imposed.

Surface Water

There are no streams or surface water features at the Site. The nearest surface water bodies are the Pacific Ocean to the west and an unnamed stream to the north.

4.1.7 Climate and Air Quality

The project area lies in the dry, arid region of Maui's southwest coast. Rainfall indicators, according to Price (1983:62), show that the project area receives no more than five inches per year, with accumulations occurring mostly during the months of December and January. Unlike lower, coastal elevations, higher elevations of Pulehu Nui Ahupua`a receive more precipitation due to fog drip and lower temperature climates. The frequency of the project area receiving upland wash is based on the amount of water accumulated upslope and the available water drainages created within or near the project area.

The Hawaii State Department of Health (HDOH) maintains air monitoring locations throughout the state. Air quality in the state is most affected by proximity to the volcano. Monitoring stations on the Big Island with communities near the volcano record higher levels of sulfur dioxide (SO2) and particulate matter (PM) at 2.5 microns or less, with regular exceedances of the National Ambient Air Quality Standards (NAAQS) for SO2 and occasional exceedances of the NAAQS for PM2.5. The Environmental Protection Agency (EPA) considers the volcano a natural, uncontrollable event, therefore the state requests exclusion of these NAAQS exceedances from attainment/non-attainment determination. Excluding the exceedances due to the volcano, in 2015 the State of Hawaii was in attainment of all NAAQS. (HDOH Annual Summary 2015 Air Quality Data).

Air quality in the Kihei area is relatively good. Non-point source emissions (automobile) are not significant enough to generate a high concentration of pollutants. Good air quality can also be attributed to the Kihei region's Trade Wind exposure, which quickly disperses concentration of emissions.

Both Federal and State standards have been established to maintain ambient air quality. Seven parameters are regulated: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone, and lead. The Kihei area is currently in attainment of all criteria pollutants established by the Clean Air Act, as well as State Ambient Air Quality Standards (SAAQS).

4.1.8 Noise

Ambient noise in the project area is relatively low and is generally attributable to traffic along Kaiwahine and Hale Kai Streets. Noise impacts from construction-related activities are regulated under the HAR, HDOH, Title 11, Chapter 46, Community Noise Control. The project area is a residential zone, and as such falls into District Class A under the HDOH regulations, with a maximum day (7:00 a.m. to 10:00 p.m.) and night (10:00 p.m. to 7:00 a.m.) sound level

threshold of 55 decibels (dBA). District Class A also covers areas zoned as military and federal preservation land, conservation, open space and public space. Table 2 lists sound exposure levels (SEL) associated with typical equipment, in varying operating modes.

Table 2: Typical Equipment Sound Levels

Equipment	Sound Level (in dBA) Under Indicated Operational Mode		
	Idle Power	**Full Power**	**Moving Under Load**
Dozer	63	74	81
Dump Truck	70	71	74
Excavator	62	66	72
Forklift	63	69	91
Front-end Loader	60	62	68
Grader	63	68	78
Sweeper	64	76	85
Tractor-Trailer	67	78	77

4.1.9 Solid Waste

Weekly, residential, solid waste collection in the area is provided by the County of Maui, Department of Public Works and Environmental Management. The Department's Residential Collection program collects and disposes of residential waste in 3 major districts: Wailuku (including Kahului and South Maui), Makawao (including Kula, Pukalani, Paia, and Haiku) and Lahaina (West Maui).

The County provides weekly garbage pick-up for a fee. The Central Maui Landfill, which is in the Wailuku-Kahului Community Plan region, receives residential solid waste from the area. Green waste is collected by Eko Compost, which is located at the Central Maui Landfill. Construction and demolition (C&D) waste is accepted at the privately-operated C&D Landfill in Ma'alaea. Plastic, glass, metal, cardboard, and newspaper can be recycled when left at various drop-boxes throughout the County. Green waste recycling is provided by several private organizations.

4.1.10 Hazardous Waste

ERA performed a Phase 1 Environmental Site Assessment (ESA) at the request of the Applicant. The findings are summarized below:

- The subject Site was not listed on any of the databases searched by EDR, which provides a review of federal, state, local lists and available files of reported hazardous waste sites and hazardous substance/petroleum product sources and releases.
- The Site is unpaved and undeveloped with vegetation covering the majority of the parcel. No chemicals or hazardous materials were observed on the subject property. No noticeable spills or evidence of oil contamination was noted during the site reconnaissance. Vegetation on the Site and surrounding property was found to be dry and withered, most likely associated with the arid condition of the area. No unusual odors or staining were noticed indicating a potential environmental condition.

ance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

0 500 1,000 1,500 2,000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0580F

FIRM

FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

PANEL 580 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MAUI COUNTY	150003	0580	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
1500030580F

MAP REVISED
SEPTEMBER 19, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kaiwahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Flood Insurance Rate Map FIGURE NUMBER: 6

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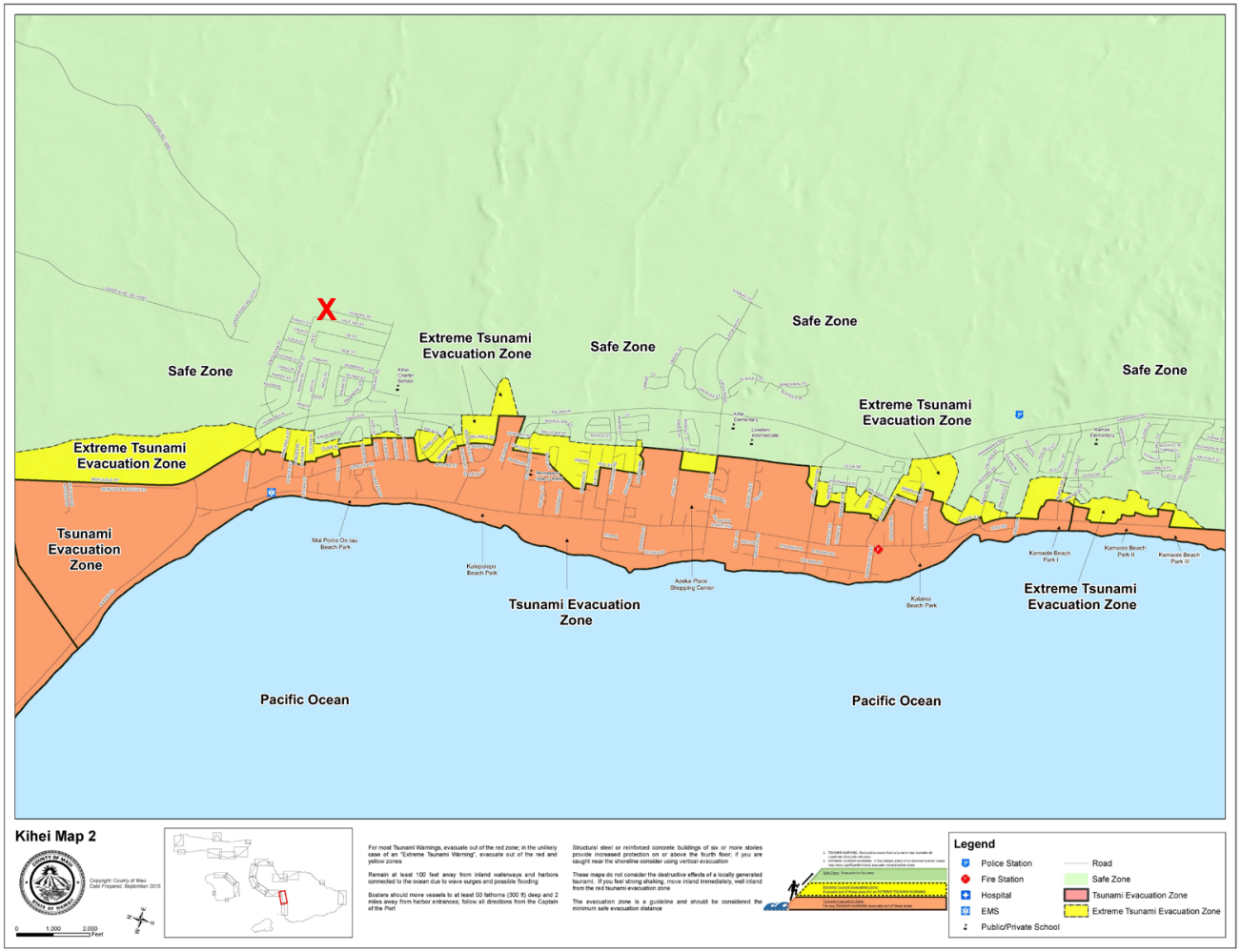

Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kaiwahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Tsunami Evacuation Zone Map FIGURE NUMBER: 7

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U.S. Fish and Wildlife Service
National Wetlands Inventory

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Environmental Risk Analysis

PROJECT NAME:
Environmental Assessment
Kaiwahine Village
Kihei, Hawaii 96753
TMK (2) 3-8-004-028

FIGURE TITLE: Wetland Map

FIGURE NUMBER: 8

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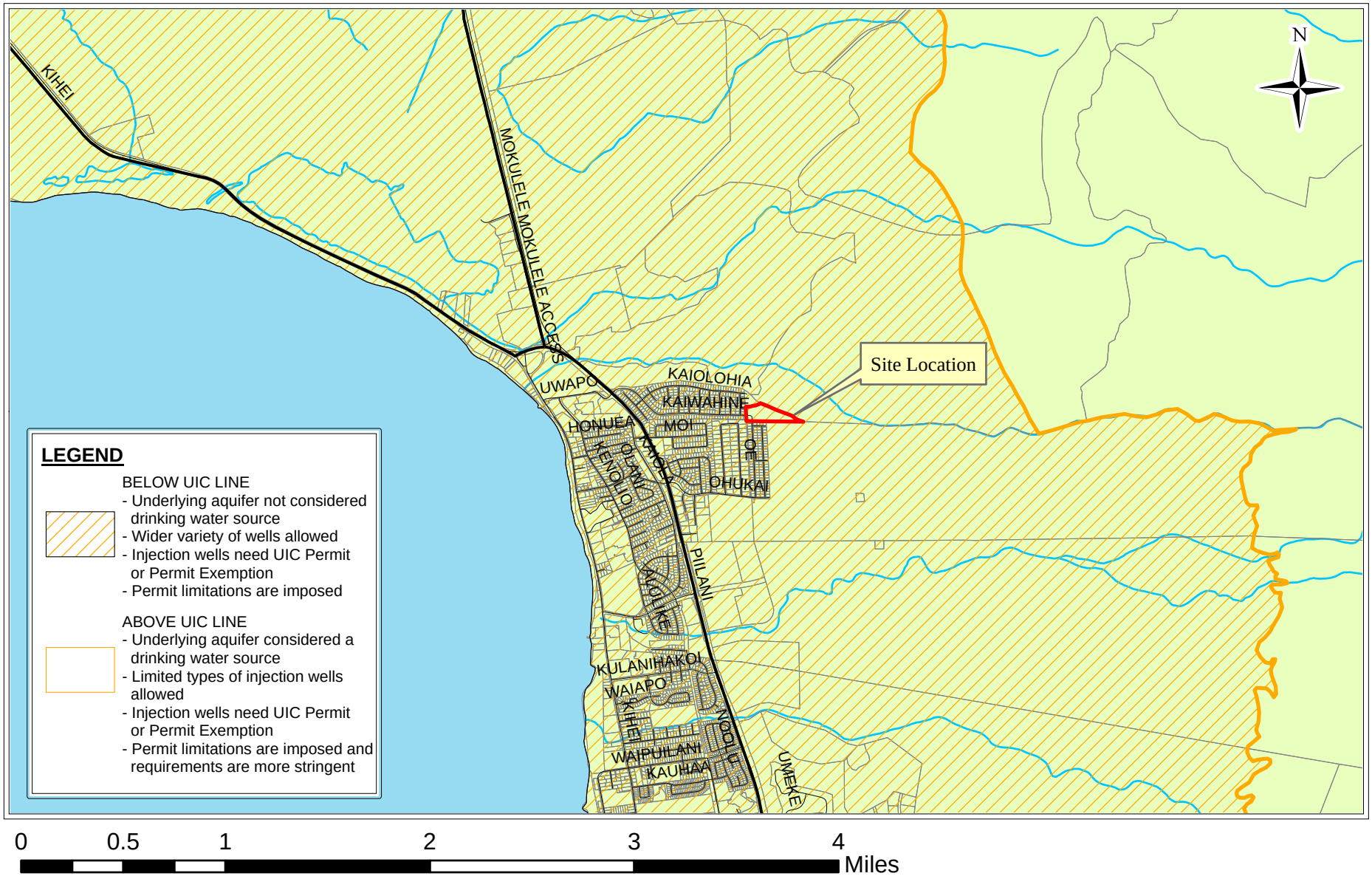

Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kaiwahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Underground Injection Control Map FIGURE NUMBER: 9

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- Various items including trash and construction debris were noted on the Site. ERA did not observe any RECs associated with these items that are subject to further investigation.
- None of the neighboring properties are anticipated to affect the environmental condition of the subject Site. Undeveloped property surrounds the subject site to the north and east; Hale Piilani Park borders the northwest boundary of the Site; Residences along Kaihoi Street and Kaiwahine Street bound the subject site to the west; Residences along Lauloa Street and Hale Kai Street bound the subject site to the south.
- Aerial photographs from 1951 through 2013 indicate that TMK (2) 3-8-004-028 has not been developed. The 1975 photo depicts structures located on the properties southwest of the Site. The 1992, 2000, and 2013 views depicts the area as it appears today. American Society for Testing Materials (ASTM) defined RECs were not noted from review of the historical aerial photographs.
- Interviews with persons familiar with the Site history and uses were conducted to ascertain any information that may be indicative of potential RECs in connection with the Site. According to the information obtained in the interviews, the Site was likely used for cattle grazing and has never been developed. ASTM defined RECs were not noted from review of the historical use of the Site.
- There are no underground storage tanks (USTs) located on the Site of on properties adjacent to the Site. No leaking underground storage tank (LUST) sites were located directly adjacent to the Site.
- A Hawaii Release Notification and State Hazardous Waste Sites List (SHWS) database search noted a single entry. The site is listed as Selland Construction Inc, Kihei Baseyard located at 454 Ohukai Road. The site is listed as low priority fuel and oil contamination and is identified as S105262951. It is approximately 124 feet away and is at a lower elevation from the subject Site. Site cleanup was initiated and completed. Based on the remediation efforts and the distance and topography between the location of the Selland Construction Inc., Kihei Baseyard property and the project site, the Kihei Baseyard does not have a reasonable potential to adversely impact the environmental condition of the subject property.
- ERA did not observe any electrical transformers on or adjacent to the subject Site during the site reconnaissance. Material Energy Chemicals and Other (MECO) was queried and confirmed no electrical transformers were identified for the subject Site and adjacent parcels.

Pre-consultation received from the State of Hawaii Department of Health, Maui District Health Office in a letter dated 12/18/17 (Appendix E), noted the land was previously used for sugarcane production. Agricultural lands previously used for sugarcane are known to have arsenic, pesticides, etc. (HDOH, 2011).

4.2 Social Environment

4.2.1 Land Use Considerations and Zoning

The County of Maui, Planning Division, indicates the Site Land Use Ordinance (LUO) Zoning Designation is R-1 Residential. The Site is not located in a Special District or Special Management Area.

4.2.2 Archaeological and Cultural Considerations

The project site is currently vacant. The subject property has been partially disturbed by recent illegal dumping and modern ranching activities. To prevent further illegal dumping on the subject parcel, a chain link fence has been erected around the project site.

An Archaeological Inventory Survey Report was prepared for the subject property. See Appendix B, "Archaeological Inventory Survey". Between November 17th and 19th of 2005, work was performed by Scientific Consultant Services (SCS). An Archaeological Inventory Survey Report was completed by SCS and received by the State Historic Preservation Division (SHPD) on February 22, 2006. During field work SCS discovered two historic sites. The first site was a World War II related rock alignment. The second was a traditional Hawaiian agricultural site with small amounts of habitation related materials. Both sites were documented and designated as significant under Criterion D, for information content only. SCS and SHPD concurred that no further work was warranted on the subject parcel. The May 22, 2006 letter from SHPD further states that "Development of the project areas will have 'no effect' on significant historic sites." The present project area had not been subject to archaeological evaluation prior to 2005.

A review of the Proposed Kihei Residential Project Final Environmental Impact Statement (FEIS) (Munekiyo & Hiraga, Inc. 2008) discusses a Cultural Impact Assessment performed for an abutting parcel located to the north of Kaiwahine Village. The FEIS noted the following:

> *"The current project area is situated along the southern edge of Waiakoa Gulch, in what was considered the transitional area between the mauka (inland) and makai (coastal) settlement areas. Based on the settlement pattern in adjacent ahupua'a and the knowledge shared by those interviewed and consulted during the course of the cultural assessment, it appears that the project area may have sustained a small, seasonal population during traditional Hawaiian times.*
>
> *The waters of Waiakoa Gulch, although only seasonably available, may have supported limited freshwater aquatic resources, as well as limited agriculture during the rainy season. As a whole, however, the primary resources would have come from the abundant marine resources of the coastal region, in addition to agricultural crops from the mauka region of the ahupua'a.*
>
> *Decades of continuous historic and modern agriculture and ranch activities have heavily modified stream flow and consequently left no evidence of traditional cultural practices within the project area.*
>
> *As part of the cultural assessment, two (2) informant (kama' aina) interviews were conducted to gain an understanding of likely cultural practices which occurred in the vicinity. Mr. Leonard Kimokeo Kapahulehua explained that he was not aware of cultural practices in the present day nor of the existence of heiau (temples) or ahu (shrines) in the area. As a result, Mr. Kapahulehua did not feel that there would be any cultural impacts associated with residential development.*
>
> *Mrs. Paula Kalanikau was also interviewed and, like Mr. Kapahulehua, did not recall significant cultural practices in the area, outside of use of the coastal fishing grounds. Mrs. Kalanikau noted canoe club related activities in the last few decades which occur to the west of the project site along the shoreline. However, in the direction of the project site*

from the shoreline area, Mrs. Kalanikau recalled only a multitude of kiawe trees and no significant cultural practices.

Based on the information gathered during the cultural assessment, residential expansion into the lands comprising the project area will have minimal impact upon Native Hawaiian cultural resources within the immediate vicinity."

4.2.3 Circulation and Traffic

The proposed project is located east of Hale Piilani subdivision, at the east end of Kaiwahine Street. Access to and egress from the project will be via Kaiwahine Street, which intersects Piilani Highway and Hale Kai Street, and connects with Ohukai Street. There are existing traffic signals at both the Kaiwahine Street and Ohukai Road intersections with Piilani Highway. Kaiwahine Street, located to the west of the subject property, is an east-west collector road which connects Piilani Highway and the western boundary of the subject property. Ohukai Road is another County-owned east-west roadway which connects South Kihei Road to Piilani Highway and other residential and commercial properties to the east of Piilani Highway. Hale Kai Street is a two-lane, north-south roadway which connects Kaiwahine Street and Ohukai Road. Mokulele Highway is the primary roadway linking Central Maui and South Maui. It is a four-lane highway with a north-south orientation which is owned and maintained by the State. Piilani Highway is the primary roadway linking Kihei, Wailea and Makena to other areas on Maui. Piilani Highway is a four-lane highway undivided highway with a north-south orientation, which is also owned and maintained by the State. South Kihei Road is a two-lane roadway which parallels Piilani Highway along the coastline and serves most of the commercial and residential communities.

The July 15, 2010 traffic impact assessment prepared by Phillip Rowell and Associates concluded the following:

- Project generated traffic represents approximately 4.2% to 7.3% of peak hour traffic growth. The remaining growth is the result of background traffic growth and traffic generated by other development projects.
- Project generated traffic will represent 2.0% or less of the total approach volume at the study intersections between 2010 and 2015.
- The intersection of Piilani Highway at Ohukai Street will operate at Level-of-Service D during both the morning and afternoon peak hour, without and with project generated traffic.
- At the intersection of Piilani Highway and Kaiwahine Street & Uwapo Road, all lane groups, as well as the overall intersection, will operate at Level-of-Service C, during both peak hours, without and with project generated traffic.
- The intersection of Piilani Highway at North Kihei Road will operate at Level-of-Service C during both peak periods, without and with project generated traffic.
- Recommendation to install a separate west-bound to south-bound left turn lane.

4.2.4 Social Factors and Community Identity

Maui County experienced strong population growth during the past two (2) decades. The Year 2000 resident population expanded from 1980's 70,991 to 128,241. This growth represents an 80.6 percent increase. Population growth is expected to continue with the year 2020 resident population projected at 171,790. Visitor counts have increased even more dramatically, with the average daily visitor count increasing from 15,363 in 1980 to 43,854 in 2000. This growth

represents a 285 percent increase in visitor per day. Thus, the County's de facto population, which includes residents and visitors, grew from 85,803 in 1980 to 168,544 in 2000, representing an 88 percent increase. The North Kihei area has also expanded in population. The 1990 resident population of 12,869 has increased to 19,843 in 2000. This represents an increase of 54 percent over ten years.

4.2.5 Economic Considerations

Historically, vast potentially habitable areas of Maui and significant water resources have been devoted to agriculture. Until the past decade, the long-term viability of the sugar industry was unquestioned and the business remained a major employer and tax payer. Thus, cane land was reclassified for urban uses only after lengthy public agency reviews and negotiation with labor unions. The long-term impact of this policy, in the face of unmet resident housing needs and off-island capital driven visitor-oriented land use demands, has been high appreciation in real estate prices on Maui since the early 1970s, primarily due to the high demand versus low supply of available residential land.

Per the Hawaii Housing Planning Study (2016 Update), between 2005 and 2015 the population in the County of Maui grew by 19.3%, the highest rate of population growth in the state. 39% of Maui residents were inclined to move to a new home, within the state in the next five years (this is called "Effective Demand").

In Maui County, median prices for single-family units peaked at $690,00 in 2006, and had declined to $570,000 in 2016. Despite the downfall, the average monthly mortgage payment for a single-family unit was ranked the highest in the state, with 21.4% of households living in overcrowded or doubled-up conditions in 2011.

4.2.6 Recreational and Public Facilities

The County Department of Parks and Recreation (DPR) operates and maintains a total of 16 parks in the South Maui region, including numerous beach parks as well as community recreational facilities such as the Kalama Park and Kihei Aquatic & Community Center. In addition, various privately-owned golf courses are open to the public within the Kihei, Wailea and Makena area.

The Hale Pi'ilani Park is an existing county park directly North of the proposed Kaiwahine Subdivision. Hale Pi'ilani Park is open from 7:00 am to 8:00 pm daily and its facilities include baseball/softball fields, basketball courts, a soccer field, a playground, and 13 paved parking stalls.

There are various private medical offices and facilities in the up-country area, however Maui Memorial Medical Center is located in Wailuku, approximately 10.7 miles from the project site. It is the island's only acute care hospital, and has a 251-bed capacity.

The County Department of Police is headquartered in Kahului. The department's South Maui Patrol District is one of six (6) such districts in Maui County. A new police station for Kihei has been proposed.

The County Department of Fire Control has 14 stations throughout the County including ten (10) stations on the island of Maui. In South Maui, the department has two (2) stations, the first is in central Kihei on the corner South Kihei Road and the second is on Waimahaihi Street and in the Wailea area on Kilohana Drive and Kapili Street.

The Site is in the Central Maui School District, and is therefore subject to payment of school impact fees, as the agreement runs with the land. The existing agreement with the Department of Education (DOE) is to pay $284,520 for 120 multi-family units ($2,371/unit). The DOE Facilities Division last compiled school enrollment for the 2008-2009 school year. Except for Maui High School, most of the schools were under capacity through the projected Year 2015 enrollment.

4.2.7 Visual and Aesthetic Resources

The subject property is located mauka of Pi'ilani Highway, between elevations of 98 to 142 feet above mean sea level. The vacant property is sparsely vegetated with Kiawe Trees, various shrubs, weeds and grasses. The infill parcel is in an area of residential development and has remained vacant because of needed water infrastructure upgrades. There are no publicly identified and protected view planes in the project vicinity.

4.2.8 Infrastructure Systems and Utilities

There are existing underground electrical, telephone and cable TV distribution systems in the Hale Piilani Subdivision. Overhead electrical, telephone and cable TV distribution systems exist within the Ohukai Subdivision. The project will connect to the existing overhead utilities along Hale Kai Street and the underground utilities along Kaiwahine Street. The onsite electrical, telephone and cable TV distribution systems in the subject project will be installed underground. Street lights will be installed along the proposed Kaiwahine Street extension at intervals to be determined by the electrical engineer.

A Preliminary Engineering Report (PER) was prepared for the project. See: Appendix C, PER. The following systems are discussed:

- Drainage - The subject property gradually slopes in a westerly direction. Elevations at the site ranging from approximately 142 feet amsl at its eastern point to approximately 98 feet amsl along its western boundary with an average slope of approximately 2.9%. Surface runoff on the site flows in a mauka-makai direction toward the Hale Pi'ilani Subdivision. The drainage system for that subdivision traverses Kaiwahine Street, across Pi'ilani Highway, along Uwapo Road, and outlets at the rock pier near the former Suda Store. It is estimated that under existing conditions a 50-year storm for the project site would generate 6.13 cubic feet per second of surface runoff (cfs).
- Water - Refer to: Appendix C, "Preliminary Drainage Report". The 36-inch Central Maui Domestic Water transmission line runs along the western boundary of the subject property. Existing 8-inch waterlines run along Kaiwahine Street and Hale Kai Street. A 2.0-million-gallon concrete water tank to the east of the project site provides storage for the area, at an elevation of 220 feet. The source of water for the area is the Mokuhau wells in the Happy Valley area of Wailuku.
- Sewer Lines and Wastewater - There are existing sewer lines along Kaiwahine Street with sewer manholes in the subject property. An 8-inch sewer line is located along Kaiwahine Street which transports wastewater to South Kihei Road. Wastewater from North Kihei is transported to a sewer pump station located at Kalama Park. Wastewater collected from the Kihei area is transported to the Kihei Wastewater Treatment Plant located mauka of Piilani Highway on Welakahao Road.

Domestic water and fire flow for the subdivision will be provided by the County water system. There are existing 8" waterlines on Kaiwahine Street and Hale Kai Street. Off-site water system improvements will be designed and constructed in accordance with DWS standards and requirements.

In accordance with the Department of Water Supply's Domestic Consumption Guidelines for a multi-family residential development, the average daily demand for 120 units is approximately 67,200 gallons per day. This averages 560 gallons/unit, which is approximately 35,840 gallons per day for 120 units. Fire flow demand for the residential district is 2,000 gallons per minute for a 2-hour duration. Fire hydrants will be installed with a maximum spacing of 250 feet.

According to the Wastewater Reclamation Division, County of Maui, the subject subdivision is located within the Kihei Assessment Area 3. The County is assessing sewer fees of $1,743.00 per multi-family unit for the collection system upgrade and $1,185.75 per multi-family unit for the treatment plant facility expansion.

4.2.9 Environmental Justice

The EPA defines environmental justice as, "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (EPA 2012). It goes on to clarify that "no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies." EPA guidance states that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low- income populations in the United States and its territories, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of Northern Mariana Islands."

Minority populations are "identified where either: (a) the minority population of the affected area exceeds 50% or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis" (EO 12989). Minority populations include populations that report their ethnicity as something other than non-Hispanic White alone, including Native Hawaiian or other Pacific Islander, Asian, Black or African American, Hispanic or Latin, American Indian, or Alaska Native (U.S. Census Bureau 2011); specifically, for this EIS/OEIS, minority populations are primarily Pacific Islanders (Chamorro and Carolinian) and Asians.

Low-income populations "should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty" (EO 12989). The Bureau of Census further defines poverty areas as "census tracts or block numbering areas where at least 20% of residents were below the poverty level."

Children are defined as those individuals under the age of 18 years old (EO 13045).

4.2.9.1 Environmental Justice and the Protection of Children

According to the 2010 U.S. Census Bureau, the Kihei area on the island of Maui is 9.28 square miles in size with approximately 21,000 residents. The population in Maui County is predominately white, at almost 35%. About 29% are Asian, and 24% are more than two races. As defined by the Council on Environmental Quality guidelines, any area where 50% or more of the population is minority, then it is considered a minority population area. Therefore, Maui County is not considered a minority population area. Approximately 22% of the Kihei population is made up of children less than 18 years of age. There is a higher than national average rate of high school graduates or higher for persons age 25 years or more, Kihei is at 93%. Over 26% of persons age 25 years or older have a Bachelor's degree or higher education level, which is close to the national average.

4.2.9.1.2 Low-income Population Areas

In the Kihei area, 9.6% of the population is below the poverty line as defined by the 2010 Bureau of Census, as compared to the national average of 12.7%. Maui County is at 10.7%. However, the percentage of owner-occupied housing is much lower in Kihei than the national average. Kihei is at approximately 46%, whereas the national average is at nearly 64%. Likewise, the median cost of renting is about $1,400 as compared to $928.

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SECTION 5 ENVIRONMENTAL CONSEQUENCES AND PROPOSED MITIGATION MEASURES

Potential impacts of Alternative I: No Action and Alternative II: Proposed Action, are described in this section of the report. Impacts are evaluated on whether they constitute a "significant effect" on a particular environmental setting. Impacts are described as having No Impact, Significant Adverse Impact or Beneficial Impact depending on the outcome to the environment. The terms impact and effect are used synonymously in this EA. Impacts may apply to the full range of natural, aesthetic, historic, cultural and economic resources. The following subsections define key terms used throughout Section 5.

Significance Criteria

A "significant effect" is defined by HRS Chapter 343 as "the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals as established by law, or adversely affect the economic welfare, social welfare, or cultural practices of the community and State."

Beneficial Versus Adverse

Impacts from the Proposed Action may also have beneficial or adverse effects to the environment. Beneficial impacts are those that would favorable outcomes and add value to the environment. Adverse impacts are those that produce detrimental effects and cause harm to the environment.

Cumulative Impacts

Cumulative impacts are two or more individual effects which, when considered together, compound or increase the overall impact. Cumulative impacts can arise from the individual effects of a single action or from the combined effects of past, present, or future actions. Thus, cumulative impacts can result from individually minor but collectively significant actions taken over a period of time. The cumulative impacts of implementing the Proposed Action along with past and reasonably foreseeable future projects proposed were assessed based upon available information. Cumulative impacts are discussed in Section 5.3.

Mitigative Measures

Mitigative measures are defined as measures taken to avoid, reduce and compensate for adverse impacts to a resource. Mitigative measures are identified and discussed for each alternative, where relevant. In this EA, mitigative measures are provided to reduce adverse impacts when levels of impact are more than minor and to ensure levels of impact are not significant. Only those mitigative measures that are practicable have been identified.

5.1 Physical Environment

5.1.1 Topography and Geology

Alternative I: No Action Alternative

No significant adverse impacts to the topography or geology are expected to result from Alternative I. The Site would remain the same as there would be no construction.

Alternative II: Construction of Affordable Housing Development

No significant adverse impacts to the topography or geology are expected to result from Alternative II. As the Site is currently flat, no significant changes to the topography are necessary for construction. Construction and operational activities would follow existing topography. The State of Hawaii does not contain Coastal Barrier Resources System (CBRS) units (USFWS 2017). The Site is not located in a Coastal Zone and therefore is not a special management area (SMA).

5.1.2 Soils

Alternative I: No Action Alternative

No significant adverse impacts are anticipated for Alternative I. Site conditions would remain the same.

Alternative II: Construction of Affordable Housing Development

Alternative II could have a potential significant adverse impact to soils because of construction activities (i.e., grubbing, grading, excavation and trenching) that disturb the earth and soils. Exposed soils are susceptible to erosion during periods of heavy rain or wind. Short-term adverse impacts would be minimized to less than significant or avoided by implementing temporary erosion control measures during construction activities.

A National Pollutant Discharge Elimination System (NPDES) permit for Construction Storm Water Activities will be obtained from the DOH. During site preparation, storm runoff from the community site will be controlled in compliance with the County's "Soil Erosion and Sediment Control Standards." Typical mitigation measures include appropriately stockpiling materials on-site to prevent runoff and building over or establishing landscaping as early as possible on disturbed soils to minimize length of exposure.

5.1.3 Natural Hazard

Alternative I: No Action Alternative

No significant adverse impacts to natural hazard vulnerability would result from Alternative I as the Site will not change.

Alternative II: Construction of Affordable Housing Development

No significant adverse impacts to natural hazard vulnerability would result from Alternative II. The project area lies approximately 1000 feet above mean sea level and is classified within Flood Zone X, where the risk of flooding would be minimal.

5.1.4 Flora and Fauna

Alternative I: No Action Alternative

No significant adverse impacts to flora/fauna are anticipated due to Alternative I as the site would remain undeveloped.

Alternative II: Construction of Affordable Housing Development

No significant adverse impacts to flora/fauna are anticipated due to Alternative II. USFWS noted 6 threatened or endangered species, or candidates for listing as endangered or threatened

species of concern, are known to exist in the project area. Mitigation measures will be employed to avoid or minimize project impacts to listed species during project construction and occupancy, as applicable. These mitigation measures include, but are not limited to, avoidance, biological monitoring, and training of construction employees to recognize protected species that may potentially be in the vicinity of the project site. Further mitigation measures are provided in the USFWS correspondence (Appendix E).

5.1.5 Wetlands

Alternative I: No Action Alternative

No significant adverse impacts to wetlands are anticipated due to Alternative I as the Site would remain undeveloped.

Alternative II: Construction of Affordable Housing Development

No significant adverse impacts are anticipated under Alternative II. Alternative II, the Proposed Action, would not result in loss or destruction of existing wetland resources as there are no designated wetlands near the Site.

5.1.6 Water Resources

Alternative I: No Action Alternative

No significant adverse impacts to groundwater or surface water would result under Alternative I, the no action alternative. Site conditions would remain the same.

Alternative II: Construction of Affordable Housing Development

No significant adverse impacts are anticipated to groundwater resources assuming implementation of Alternative II, the Proposed Action. Hazardous substances that could adversely affect groundwater are not likely to be introduced or released into the soil given the proposed use of the Site as housing. Water system improvements will be designed and constructed in accordance with DWS standards and requirements, along with water conservation measures. Fire hydrants will be installed with a maximum spacing of 250 feet. The Site is not located on a sole source aquifer. Additionally, to reduce and conserve the consumption of potable water within the subdivision, Ikaika Ohana proposes to drill a well for irrigation purposes. This will result in an anticipated savings of at least 1 million gallons per year of potable water. No significant impact to surface water near the Site is anticipated as a result of construction or operations associated with Alternative II as there are no streams or surface water bodies at the Site. There are no designated wild and scenic rivers in the State of Hawaii.

5.1.7 Climate and Air Quality

Alternative I: No Action Alternative

Alternative I would not have a significant adverse impact to air quality as the existing conditions would remain unchanged.

Alternative II: Construction of Affordable Housing Development

Under Alternative II, potentially significant short-term impacts to air quality from excavation and grading-related activities during construction activities are anticipated. Temporary increases in traffic during the construction phase of Alternative II are also anticipated to increase emissions from combustion as well as increase fugitive dust. Adequate dust control measures, in compliance

with Section 11-60.1-33, "Fugitive Dust", of HAR will be implemented during all phases of construction. A dust control plan and best management practices will be implemented to reduce any impacts to less than significant. This may include but is not limited to watering of roads and trenches during project activities and use of a dust screen which surrounds the project area. Once project construction is complete, impacts to air quality would not be significant.

5.1.8 Noise

Alternative I: No Action Alternative

No significant adverse impacts to noise are expected to occur under Alternative I. Site conditions would remain unchanged.

Alternative II: Construction of Affordable Housing Development

Construction activities at the Site will increase noise levels during this project. Limiting those activities that may increase noise levels to daylight hours will help to minimize noise impacts during construction. HDOH Administrative Rules, Title 11, Chapter 46, "Community Noise Control" regulations will be complied with for the duration of the project. If noise levels exceed allowable levels, stated in Chapter 46 rules, a noise permit will be obtained.

Once the project is completed, no significant increases in noise are anticipated. While overall noise levels would increase due to a rise in area population, increases would only be observed as modest increases in vehicular traffic, mechanical noise (i.e. air conditioning) and voice load. No industrial processes or activities that would contribute to a significant adverse impact to the noise environment are planned under Alternative II.

5.1.9 Solid Waste

Alternative I: No Action Alternative

No significant adverse impacts to noise are expected to occur under Alternative I. Site conditions would remain unchanged. No additional waste would be generated from the construction or operation of the additional facility.

Alternative II: Construction of Affordable Housing Development

Construction activities at the Site will increase solid waste and construction wastes. Waste generated by site preparation will primarily consist of vegetation, rocks, and debris from clearing, grubbing, and grading. Very little demolition material is expected, as the site is essentially vacant. These wastes will be minimized by proper planning of building materials and recycling efforts. A solid waste management plan will be coordinated with the County's Solid Waste Division for the disposal of onsite and construction-related waste material.

Once the project is completed, solid waste generation will be increased over the current conditions. This increase in waste generation would not contribute to a significant adverse impact under Alternative II. In the Public Facilities Assessment Update County of Maui (2007), R.M. Towill Corporation projected that the Central Maui Landfill will have adequate capacity to accommodate residential and commercial waste through the year 2025. This projection was arrived at by multiplying the Maui County's de facto population projections by an estimated number of pounds per person per day of waste generated, and assumes that solid waste generated by commercial and industrial growth will be captured by a corresponding trend in projected population growth.

5.2 Social Environment

5.2.1 Land Use Considerations and Zoning

Alternative I: No Action Alternative

Alternative I would have a direct adverse impact to land use and zoning. The Site is currently undeveloped but is zoned R-1 Residential. The No Action Alternative would not be utilizing the land to its fullest potential.

Alternative II: Construction of Affordable Housing Development

Alternative II would have a significant beneficial impact on land use and zoning. Consistency with its zoning designation would make available additional housing for low income families.

5.2.2 Archaeological and Cultural Considerations

Alternative I: No Action Alternative

No significant adverse impacts are associated with the No Action Alternative as no change to the current infrastructure would occur.

Alternative II: Construction of Affordable Housing Development

Alternative II would involve ground disturbing activities that could potentially have significant adverse impact on historical and archaeological resources. However, these impacts are considered unlikely. In the conclusion of the Archaeological Inventory Survey Report, SCS documented two historic sites (a World War II rock alignment and a traditional Hawaiian agricultural site with small amounts of habitation related materials) and provided SHPD with the recommendation that no further work be done on the subject parcel. On May 22, 2006 SHPD issued a letter to Dr. Michael Dega accepting the findings of the Archaeological Inventory Survey Report, confirming that no further work is warranted on the project site.

A Cultural Impact Assessment performed for a development on an adjacent parcel found that residential expansion into the project area would have minimal impact upon Native Hawaiian cultural resources within the immediate vicinity.

5.2.3 Circulation and Traffic

Alternative I: No Action Alternative

No significant adverse impacts are anticipated under Alternative I. Site conditions would remain the same.

Alternative II: Construction of Affordable Housing Development

No significant adverse impacts are anticipated under Alternative II. A Traffic Impact Analysis Report (TIAR) prepared in July 2010 concluded that the project contributes a small fraction to anticipated traffic volume growth. However, project plans include a restricted access intersection at Kaiwahine and Hale Kai to limit residential traffic from the project onto Hale Kai, while still allowing for connectivity and emergency access. The roadway within the project, which will be the extension of Kaiwahine Street, will consist of a 56-feet right-of-way, 24 feet to 36 feet of pavement, concrete curbs, gutters and sidewalks. Five driveways will be created to access the parking areas from the proposed roadway. Mitigation is also recommended for

background conditions at the intersection of Pi'ilani Highway and Ohukai Street. The recommendation is the installation of a separate west-bound to southbound left turn lane.

During construction activities, access and traffic are anticipated to increase compared to normal Site operations. If access and traffic are impacted because of renovation activities, minimizing impact on traffic and access to less than significant levels can be accomplished by the following:

1) Mobilizing and de-mobilizing construction vehicles and equipment during non-peak traffic hours.

2) Use of temporary traffic control devices, such as signage, barricades, and cones, in accordance with City and County traffic standards; and

3) If necessary, utilize off-duty police to manage traffic.

5.2.4 Social Factors and Community Identity

Alternative I: No Action Alternative

Alternative I would have no impact to the social and community identity. Site conditions would remain unchanged.

Alternative II: Construction of Affordable Housing Development

Construction of housing for low income households is expected to have a significant beneficial impact on the social and community identity of the area. The proposed project will add residential units to the district and assist families who would otherwise have few, if any options, for affordable housing in the area.

5.2.5 Economic Considerations

Alternative I: No Action Alternative

No significant adverse impacts are anticipated under Alternative I. Site conditions would remain unchanged.

Alternative II: Construction of Affordable Housing Development

No adverse impacts to the economy near the Site are anticipated as a result under Alternative II. The proposed renovations will result in short-term economic benefits for the construction industry. Over the long term, residents of the subdivision will contribute to the economy through the payment of sales and property taxes, as well as the consumption of goods and services from local businesses.

5.2.6 Recreational and Public Facilities

Alternative I: No Action Alternative

No significant impacts are anticipated under Alternative I. Site conditions would remain unchanged.

Alternative II: Construction of Affordable Housing Development

Alternative II is expected to have no significant adverse impact on the recreational and public facilities on the island. The DPR operates and maintains a total of 16 parks in the South Maui region, including numerous beach parks as well as community recreational facilities such as the Kalama Park and Kihei Aquatic & Community Center. There are also privately-owned golf courses open to the public within the Kihei, Wailea and Makena area.

The subdivision will include a 900-square foot "tot lot" on-site, as well as a pedestrian access to the Hale Pi'ilani Park. This county park is directly North of the proposed Kaiwahine Subdivision. Its facilities include fields for baseball, softball and soccer; basketball courts; a playground; and parking stalls.

Water will continue to be provided to the existing recreational and public facilities and their operations will continue as they exist today. In addition, medical facilities, police and fire protection services are nearby. Maui Memorial Medical Center is in Wailuku, approximately 10.7 miles from the project site. There are two fire stations in South Maui and police headquarters in Kahului. The Kaiwahine Village is located within the Central Maui School District and has an existing agreement with the DOE on the amount of payment due for school impact fees.

5.2.7 Visual and Aesthetic Resources

Alternative I: No Action Alternative

There would be no significant adverse impact on the visual resources and aesthetics in or around the project area anticipated with Alternative I as this alternative shall not bring about any changes in the existing conditions.

Alternative II: Construction of Affordable Housing Development

Significant adverse impacts to visual resources are not expected under Alternative II. Construction of the new building structure will not significantly impact public views or protected view planes in the project vicinity. There are no scenic vistas or view planes to obstruct. The areas in the North and East vicinity of the project area are undeveloped.

5.2.8 Infrastructure Systems and Utilities

Alternative I: No Action Alternative

No significant adverse impacts are anticipated under the No Action Alternative. Site conditions would remain unchanged.

Alternative II: Construction of Affordable Housing Development

Alternative II is expected to have little impact on the infrastructure and utilities in and around the project area. The 120-unit development will not tax or significantly impact the current supply, nor will the development increase residential densities requiring stationary aboveground storage containers (of more than 100-gallon capacity containing common liquid industrial fuels or of any capacity containing hazardous liquids or gases that are not common liquid industrial fuels) currently or planned within 1 mile of the Site. There are no hazardous facilities included in the project.

The proposed project will not place substantial demand upon utility services or significantly expand service areas. Electrical and telephone service for the future residential subdivision will be coordinated with Maui Electric Company and Hawaiian Telcom. The project will connect to existing overhead utilities along Hale Kai Street and underground utilities along Kaiwahine Street.

Onsite electrical, telephone and cable TV distribution systems will be installed underground. Streetlights will be installed along the subdivision streets at intervals to be determined by an electrical engineer.

In regards to traffic, no mitigation is recommended for the project itself, which contributes a small fraction to anticipated traffic volume growth.

The proposed project will not impact substantially County solid-waste services.

The proposed project is not expected to result in any significant increase in resident population nor will it significantly extend the existing service area limits for the police and fire departments.

5.2.9 Environmental Justice

Effects related to environmental justice were considered to be significant if implementation of an alternative plan would result in any of the following:

- Induce substantial population growth (either directly or indirectly)
- Displace substantial numbers of existing people or housing
- Substantially reduce employment opportunities or income levels in the area
- Disproportionately affect any particular low-income or minority group
- Disproportionately endanger children in areas within or near the study area

The potential effects related to environmental justice that could result from implementation of the alternatives, measures that would be conducted to mitigate those effects, and the resulting degree of impact are discussed in the following subsections.

Alternative I: No Action Alternative

Long-term, direct, significant adverse effects are anticipated under Alternative I based on the screening criteria defined above. Due to the housing shortage, substantial numbers of people in the Kihei area may not have access to housing. The high cost of rent may also substantially reduce income levels in the area as well as employment opportunities, as the general population may need higher incomes to afford living in the Kihei area. This would disproportionately affect low-income groups. This may also disproportionately endanger children in areas within or near the study area. The children living with families without access to affordable housing may not have a safe, clean, and comfortable place to live.

Alternative II: Construction of Affordable Housing Development

Construction of housing for low income households is expected to have a long term, direct, significant beneficial impact on the Kihei residents and the community. The proposed project will add residential units to the district and assist families who would otherwise have few, if any options, for affordable housing in the area. This is likely to have a positive effect on the community as families will have safe, clean, comfortable living conditions. There may also be an increase in employment opportunities and incomes in the area due to the reasonable cost of housing, thereby increasing spending in the area for local businesses.

5.3 Cumulative Impacts

Cumulative effects are not anticipated as a result of implementing Alternative II. The proposed project represents a logical use of lands entitled for residential uses, within the urban area of Kihei.

While further development in the South Maui area is probable, the Kaiwahine Village is an in-fill of the recognized residential growth boundaries of the region and has been seen as such by the Kihei-Makena Community Plan.

Secondary impacts are those that have the potential to occur later in time or farther in distance, but which are reasonably foreseeable. They can be viewed as actions of others that are taken because of the presence of the project. Secondary impacts from highway projects, for example, can occur because they can induce development by removing transportation impediments to growth.

There are no substantial, adverse, secondary impacts associated with the proposed project. The build-out of 120 affordable units will create minimal impacts upon area infrastructure, as discussed above, and will not generate a need to expand public infrastructure.

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SECTION 6 RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

The purpose of Section 5 is to identify plans and policies that may be applicable to this project and summarize the relationship of the plans and policies to project actions. Additionally, the intent is to revisit these plans and policies to qualify any significant effects from actions proposed in this EA.

6.1 State and County Land Use Plans and Policies

6.1.1 State Land Use

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission (LUC), establishes four (4) major land use districts in which all lands in the state are placed. These districts are designated as Urban, Rural, Agricultural, and Conservation.

On September 21, 2009, the Maui County Council issued an Ordinance granting a District Boundary Amendment for the subject property to the Urban District subject to eight (8) conditions.

6.1.2 Hawaii State Plan

Chapter 226, HRS, also known as the Hawaii State Plan, is a long-range comprehensive plan that serves as a guide for the future long-range development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The Kaiwahine Village is in accordance with the following goals of the Hawaii State Plan:

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations.
- A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- Physical, social, and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring, and of participation in community life.

The Kaiwahine Village is in conformance with the following objectives and policies of the Hawaii State Plan, State Housing Functional Plan, and Act 227, SLH 2016 goal of 22,500 rental units by 2026.

<u>Chapter 226-5, HRS, Objective and Policies for Population</u>

226-5(b)(1), HRS: Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.

226-5(b)(3), HRS: Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.

<u>Chapter 226-6, HRS, Objectives and Policies for the Economy – in General</u>

226-6(b)(6), HRS: Strive to achieve a level of construction activity responsive to, and consistent with, State growth objectives.

Chapter 226-11, HRS, Objectives and Policies for the Physical Environment – Land Based, Shoreline, and Marine Resources

226-11(b)(3), HRS: Take into account the physical attributes of areas when planning and designing activities and facilities.

226-11(b)(8), HRS: Pursue compatible relationships among activities, facilities, and natural resources.

Chapter 226-13, Hawaii Revised Statutes, Objectives and Policies for the Physical Environment – Land, Air, and Water Quality

226-13(b)(6), HRS: Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.

226-13(b)(7), HRS: Encourage urban developments in close proximity to existing services and facilities.

Chapter 226-19, HRS, Objectives and Policies for Socio-Cultural Advancement – Housing

226-19(a)(2), HRS: The orderly development of residential areas sensitive to community needs and other land uses.

226-19(b)(1), HRS: Effectively accommodate the housing needs of Hawaii's people.

226-19(b)(3), HRS: Increase home ownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.

226-19(b)(5), HRS: Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.

226-19(b)(7), HRS: Foster a variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods that reflect the culture and values of the community.

Objective A of the February 2017, State Housing Functional Plan seeks to "increase the supply of permanent rental housing that is affordable and accessible to Hawaii residents, particularly those with incomes at or below 80% AMI." It also seeks "to attain the legislative goal of 22,500 rental housing units by 2026."

The Kaiwahine Village complies with the following priority guidelines of the Hawaii State Plan.

Chapter 226-103, HRS, Economic Priority Guidelines

226-103(1), HRS: Seek a variety of means to increase the availability of investment capital of new and expanding enterprises.

226-103(1)(a), HRS: Encourage investments which:

(i) Reflect long-term commitments to the State;

(ii) Rely on economic linkages within the local economy;

(iii) Diversify the economy;

(iv) Reinvest in the local economy;

(v) Are sensitive to community needs and priorities; and

(vi) Demonstrate a commitment to management opportunities to Hawaii residents.

Chapter 226-104, HRS, Population Growth and Land Resources Priority Guidelines

226-104(a)(1), HRS: Encourage planning and resource management to ensure that population growth rates throughout the State are consistent with available planned resource capacities and reflect the needs and desires of Hawaii's people.

226-104(b)(1), HRS: Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.

226-104(b)(2), HRS: Make available marginal or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.

226-104(b) (12), HRS: Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline conservation lands, and other limited resources for future generations.

6.1.3 Maui Countywide Policy Plan

The Countywide Policy Plan is the first component of the decennial General Plan update. The Countywide Policy Plan acts as an over-arching values statement and provides a policy framework for the Maui Island Plan and Community Plans. The Countywide Policy Plan provides broad goals, objectives, policies, and implementing actions that portray the desired direction of the County′s future.

The Kaiwahine Village is in accordance with the following Countywide Policy Plan goals, objectives, and policies:

GOAL: PROTECT THE NATURAL ENVIRONMENT

Objective: Improve the stewardship of the natural environment

Policy: Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments.

GOAL: EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS

Objective: Reduce the affordable housing deficit for residents.

Policies:

• Ensure that an adequate and permanent supply of affordable housing, both new and existing units, is made available for purchase or rental to our resident and/or workforce population, with special emphasis on providing housing for low- to moderate- income families, and ensure that all affordable housing remains affordable in perpetuity.

• Ensure residents are given priority to obtain affordable housing units developed in their communities, consistent with all applicable regulations.

• Establish pricing for affordable housing that is more reflective of Maui County's workforce than the United States (US) Housing and Urban Development's median-income estimates for Maui County.

• Support the opportunity to age in place by providing accessible and appropriately designed residential units.

Objective: Increase the mix of housing types in towns and neighborhoods to promote sustainable land use planning, expand consumer choice, and protect the County's rural and small-town character.

Policies:

• Promote infill housing in urban areas at scales that capitalize on existing infrastructure, lower development costs, and are consistent with existing or desired patterns of development.

• Develop workforce housing in proximity to job centers and transit facilities.

Objective: Increase and maintain the affordable housing inventory.

Policies:

• Recognize housing as a basic human need, and work to fulfill that need.

• Prioritize available infrastructure capacity for affordable housing.

• Minimize the intrusion of housing on prime, productive, and potentially productive agricultural lands and regionally valuable agricultural lands.

GOAL: IMPROVE PHYSICAL INFRASTRUCTURE

Objective: Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.

Policies:

• Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.

• Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.

GOAL: PROMOTE SUSTAINABLE LAND USE AND GROWTH

MANAGEMENT Objective: Improve land use management and implement a directed growth strategy.

Policies:

• Encourage redevelopment and infill in existing communities on lands intended for urban use to protect productive farm land and open-space resources.

• Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.

6.1.4 Kihei-Makena Community Plan

Within Maui County, there are nine (9) community plan regions. From a General Plan implementation standpoint, each region is governed by a Community Plan which sets forth desired land use patterns, as well as goals, objectives, policies, and implementing actions for a number of functional areas including the project site is located within the Kihei-Makena Community Plan region.

The project site is designated for Single Family residential uses in the Community Plan.

The Kihei-Makena Community Plan was adopted in 1985 and updated in 1998. Even though the project is seeking exemption from the single- family designation, the proposed action is in accord with the following Kihei-Makena Community Plan goals, objectives, and policies:

LAND USE GOAL

A well-planned community with land use and development patterns designed to achieve the efficient and timely provision of infrastructural and community needs while preserving and enhancing the unique character of Ma`alaea, Kihei, Wailea and Makena as well as the region's natural environment, marine resources and traditional shoreline uses.

Objectives and Policies

• Identify priority growth areas to focus public and private efforts on the provision of infrastructure and amenities to serve existing residents and to accommodate new growth.

• Establish a distribution of land uses which provides housing, jobs, shopping, open space, and recreation areas in close proximity to each other to enhance Kihei's neighborhoods and to minimize dependence on automobiles.

• Encourage the establishment of single-family and multi-family land use designations which provide affordable housing opportunities for areas which are near infrastructure systems and other urban services. infrastructure-related parameters.

CULTURAL RESOURCES GOAL

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

Objectives and Policies: Identify, preserve, protect and restore significant historical and cultural sites.

HOUSING AND URBAN DESIGN GOAL

A variety of attractive, sanitary, safe and affordable homes for Kihei's residents, especially for families earning less than the median income for families within the County. Also, a built environment which provides complementary and aesthetically pleasing physical and visual linkages with the natural environment.

Objectives and Policies:

• Provide an adequate variety of housing choices and range of prices for the needs of Kihei's residents, especially for families earning less than the median income for families within the County, through the project district approach and other related programs. Choices can be increased through public/private sector cooperation and coordinated development of necessary support facilities and services.

• Implement landscaped setbacks for future multi-family and commercial areas. Developments shall provide space for landscaped pedestrian ways and bikeways.

• Incorporate the principles of Xeriscaping in all future landscaping.

• Encourage the use of native plants in landscaping in the spirit of Act 73, Session Laws of Hawaii, 1992.

6.1.5 County Zoning

The project site is zoned R-1 Residential by the County of Maui. The applicant is seeking to develop the property in accordance with the standards of the A-1 Apartment district instead.

6.2 Necessary Permits and Approvals

The following approvals may be required for the implementation of the project. All approvals will be obtained in accordance with approving agency guidelines.

6.2.1 State of Hawaii

(a) Land Use District Boundary Amendment from Agricultural to Urban – Approved per Ordinance No. 3682, Bill No. 69 (2009)
(b) Zoning District Amendment from Agricultural to R-1 Residential (Conditional Zoning) – Approved per Ordinance No. 3683, Bill No. 70 (2009)
(c) Chapter 343, HRS, environmental review
(d) Department of Health
- Chapter 46, HAR – noise permit, as required
- Chapter 11-23, HAR – Underground Injection Control permit for the use of drainage injection wells to handle discharges of storm water runoff.
- Chapter 11-55, HAR – NPDES permit for construction stormwater discharges

(e) Chapter 6E, HRS, State Historic Preservation Division - "Approved" per letter dated May 22, 2006.

6.2.2 County of Maui

(a) Building Permits for infrastructure improvements
(b) Grading Permit for mass grading
(c) Subdivision Approval
(d) 201H Application for Kaiwahine Village - The proposed project will be processed under the Section 201H-38, HRS process for affordable housing projects. This process allows a development to be exempted from certain requirements in order to facilitate and expedite the provision of affordable housing. The Kaiwahine Village will require exemptions from Title 18, Maui County Code, Subdivisions and Title 19, Maui County Code, Zoning, to allow the development of multi-family units on lands zoned for single-family residential uses.
(e) Part 50 and 58 Environmental Review with HTF Environmental Provisions under 24 CFR §93.301(f)(1) – The proposed project will be combining HOME and HTF funds. Compliance procedures are listed in Appendix D.
- Coastal Barrier Resources
- Coastal Zone Management
- Sole Source Aquifers
- Endangered Species
- Wild and Scenic Rivers
- Explosives and Hazards
- Environmental Justice

SECTION 7 FINDINGS AND REASONS SUPPORTING AGENCY DETERMINATION

In accordance with the provisions set forth in Chapter 343, HRS, this EA has preliminarily determined that the project will not have significant adverse impacts on the environment. As such, a FONSI is anticipated for the Proposed Action. Projected impacts will be temporary and will not adversely impact the environmental quality of the area.

A review of the "Significance Criteria" used as a basis for the above determination is presented below. An action is determined to have a significant impact on the environment if it meets any one of the thirteen (13) criteria.

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

Alternative II commits 9.289 acres of vacant land designated for "Urban", "R-1 Residential" use for affordable family rental housing. Two sites were documented and designated as significant under Criterion D, for information content only. There are no archaeological sites to be preserved, no evidence of past or present use for Hawaiian cultural practices, resources, or beliefs, or proposed or final critical habitat located within the property. However, archaeological monitoring will be instituted during all ground-disturbing construction-related activities. In accordance with HRS Section 6E-43.6 and Chapter 13-300 HAR, if any significant cultural deposits or human skeletal remains are encountered, work will stop in the immediate vicinity and SHPD will be contacted to establish the appropriate protocols and level of mitigation.

(2) Curtails the range of beneficial uses of the environment;

Alternative II will not curtail the range of beneficial uses of the environment. This community is intended to provide much needed affordable housing to the families in the 60% or less of the AMI in the South Maui region. Use of the land for housing is appropriate in the context of the Kihei-Makena Community Plan and the current need for affordable housing inventory. Best Management Practices have been identified and will be implemented to minimize any construction-related impacts.

(3) Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;

Alternative II will be in conformance with the Chapter 344, HRS, State Environmental Policy, to enhance the quality of life. The Proposed Action would foster safe, sanitary and decent homes. The subdivision will not waste or misuse natural resources. The proposed project is suitable for the area proposed and will improve social and economic welfare by providing affordable housing inventory.

(4) Substantially affects the economic welfare, social welfare, and cultural practices of the community or State;

Alternative II would have beneficial effects to the economic and social welfare of the community and State. In the short-term, the project will support construction and construction related employment and have a beneficial impact on the local economy. The addition of affordable housing units addresses the need for homes in the region. The project is not expected to impact cultural resources as no cultural resources have been identified on the property; there is no evidence of past or present use for Hawaiian cultural practices, resources, or beliefs.

(5) Substantially affects public health;

Alternative II will not have significant effects on public health. The Proposed Action would provide affordable and supportive affordable housing and, thereby, ensure a better standard of living. Environmental impacts from the community, such as noise and air pollution, will be minimal. A clean source of water will be provided. Wastewater will be property handled. Additional drainage will be retained onsite. Solid waste will be disposed of properly.

(6) Involves substantial secondary impacts, such as population changes or effects on public facilities;

Alternative II will likely not result in substantial secondary impacts, such as population changes or effects on public facilities. Residents are not expected to adversely impact public services such as police, fire, and emergency medical operations, nor are they anticipated to have an adverse effect upon educational and recreational facilities.

(7) Involves a substantial degradation of environmental quality;

Alternative II is not likely to result in a substantial degradation of environmental quality. During the construction phase, there will be short-term air quality and noise impacts. In the long-term, effects upon air quality and ambient noise levels will be minimal. Other impacts, such as site grading, increased runoff, and use of resources, are not expected to be significant and can be mitigated with proper Best Management Practices.

(8) Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions;

Cumulative effects are not anticipated as a result of implementing Alternative II. The actions themselves do not involve a commitment to larger actions. As represented by the "single family" designation on Kihei-Makena Community Plan, residential uses on the site represent the carefully thought out development of Kihei. While the project may add new residents to the area, impacts from these new residents are not expected to be significant, and can be accommodated without substantially increasing public infrastructure or services.

(9) Substantially affects a rare, threatened, or endangered species, or its habitat;

Alternative II is not anticipated to have substantial effects on rare, threatened, or endangered species, or any critical habitat. USFWS identified 6 federally listed species in the vicinity of the project area. Mitigation measures will be employed as to avoid or minimize any impacts to rare, threatened, or endangered species during and post-construction. There are no proposed or final critical habitats at the Site. Best Management Practices will be implemented to prevent secondary impacts to the coastal habitat, which may contain rare, threatened, or endangered species.

(10) Detrimentally affects air or water quality or ambient noise levels;

No significant impacts on the area's long-term air or ambient noise environments are anticipated to result from Alternative II. Construction activities will result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction-related activities. It is anticipated that construction will be limited to daylight working hours. Water quality is not expected to be affected.

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters;

The Site is not located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters.

(12) Substantially affects scenic vistas and view planes identified in county or state plans or studies; or,

Alternative II will not affect the visual aesthetics of the areas identified in the county or state plans and studies. The Kaiwahine Village site is not identified as a scenic vista or view plane nor will it affect identified scenic vistas or view planes. The community will not affect scenic corridors and coastal scenic and open space resources.

(13) Requires substantial energy consumption.

Alternative II would not require substantial energy consumption. The Kaiwahine Village will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources. In the long-term, the community will create an additional demand for electricity. However, this demand is not deemed substantial or excessive within the context of the region's overall energy consumption. The change in population and demand for energy would be readily met by existing infrastructure. Where feasible, energy conservation measures will be incorporated into the project. Based on these findings, it is anticipated that Alternative II will not result in any significant impacts.

In summary, the proposed project will provide 120 units of much needed affordable family rental housing in Kihei. Based on the foregoing analysis, the proposed action is not anticipated to result in any significant adverse impacts. Accordingly, the proposed action is anticipated to be a Finding of No Significant Impact (AFNSI).

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SECTION 9 AGENCIES AND ORGANIZATIONS CONSULTED

The following agencies and organizations were contacted prior to and during the development of this EA. Pre-consultation comment letters and response letters have been reproduced and included in Appendix E.

Federal Agencies

U.S. Fish and Wildlife Service

Natural Resources Conservation Service

State Agencies

Department of Business Economic Development & Tourism (DBEDT)

DBEDT, State Office of Planning

Department of Defense, Emergency Management/Civil Defense

Department of Health, Wastewater Branch

DOH, Clean Air Branch

DOH, Clean Water Branch

DOH, Environmental Planning Office

DOH, Maui District Health Office

Department of Education

Department of Land & Natural Resources

DLNR, Land Division

DLNR SHPD

Department of Transportation

DOT, Maui District Engineer

County Agencies

Department of Environmental Management

Department of Fire Control & Public Safety

Department of Housing and Human Concerns:

Carol K. Reimann, Director
2200 Main Street Ste 546
Wailuku, HI 96793

C. Buddy Almeida, Housing Administrator
35 Lunalilo St Ste 102
Wailuku, HI 96793

Malia Crouse, HOME/HTF Administrator
35 Lunalilo St Ste 102
Wailuku, HI 96796

Department of Parks & Recreation

Department of Planning:

William Spence
2200 Main Street
One Main Plaza, Suite 315
Wailuku, HI 96793

Department of Public Works

Department of Transportation

Department of Water Supply

Police Department

Other

Kihei Community Association

Honorable Alan Arakawa
Mayor, County of Maui
200 S. High Street, 9th Fl.
Wailuku, HI 96793

Jeffrey Ueoka
Deputy Corporation Counsel
200 S. High St, 3rd Fl.
Wailuku, HI 96793

Council Member Bob Carroll
Land Use Committee Chair
200 South High St., 8th Fl.
Wailuku, Hawaii 96793

Council Member Stacy Crivello
Housing, Human Concerns and Transportation Chair
200 South High St., 8th Fl.
Wailuku, Hawaii 96793

APPENDIX A

PHASE I ENVIRONMENTAL SITE ASSESSMENT

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PHASE I
ENVIRONMENTAL SITE ASSESSMENT
0 Kaiwahine Street
Kihei, Hawaii 96753
TMK (2) 3-8-004-028

Prepared for:
Ikaika Ohana
c/o Urban Housing Communities LLC
2000 E. Fourth Street, Suite 205
Santa Ana, California 92705

Prepared by:
Environmental Risk Analysis LLC
P.O. Box 240606
Honolulu, HI 96824

February 2017

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APPENDICES

Appendix A: Environmental Professional Qualifications
Appendix B: Aerial Photographs
Appendix C: EDR Report, Sanborn Fire Insurance Maps, Historical Topographic Maps, Historical Aerial Photographs and City Directory
Appendix D: Maui Electric Company Transformer Documentation
Appendix E: Site Reconnaissance Photographs

ACRONYMS

ASTM	American Society for Testing and Materials
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
Cl^-	chloride
CMU	Concrete Masonry Unit
CORRACTS	Treatment, storage and disposal facility subject to Corrective Action under RCRA
C-REC	Controlled Recognized Environmental Condition
DOD	Department of Defense
EAL	Environmental Action Level
EDR	Environmental Data Resources, Inc.
ERA	Environmental Risk Analysis, LLC
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
FIRM	Flood Insurance Rate Map
FUDS	Formerly Used Defense Sites
HDOH	Hawai‘i Department of Health
HECO	Hawaiian Electric Company
HEER	HDOH Hazard Evaluation and Emergency Response
H-RECs	Historical Recognized Environmental Condition
INST CONTROL	institutional controls
KNC	Kawaihae extremely stony very fine sandy loam
LCP	Lead Containing Paint
LLC	Limited Liability Company
LUST	Leaking Underground Storage Tank
MEC	Munitions of Environmental Concern
mg/l	milligrams/liter

MINES	Mines Master Index File
msl	mean sea level
NFA	no further action
NPL	National Priorities List
PCB	polychlorinated biphenyl
PCP	pentachlorophenol
PAH	polycyclic aromatic hydrocarbon
RCRA	Resource Conservation and Recovery Act
RCRA-LQG	Resource Conservation and Recovery Act – large quantity generators
RCRA-SQG	Resource Conservation and Recovery Act – small quantity generators
RCRA-CESQG	Resource Conservation and Recovery Act – conditionally exempt small quantity generators
RCRA-TSDF	Resource Conservation and Recovery Act – treatment, storage, and disposal facilities
REC	Recognized Environmental Condition
SARA	Superfund Amendments and Reauthorization Act
SHWB	Solid and Hazardous Waste Branch
SHWS	State Hazardous Waste Sites List
TMK	Tax Map Key
TPH	Total Petroleum Hydrocarbons
UIC	Underground Injection Control
US	United States
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VRP	Voluntary Response Program Sites

QUALIFICATIONS AND SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

The undersigned environmental professional was responsible for conducting and preparing the Phase I Environmental Site Assessment for the property designated by Tax Map Key (2) 3-8-004-028 located in Kihei, Hawaii.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40CFR312.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40CFRPart312.

Environmental professional qualifications are provided in Appendix A.

Environmental Risk Analysis LLC

Prepared By:

Name: Brandis Ueyama

Title: Project Manager

Reviewed By:

Name: Russell Okoji

Title: Principal Scientist

EXECUTIVE SUMMARY

At the request of Ikaika Ohana c/o Urban Housing Communities, LLC, Environmental Risk Analysis LLC (ERA) has conducted a Phase I Environmental Site Assessment (ESA) for a single parcel located on Kaiwahine Street in Kihei, Maui, Hawaii (hereafter referred to as the Site). The Site, TMK (2) 3-8-004-028, is comprised of a single 9.289-acre (404,629 square foot) parcel of land.

The purpose of this Phase I ESA was to identify, to the extent feasible, Recognized Environmental Conditions (RECs) associated with the Site. The investigation included a physical inspection of the property; review of current regulatory environmental database information; interviews of persons knowledgeable about the property, review of historical records; and preparation of this Phase I ESA Report. This ESA report conforms to the format outlined in the *American Society for Testing and Materials (ASTM) Document E1527-13* and the United States Environmental Protection Agency's (USEPA) All Appropriate Inquiries Rule. A site reconnaissance visit was initially conducted by Mr. Brandis Ueyama of ERA on May 18, 2016, and later by Zac Olds of ERA on February 11, 2017.

Findings

The subject Site was not listed on any of the databases searched by EDR. The Environmental Database Resource, Inc. (EDR) database provides a review of federal, state, and local lists and available files of reported hazardous waste sites and hazardous substance/petroleum product sources and releases.

The Site is unpaved and undeveloped with vegetation covering the majority of the parcel. No chemicals or hazardous materials were observed on the subject property. No noticeable spills or evidence of oil contamination was noted during the site reconnaissance. Vegetation on the Site and surrounding property was found to be dry and withered, most likely associated with the arid condition of the area. No unusual odors or staining were noticed indicating a potential environmental condition.

Various items including trash and construction debris were noted on the Site. ERA did not observe any RECs associated with these items that are subject to further investigation.

Undeveloped property surrounds the subject site to the north and east. Hale Piilani Park borders the northwest boundary of the Site. Residences along Kaihoi Street and Kaiwahine Street bound the subject site to the west. Residences along Lauloa Street and Hale Kai Street bound the subject site to the south. The subject Site is overgrown with vegetation. None of the neighboring properties are anticipated to affect the environmental condition of the subject Site.

Aerial photographs from 1951 through 2013 indicate that TMK (2) 3-8-004-028 has not been developed. The 1975 photo depicts structures located on the properties southwest of the Site. The 1992, 2000, and 2013 views depicts the area as it appears today. ASTM defined RECs were not noted from review of the historical aerial photographs.

Interviews with persons familiar with the Site history and uses were conducted to ascertain any information that may be indicative of potential RECs in connection with the Site. According to the information obtained in the interviews, the Site was likely used for cattle grazing and has never been developed. ASTM defined RECs were not noted from review of the historical use of the Site.

There are no underground storage tanks (USTs) located on the Site or on properties adjacent to the Site. No leaking underground storage tank (LUST) sites were located directly adjacent to the Site. There was one (1) LUST within ½-mile of the subject site, identified at the Tesoro 2Go gas station located at 356 Huku Lii Place. The the release is classified as a potential release, with no release ID available. The Tesoro 2GO is located approximately half a mile to the southwest and is down gradient of the subject property. Based on the status of the release and the distance and topography between the Tesoro 2Go and the subject property, the Tesoro 2Go LUST does not have a reasonable potential to adversely impact the environmental condition of the subject property.

A Hawaii Release Notification (SPILLS) and State Hazardous Waste Sites List (SHWS) database search provided a single entry; Selland Construction Inc, Kihei Baseyard located at 454 Ohukai Road. This site is listed as “low priority fuel and oil contamination” and is identified as S105262951. The site is approximately 2033 feet away and is at a lower elevation from the subject Site. Site cleanup was initiated and completed. Based on the remediation efforts and the distance and topography between the location of the Selland Construction Inc., Kihei Baseyard property and the project site, the Kihei Baseyard does not have a reasonable potential to adversely impact the environmental condition of the subject property.

ERA did not observe any electrical transformer on or adjacent to the subject Site during the site reconnaissance. MECO was queried and confirmed no electrical transformers were identified for the subject Site and adjacent parcels.

SUMMARY AND RECOMMENDATIONS

RECs - Site

- No RECS were identified from the review of historical records or the site investigations.

List of Additional Environmental Issues

- There were no additional environmental issues identified for the subject Site.

SECTION 1: INTRODUCTION

This Phase I Environmental Site Assessment (ESA) report was prepared by Environmental Risk Analysis LLC (ERA) for Ikaika Ohana c/o Urban Housing Communities, LLC. The subject of this Phase I ESA is a single parcel designated by Tax Map Key (TMK) (2) 3-8-004-028, located on Kaiwahine Street, Kihei, Maui, Hawaii.

1.1 PURPOSE

This Phase I ESA was requested to determine the current environmental status of the Site to satisfy due diligence requirements mandated by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The purpose of this investigation was to identify and evaluate evidence that may indicate any Recognized Environmental Conditions (REC) at the Site due to past or current management of chemicals or other materials that, if released or not properly controlled, could present a risk to human health or the environment.

Under CERCLA, owners and operators of real estate with hazardous substance contamination may be held strictly liable for the costs of cleaning up contamination found on their property. No evidence linking the owner/operator with the placement of the hazardous substances on the property is required.

Congress, in response to pressure from business and academic groups, established the "innocent landowner defense" in the 1986 amendments to CERCLA known as the Superfund Amendments and Reauthorization Act (SARA). To establish innocent landowner status, the landowner "must have undertaken, at the time of acquisition, all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial and customary practice in an effort to minimize liability."

In an effort to clarify what constitutes "all appropriate inquiry," the American Society for Testing and Materials (ASTM) has developed a standard that provides specific definition of the steps one should take when conducting a "due diligence" Phase I ESA for commercial real estate. The site assessment documented herein complies with the current ASTM E1527-13 Standard Practice for Environmental Site Assessments.

ASTM E-1527-13 defines three categories of RECs which may impact the project site.

- A REC is defined as the presence of any hazardous substance or petroleum product in, on, or at the property: 1) due to any release to the environment, 2) under

conditions indicative of a release to the environment, or 3) under conditions that pose a material threat of a future release to the environment

- Historical RECs (H-RECs) are defined as a past release of any hazardous substance or petroleum product that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authorities or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls
- Controlled RECs (C-RECs) are defined as a REC resulting from a past release that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place, subject to the implementation of required controls, such as property use restrictions, activity and use limitations, institutional controls, or engineering controls

Additionally, the United States Environmental Protection Agency (USEPA) has also published its final rule setting federal standards for the conduct of all appropriate inquiries. This rule establishes specific regulatory requirements for conducting all appropriate inquiries into previous ownership, uses, and environmental conditions of a property. As of November 1, 2006, parties must comply with either the requirements of the All Appropriate Inquiries Final Rule or the standards set forth in the ASTM E1527-13 Phase I Environmental Site Assessment Process. All appropriate inquiries must be conducted in compliance with either of these standards in order to obtain protection from potential liability under CERCLA as an innocent landowner, a contiguous property owner, or a bona fide prospective purchaser. This site assessment complies with both the current ASTM E1527-13 Standard Practice for Environmental Site Assessments and the USEPA All Appropriate Inquiries Rule.

1.2 SCOPE

The scope of services for this Phase I ESA consisted of the following tasks:

- Reviewing historical aerial photographs, information of past ownership, and conducting discussions with knowledgeable persons to evaluate historical land use.
- Assessing general conditions at the Site including a general geology and hydrogeology evaluation.
- A reconnaissance visit to the Site to evaluate visual evidence of past or current practices that may have impacted the Site.
- Reviewing local, state, and federal agency lists and available files of reported hazardous waste sites and hazardous substance/petroleum sources and releases. ERA queried the

Environmental Data Resources, Inc. (EDR) database which provides comprehensive federal and state environmental release listings. The EDR database provides results in proximity to the Site following ASTM search distance guidelines.

- Providing a summary of findings and recommendations for the Site.
- Providing a summary of the limitations of this assessment.

1.3 SITE LOCATION

The Site is comprised a single parcel totaling 9.289-acres (494,629 square feet) and designated on the County of Maui Tax maps as TMK (2) 3-8-004-028. The Site is located in Kihei, Maui, Hawaii. A map displaying the location of the Site is included as Figure 1. Figure 2 depicts the TMK boundaries.

1.4 CURRENT USE OF THE SUBJECT PROPERTY

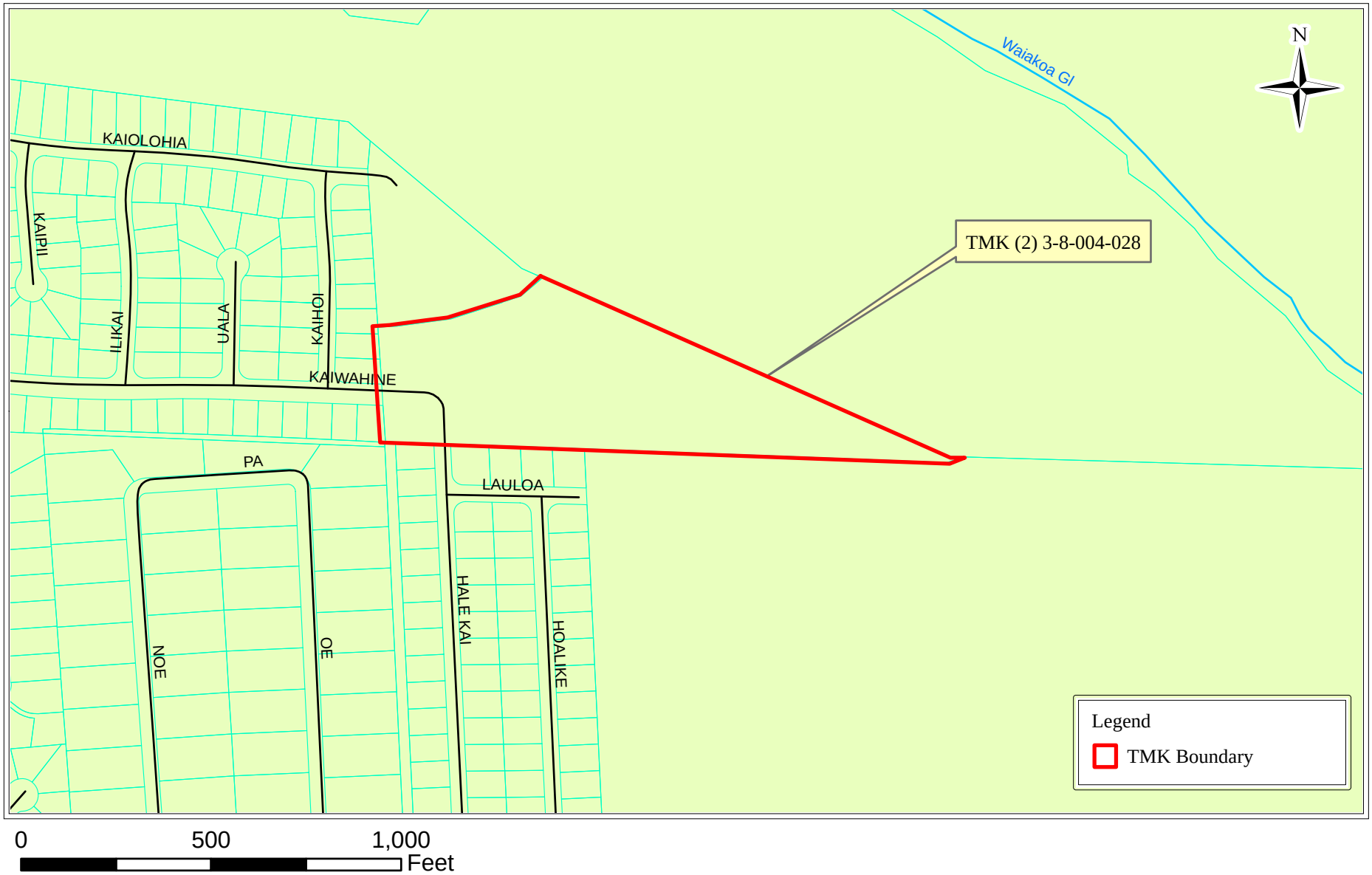
The Site is currently unpaved and undeveloped.

1.5 CURRENT USE OF ADJACENT PROPERTIES

Adjoining properties were observed from public access areas for signs of RECs for their potential to pose an environmental risk to the subject property. The uses and features of adjoining properties are provided below:

North:	Undeveloped Land, Hale Piilani Park
South:	Residences along Lauloa Street and Hale Kai Street
East:	Undeveloped Land
West:	Residences along Kaihoi Street and Kaiwahine Street

	PROJECT NAME: Phase I Environmental Site Assessment 20 West Kaahumanu Avenue Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Site Location Map FIGURE NUMBER: 1



Environmental Risk Analysis	PROJECT NAME: Phase I Environmental Site Assessment 20 West Kaahumanu Avenue Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: TMK Map FIGURE NUMBER: 2

SECTION 2: HISTORICAL LAND USE

Research regarding historical land use was conducted to determine, to the extent practicable, if past or current practices involving the use, storage, treatment, generation, and/or disposal of hazardous substances or petroleum products may have taken place at the Site or if releases on properties in the surrounding area may have impacted the Site. Research on historical land use was accomplished by examining the following sources: historical information sources, historical aerial photographs, land lease and land ownership records, and reports from previous investigations that may have been conducted at the Site. In addition, first hand interviews were conducted with persons who are knowledgeable about the Site.

2.1 HISTORICAL INFORMATION SOURCES

ERA queried the EDR database to obtain information about federal and state environmental release listings. The EDR database provides results in proximity to the Site following ASTM search distance guidelines (indicated in Section 5) and is continually updated. EDR provided the Sanborn Fire Insurance maps, historical city records, and historical topographic maps reviewed in this Section. Results of the EDR database search are provided in Section 5 of this report. Other historical information sources queried included: aerial photographs and environmental records reviewed through the State of Hawai‘i, Department of Health (HDOH).

2.2 HISTORICAL AERIAL PHOTOGRAPHS

Historical aerial photographs were reviewed to help determine the past use of the Site, as well as adjacent properties. Aerial photographs for the years 1951, 1975, 1992, and 2000 were obtained from EDR historical aerial maps (EDR, 2017a). A 2014 aerial view was obtained from the Google Maps website.

Based on a review of the historical aerial photographs spanning 1951 to 2014, the Site appeared to have been never developed. The 1975 photo depicts structures located on the properties southwest of the Site. The 1992 and 2000 views depict the area as it appears today. ASTM defined RECs were not noted from review of the historical aerial photographs.

Copies of the aerial photographs are available in Appendix B. Brief descriptions of these photographs are presented below:

1951

Site: The 1954 aerial photograph showed the TMK (2) 3-8-004-028 as undeveloped.

Adjacent Properties: The properties in the vicinity of the Site do not appear to be developed. Kaiwahine Street does not appear in this photo.

1975

Site: The 1975 aerial photograph showed the Site as undeveloped.

Adjacent Properties: A majority of the properties in the immediate vicinity of the Site do not appear to developed. There are a scattering of structures observed in the 1975 photograph. Noe Street, Oe Street, Manini Place, Moi Place, and Nehu Place are present.

1992

Site: The Site in the 1992 continues to appear undeveloped.

Adjacent Properties: Adjacent properties appears as they are today with what appears to be residences to the west and southwest, and undeveloped land to the north, west and southwest.

2000

Site: The Site in the 2000 aerial photograph shows the Site as undeveloped.

Adjacent Properties: Adjacent properties in the vicinity of the property appeared developed similar to as exists today.

2014

Site: The 2014 view depicts the site as undeveloped and as it exists today.

Adjacent Properties: Adjacent properties in the vicinity of the property appeared developed similar to as exists today.

2.3 EDR SUPPLEMENTAL SEARCH OF SANBORN FIRE INSURANCE MAPS

The EDR database was queried for Sanborn Fire Insurance Maps that document historical property use. The EDR database indicates that Sanborn maps are not available as the Site is an unmapped site. (EDR, 2017b)

2.4 EDR CITY DIRECTORY ABSTRACT

EDR City Directory Abstracts identify historic usage of subject and adjoining properties. The City Directory Abstract is presented in Appendix C. Listings for the address Kaiwahine Street were found for the years 1992, 1995, 1999, 2003, 2008, and 2013 (EDR, 2017c). No listings were found for the subject site. Listings for Kaiwahine Street and adjacent Hale Kai Street appeared to be residences with some business listings operated out of the home.

No specific ASTM defined RECs were identified from the review of the City Directory.

2.5 EDR HISTORICAL TOPOGRAPHIC MAPS

EDR Historical Topographic Maps track changing land use and development patterns of subject and adjoining properties. Historical Topographic Maps are presented in Appendix C (EDR, 2017d). Following are the observations made of listings provided for the years 1954, 1983, 1992, 1996, and 2013 (most current year available). No ASTM defined RECs were noted from the review of the historic topographic maps.

1954 (7.5 Minute): The area of the site was undeveloped, and no streets or structures were visible on and in the vicinity of the subject site. Waiakoa Homesteads is depicted adjacent to the subject site.

1983 (7.5 Minute): Structures were displayed in the vicinity of the Site. No structures were observed on the subject parcel. The topography of the Site remained unchanged.

1992 (7.5 Minute): Kaiwahine Street and Hale Kai Street are depicted. Structures were not depicted on this map. The topography of the Site remained unchanged.

1996 (7.5 Minute): The 1996 map appears similar to the 1992 map in that streets are depicted, but no structures. The topography of the Site remained unchanged.

2013 (7.5 Minute): Structures were not depicted on this map. The topography of the Site remained unchanged.

2.6 LAND LEASES AND OWNERSHIP

The County of Maui's Real Property Assessment and Tax Billing Information website indicates the Fee Owners of the Site parcel as Royal Main Properties LLC. According to the County of Maui records, TMK (2) 3-8-004-028 comprises approximately 9.289-acres (404,629 square feet). The Site is zoned as an agricultural district and its current assessed land value is $1,068,200. The Site is not located in a Special District or a Special Management Area.

Past ownership and lease history of the Site was obtained through a records search of the Bureau of Conveyances archives and from available historical references and reports. According to the results of our investigation, Royal Main Properties LLC is listed as the owner of the Site.

2.7 PREVIOUS INVESTIGATIONS

No previous investigations were reported for the subject site.

2.8 INTERVIEWS

ERA conducted interviews with persons who are knowledgeable about the Site. The objective of these interviews was to ascertain any information that may be indicative of potential RECs in connection with the Site. According to ASTM Standard E1527-13 Section 3.2.43, questions should be addressed to *past and present* owners, operators, and occupants of the Site, as well as local government officials.

Summary of Interviews

The following individuals were contacted to complete this Phase I ESA. A summary of each interview (including business and contact name) is presented below

- Records Review, DOH HEER Office, in person June 10, 2016.

- Ms. Brittani Capps of Maui Electric Company (MECO), via email on June 13, 2016.

Records Review, DOH HEER Office

The DOH HEER Office, was visited on June 10, 2016 to review records relating to an EDR identified site. Per the records review, soil had been "grossly" contaminated with diesel fuel and heavy oils at the Selland Construction Inc, Kihei Baseyard. Remediation of site soils took place where contaminated soils were excavated, stockpiled, and removed from the property. Confirmation sampling was performed following remedial activities. A comparison of the sampling results to DOH standards indicated clean up of the contaminated soils at the site was accomplished per the Site Remediation Executive Summary Report conducted by South Pacific Geotechnical in December 1994. Excavated and stockpiled contaminated soils were transported from the site to Hawaiian bitumen plant to be processed into "cold mix". Dickinson Construction submitted a No Further Action request to HDOH in July 1997. Though response actions are deemed complete, a No Further Action has not yet been granted. Based on the remediation efforts and the distance and topography between the location of the Selland Construction Inc., Kihei Baseyard property and the project site, the Kihei Baseyard does not have a reasonable potential to adversely impact the environmental condition of the subject property.

Ms. Brittani Capps, MECO

RECs were not identified in the interview with Ms. Brittani Capps of MECO. ERA did not observe any electrical transformers on or adjacent to the subject Site during the site reconnaissance. Ms. Capps had been contacted via email in June 2016 to determine if MECO had any record of transformers located at the property and adjacent to the property. MECO determined there were no electrical transformers on or bordering the subject TMK. The MECO response is provided in Appendix D.

2.9 RECORDS REVIEW

No RECs were identified from the review of the public records. The site and nearby properties have historically been listed as unused or urban (undifferentiated), as noted in the 1970 Existing Land Use Map of the Kihei Civic Development Plan.

2.10 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

There are no environmental liens or activity associated with the property.

2.11 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

Information regarding valuation of the subject Site was not provided. The County of Maui, Real Property Assessment and Tax Billing Information website lists the assessed value of TMK (2) 3-8-004-028 as $1,068,200. Fair market value and purchase price information was not available.

SECTION 3: SITE CONDITIONS

The subject property is situated in Kihei on the island of Maui. The following section describes the Site with regards to soil classifications, groundwater hydrology, topography and land cover and local zoning.

3.1 SOIL CLASSIFICATIONS

The United States Department of Agriculture (USDA) Soil Conservation Service classifies the soil within the Site as Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2). The soil is moderately well drained. Runoff is high. Typical profile includes extremely stony silty clay loam from 0 to 20 inches, followed by stony silty clay loam to 28 inches, and bedrock down to 32 inches (USDA, 2004).

3.2 GROUNDWATER HYDROLOGY

The Site overlies the Makawao aquifer system of the Central aquifer sector. The Makawao aquifer system consists of an upper and lower aquifer system. The upper system is described as a high level (fresh water not in contact with sea water), unconfined (where water table is upper surface of saturated aquifer), perched (aquifer on an impermeable layer) aquifer (Mink and Lau, 1990). It is classified as a potentially used, fresh drinking water source (<250 milligrams per liter [mg/l] chloride [Cl^-], replaceable, and highly vulnerable to contamination (Mink and Lau, 1990). The lower system is described as a basal (fresh water in contact with sea water), unconfined (where water table is upper surface of saturated aquifer), flank (horizontally extensive lavas) aquifer (Mink and Lau, 1990). It is classified as a currently used, low salinity drinking water source (250-1,000 mg/l Cl^-, irreplaceable, and moderate vulnerable to contamination (Mink and Lau, 1990).

According to the EDR report, there are numerous United States Geological Survey (USGS) wells within a 1-mile radius of the Site. No water wells are listed on the Federal Public Water Supply System Information database and four (4) water wells identified in the State Database Well Information are located within a 1-mile radius of the subject property (EDR, 2015e). The Site is down-gradient of the Underground Injection Control (UIC) line (Figure 3) as such; the underlying aquifer is not considered a drinking water source and a wider variety of wells are allowed. Injection wells do require a UIC permit or permit exemption and permit limitations are imposed.

3.3 TOPOGRAPHY AND LAND COVER

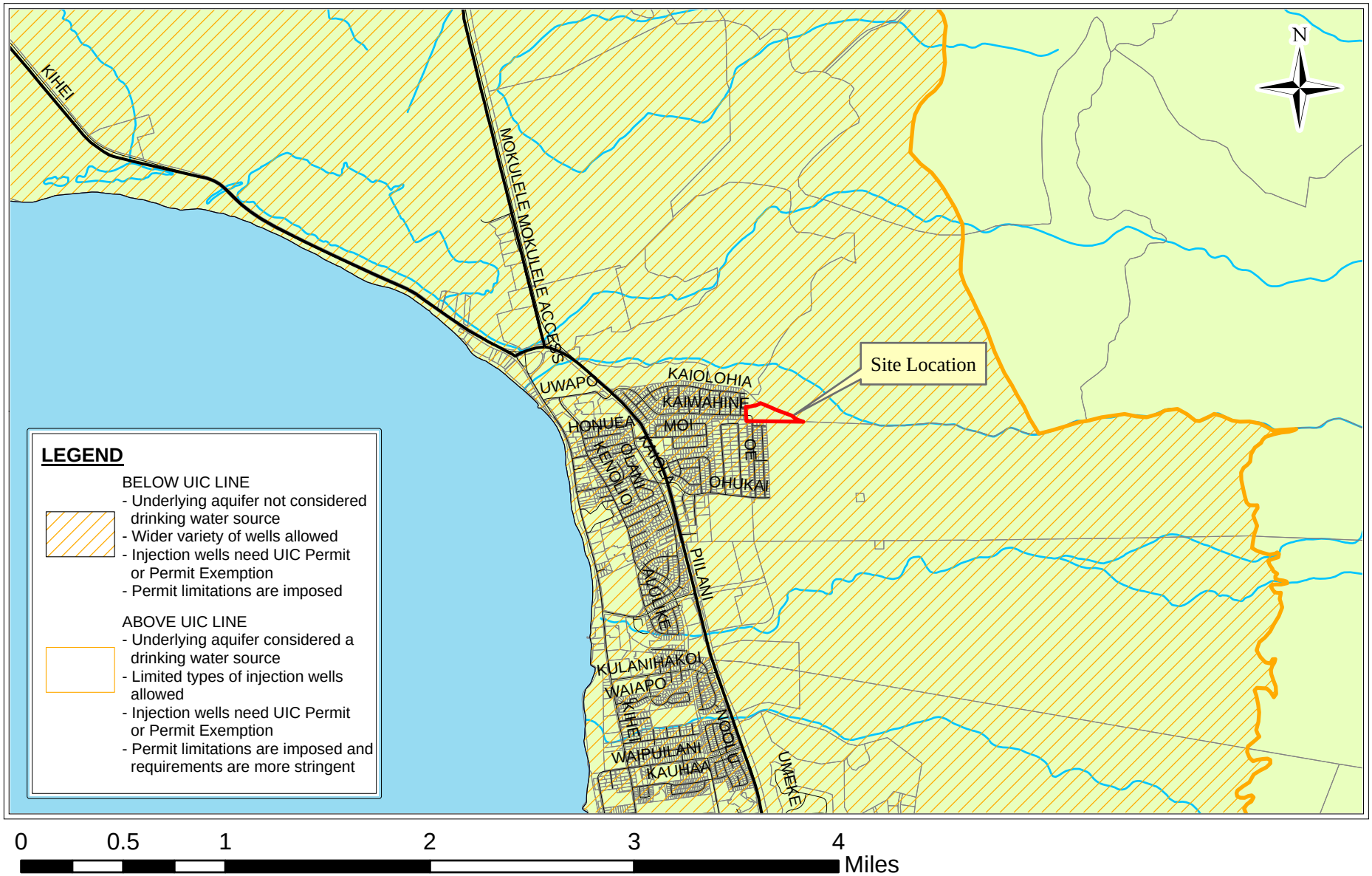
According to the USGS, Maui, Hawaii, 7.5 minute topographic quadrangle map, the subject property elevation is approximately 150 feet above mean sea level (msl). The Site is undeveloped.

3.4 LOCAL ZONING

The County of Maui, Planning Division, indicates the Site Land Use Ordinance Zoning Designation is Agriculture. The Site is not located in a Special District or Special Management Area.

3.5 FLOOD ZONE DETERMINATION

The Site is depicted on Federal Emergency Management Agency (FEMA) flood insurance rate map (FIRM) Map No. 1500030580F, panel 580 of 825, revised September 19, 2012. It was determined that the Site lies within Flood Zone X, beyond the 500-year flood plain.



Environmental Risk Analysis	PROJECT NAME: Phase I Environmental Site Assessment 20 West Kaahumanu Avenue Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Underground Injection Control Map FIGURE NUMBER: 3

SECTION 4: SITE RECONNAISSANCE

The purpose of the site reconnaissance was to visually assess for evidence of the use, storage, generation and disposal of potentially hazardous substances and petroleum products, and/or indicators of possible releases of hazardous substances and/or petroleum products at the Site. Evidence of possible releases of hazardous substances or petroleum products include discolored soil, flooring, or paving; visible leaks; odors; and apparent stressed vegetation. A visual survey of adjacent properties from public thoroughfares is also conducted. Mr. Brandis Ueyama of ERA conducted site reconnaissance on May 18, 2016 and February 11, 2017. The following sections present general observations of the Site and the surrounding area.

4.1 GENERAL OBSERVATIONS OF THE SITE

No visual evidence of oil spills, hazardous substance storage or release was noted during the site reconnaissance. Photos of the Site as it appeared on May 18, 2016 are provided in Appendix E.

General

The subject Site is undeveloped and unpaved. TMK (2) 3-8-004-028 contains grasses and small brush throughout the subject property. Portions of the Site have been bulldozed and an unpaved road transects the northern portion of the property. Various items including trash, cement tiles, concrete debris, scrap wood, mattresses, metal scrap, car parts, and asphalt were noted on the Site, mostly in the vicinity of the unpaved road to the north and off of Kaiwahine Street, indicating that illegal dumping has occurred at the property. Several car batteries in various stages of decomposition were also noted, these are considered de minimis conditions, and do not constitute a REC designation. No unusual odors were detected that would suggest a source of contamination and no obvious signs of petroleum or chemical staining was observed.

4.2 GENERAL OBSERVATIONS OF THE SURROUNDING AREA

ERA visually assessed areas adjacent to the Site from public thoroughfares. Residential homes border the Site from west to southwest. A county park can be found to the northwest. Vacant land bound the Site to the north, south and east. The adjacent vacant sites are not anticipated to affect the environmental condition of the subject Site.

4.3 PCB-CONTAINING EQUIPMENT

RECs were not identified during the assessment of electrical transformers. Electrical transformers may contain PCBs and all untested mineral oil transformers purchased prior to July 1, 1979, must be considered PCB-contaminated. No electrical transformer was noted within the direct vicinity of the Site. MECO confirmed there are no records of any electrical transformers in or about the Site. The MECO response is provided in Appendix D.

No fluorescent light fixtures were observed throughout the subject property.

4.4 ASBESTOS-CONTAINING MATERIAL AND LEAD PAINT

ACBM and LCP are not considered to be RECs as defined by ASTM but can pose potential health hazards. No ACBM and LCP were noted at the Site.

4.5 ARSENIC

From the review of historic site use, the Site was historically used for cattle grazing. Arsenic is not considered a REC for the Site.

SECTION 5: REVIEW OF FEDERAL, STATE, AND LOCAL LISTS AND AVAILABLE FILES OF REPORTED HAZARDOUS SUBSTANCE/PETROLEUM PRODUCT SOURCES AND RELEASES

This section includes results of a review of federal, state, and local lists and available files of reported hazardous waste sites and hazardous substance/petroleum product sources and releases. The EDR database provided the federal and state environmental release listings (EDR, 2015e). This information is provided in Appendix C and is summarized below.

5.1 DATABASES AND REGULATORY FILES REVIEWED

A list of the Federal Sources and Hawai‘i State Regional databases reviewed is provided below. These databases were reviewed to document the location of federal and state listed sites, or other known hazardous waste sites, following ASTM search distance guidelines. The ASTM search distance guidelines are provided in parenthesis.

Standard Environmental Record Sources

- HDOH LUST Database (½-mile)
- HDOH Registered UST Database (property and adjoining properties) (¼-mile)
- Federal RCRA – conditionally exempt small quantity generators (RCRA-CESQG)
- (property and adjoining properties) (¼-mile)
- Historical Auto Stations (¼-mile)

Additional Environmental Record Sources

The following standard environmental record sources were reviewed by EDR, however there were no findings within the ASTM specified search distances. The following databases are provided for reference, but not further discussed in this report:

- Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) (½-mile)
- Federal CERCLIS No Further Remedial Action Planned (CERC-NFRAP) (½-mile)
- Federal Resource Conservation and Recovery Act (RCRA) non-CORRACTS – treatment, storage, and disposal facilities (RCRA-TSDF) (½-mile)

- Federal RCRA – small quantity generators (RCRA-SQG) (¼-mile)
- Leaking Underground Storage on Indian Land (½-mile)
- Underground Storage on Indian Land (½-mile)

The following additional environmental records sources were reviewed by EDR, however there were no findings within the ASTM specified search distances. The following databases are provided for reference, but not further discussed in this report:

- Federal Corrective Action Report (CORRACTS) (1-mile)
- Federal National Priorities List (NPL) (1-mile)
- Federal Delisted NPL List (½-mile)
- Federal RCRA – large quantity generators (RCRA-LQG) (property and adjoining properties)
- Federal Engineering Controls Sites (property only)
- Federal Sites with Institutional Controls (property only)
- Federal Emergency Response Notification System (property only)
- State facilities permitted as solid waste landfills, incinerators, or transfer stations (½-mile)
- Department of Defense Sites (DOD)
- Formerly Used Defense Sites (FUDS)
- State Hazardous Waste Sites List (SHWS) (1-mile)
- Permitted Landfills in the State of Hawai‘i (½-mile)
- EPA Listing of Brownfields Properties
- State Voluntary Response Program Sites (½-mile)
- State Sites with Institutional Controls (INST CONTROL) (property only) (½-mile)
- Voluntary Remediation Program and Brownfields Sites with Institutional Controls (½-mile)
- State Brownfields Sites (½-mile)
- RCRA Non-Generator List
- Mines Master Index File
- Facility Index System/Facility Identification Initiative Program Summary Report (FINDS)
- Biennial Reporting System
- Superfund CERCLA Consent Decrees
- CERCLA Lien Information

- Records of Decision
- Uranium Mill Tailing Sites
- Hazardous Materials Information Reporting System
- Material Licensing Tracking System
- PCB Activity Database System
- Storm Water General Permits
- RCRA Administrative Action Tracking System
- Toxic Chemical Release Inventory System
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act /Toxic Substances Control Act
- Section 7 Tracking Systems
- Open Dump Inventory
- Clandestine Drug Labs
- Incident and Accident Data
- Radiation Information Database
- Federal Insecticide, Fungicide, and Rodenticide Act/ Toxic Substances Control Act Tracking System Administrative Case Listing
- Land Use Control Information System
- Integrated Compliance Information System State List of Permitted Facilities Permitted Drycleaner Facility Listing
- Indian Reservations
- EDR Proprietary Manufactured Gas Plants

5.2 RESULTS OF DATABASE REVIEW AND REGULATORY AGENCY CONTACTS

This section provides a summary of results for all database searches conducted during this assessment. ERA does not consider any of the EDR results discussed below as RECs for the Site.

Section 5.2.1 provides results specifically for the Site and Section 5.2.2 provides results found for properties within the vicinity of the Site.

5.2.1 RESULTS FOR SUBJECT SITE

The target property address submitted to EDR was not listed in any reviewed databases searched by EDR.

5.2.2 RESULTS FOR PROPERTIES WITHIN THE VICINITY OF THE SUBJECT SITE

ASTM proximity search guidelines were used to designate properties for evaluation and review. Properties were listed in the vicinity of the Site in the following databases and reviewed for potential impacts which could contribute to a REC at the Site:

Standard Environmental Record Sources

- HDOH LUST Database
- HDOH Registered UST Database
- Federal RCRA-CESQG

Additional Environmental Record Sources

- Historical Auto Stations
- Solid and Hazardous Waste Sites (SHWS) Database
- Hawaii Release Notifications (HI SPILLS) Database

Potential environmental conditions at adjacent properties located within the vicinity of the Site are summarized below.

Standard Environmental Record Sources

<u>HDOH Leaking UST (LUST) Database</u>

A search of the HDOH LUST Branch database records (dated 11/18/2016) reported one (1) LUST within ½-mile of the subject site, identified at the Tesoro 2Go gas station located at 356 Huku Lii Place. The status of the release is dated 11/27/15, and is classified as a potential release, with no release ID available. The Tesoro 2GO is located approximately half a mile to the southwest and is down gradient of the subject property. Based on the status of the release and the distance and topography between the Tesoro 2Go and the subject property, the Tesoro 2Go LUST does not have a reasonable potential to adversely impact the environmental condition of the subject property.

HDOH Registered UST Database

A search of the HDOH UST Branch database records (dated 11/18/2016) indicated that there are no registered UST sites within a ¼-mile radius of the Site.

Federal RCRA-CESQG

A search of the Federal RCRA database records (dated 09/12/2016) indicated that there are no RCRA-CESQG located within ¼-mile of the Site.

Additional Environmental Record Sources

Historical Auto Station

According to EDR's database search dated 04/28/2015, there are no Historical Auto Station located within a ¼-mile radius of the subject Site.

SHWS and HI SPILLS Database

There was a single, SHWS/HI SPILLS facility located within a 1-mile radius of the Site. The site listed is Selland Construction Inc, Kihei Baseyard located at 454 Ohukai Road. The site is considered a "low priority fuel and oil contamination" and is identified as S105262951. The site is approximately 2033 feet away and is at a lower elevation from the subject Site.

As noted previously, a records review at the DOH HEER office found soil that had been "grossly" contaminated with diesel fuel and heavy oils at the Selland Construction Inc, Kihei Baseyard. Contaminated soils were excavated, stockpiled, and removed from the property. Confirmation sampling was performed following the removal. Clean-up of the contaminated soils at the site was achieved and reported in December 1994. Excavated and stockpiled contaminated soils were transported from the site to Hawaiian bitumen plant to be processed into "cold mix". Based on the remediation efforts and the distance and topography between the location of the Selland Construction Inc., Kihei Baseyard property and the project site, the Kihei Baseyard does not have a reasonable potential to adversely impact the environmental condition of the subject property.

Unmapped Sites due to Poor or Inadequate Address Information

EDR did not report any sites as having poor or inadequate address information and was unable to map the sites in relation to the subject property.

SECTION 6: FINDINGS & RECOMMENDATIONS

At the request of Ikaika Ohana c/o Urban Housing Communities, LLC, ERA has conducted a Phase I ESA for a single parcel located on Kaiwahine Street in Kihei, Maui, Hawaii. The purpose of this ESA was to identify, to the extent feasible, RECs associated with the Site. The investigation included a physical inspection of the property; review of current regulatory environmental database information; interviews of persons knowledgeable about the property, review of historical records; and preparation of this Phase I ESA Report. This ESA report conforms to the format outlined in the *ASTM Document E1527-13* and the USEPA's All Appropriate Inquiries Rule. The site reconnaissance visit was conducted by Mr. Brandis Ueyama of ERA on March 18, 2016.

FINDINGS

The subject Site was not listed on any of the databases searched by EDR. The Environmental Database Resource, Inc. (EDR) database provides a review of federal, state, and local lists and available files of reported hazardous waste sites and hazardous substance/petroleum product sources and releases.

The Site is unpaved and undeveloped with vegetation covering the majority of the parcel. No chemicals or hazardous materials were observed on the subject property. No noticeable spills or evidence of oil contamination was noted during the site reconnaissance. Vegetation on the Site and surrounding property was found to be dry and withered, most likely associated with the arid condition of the area. No unusual odors or staining were noticed indicating a potential environmental condition.

Various items including trash and construction debris were noted on the Site. ERA did not observe any RECs associated with these items that are subject to further investigation.

Undeveloped property surrounds the subject site to the north and east. Hale Piilani Park borders the northwest boundary of the Site. Residences along Kaihoi Street and Kaiwahine Street bound the subject site to the west. Residences along Lauloa Street and Hale Kai Street bound the subject site to the south. The subject Site is overgrown with vegetation. None of the neighboring properties are anticipated to affect the environmental condition of the subject Site.

Aerial photographs from 1951 through 2013 indicate that TMK (2) 3-8-004-028 has not been developed. The 1975 photo depicts structures located on the properties southwest of the Site. The 1992, 2000, and 2013 views depicts the area as it appears today. ASTM defined RECs were not noted from review of the historical aerial photographs.

Interviews with persons familiar with the Site history and uses were conducted to ascertain any information that may be indicative of potential RECs in connection with the Site. According to the information obtained in the interviews, the Site was likely used for cattle grazing and has never been developed. ASTM defined RECs were not noted from review of the historical use of the Site.

There are no underground storage tanks (USTs) located on the Site of on properties adjacent to the Site. No leaking underground storage tank (LUST) sites were located directly adjacent to the Site.

A Hawaii Release Notification (SPILLS) and State Hazardous Waste Sites List (SHWS) database search noted a single entry. The site is listed as Selland Construction Inc, Kihei Baseyard located at 454 Ohukai Road. The site is listed as low priority fuel and oil contamination and is identified as S105262951. It is approximately 124 feet away and is at a lower elevation from the subject Site. Site cleanup was initiated and completed. Based on the remediation efforts and the distance and topography between the location of the Selland Construction Inc., Kihei Baseyard property and the project site, the Kihei Baseyard does not have a reasonable potential to adversely impact the environmental condition of the subject property.

ERA did not observe any electrical transformer on or adjacent to the subject Site during the site reconnaissance. MECO was queried and confirmed no electrical transformers were identified for the subject Site and adjacent parcels.

SUMMARY AND RECOMMENDATIONS

RECs - Site

- No RECS were identified from the review of historical records or the site investigations.

List of Additional Environmental Issues

- There were no additional environmental issues identified for the subject Site.

SECTION 7: DEVIATIONS AND DATA GAPS

The following are data gaps encountered during the assessment:

- A valuation assessment comparing fair market value of the property was not performed as information regarding the fair market value and property purchase price was not available.
- Historical data of past uses of the subject Site was limited to information obtained through interviews. Aerial photos were not available prior to 1954.

These data gaps are not considered significant.

SECTION 8: REPORT LIMITATIONS

The findings, observations, conclusions, and recommendations of this report are limited by the technical requirements specified in the contract between Ikaika Ohana c/o Urban Housing Communities, LLC and ERA. The findings, observations, conclusions, and recommendations presented herein solely identify and evaluate evidence that may indicate that environmental hazards exist at the Site due to past or current management of chemicals or other materials that, if released or not properly controlled, could present a risk to human health or the environment.

The Phase I ESA provides a "snap shot" of Site conditions at the time of the investigation. The assessment does not cover site changes that ERA could not reasonable ascertain. Additionally, it must be noted that no investigation can completely rule out the existence of any regulated or hazardous materials at a given Site.

In preparing this report, ERA relied on information derived from visual reconnaissance, governmental agencies, computer databases, and personal interviews. Except as set forth in this report, ERA made no independent investigations as to the accuracy and completeness of the information derived from the listed sources. ERA assumed that all information obtained during the course of the investigation is accurate and complete.

Although ERA did evaluate (to the extent reasonable) the historical use of adjacent properties (e.g., City Directory Search), ERA cannot guarantee that neighboring industries have not impacted the subject Site. ERA did not perform a complete environmental assessment of adjacent properties and it is possible that groundwater migration, overland flow or transport of contaminated particles via wind may have contaminated the Site.

All findings, observations, conclusions, and recommendations stated in this report are based on facts; circumstances; applicable federal, state and local laws, rules, and regulations; and generally accepted national standards for such services in existence at the time that the report was prepared. Topics not explicitly discussed within this report should not be assumed to have been investigated or tested.

ERA has prepared this document for the use and benefit of Ikaika Ohana c/o Urban Housing Communities, LLC. Any use of this document or information herein by persons or entities other than those named above without the express written consent of ERA will be at the sole risk and

liability of said person or entity, and ERA will not be liable to such persons or entities for any damages resulting therefrom.

SECTION 9: REFERENCES

American Society for Testing and Materials (ASTM), 2013, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, E1527-13.

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EDR, 2016e. Radius Map with GeoCheck®, TMK 2 3-8-4-28, 0 Kaiwahine St, Kihei, HI 96753, Inquiry Number 4843250.2s, February 2, 2017.

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United States Department of Agriculture (USDA), Natural Resources Conservation Service. Accessed February 2017. www.websoilsurvey.nrcs.usda.gov.

Appendix **A**

ENVIRONMENTAL PROFESSIONAL QUALIFICATIONS

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Russell S. Okoji, Ph.D.

Principal Scientist

Professional Summary:

Dr. Russell S. Okoji is a Principal and Senior Technical Advisor for Environmental Risk Analysis. Previously, he was the Environmental Division Manager for AMEC Earth and Environmental's Pacific Region. Dr. Okoji received his BS in Applied Ecology from the University of California, Irvine, and his doctorate in Environmental Health Sciences from the University of California, Los Angeles. He has been associated with ERA since its inception in 2006 and has more than 17 years of academic and environmental professional consulting experience. As AMEC's Pacific Region Environmental Division Manager, he oversaw a team of 15 environmental scientists. Dr. Okoji's current responsibilities at ERA include Program and Project Management for a variety of project types including toxicological assessments, risk assessments, environmental impact statements, industrial hygiene projects, air studies, both small and large scale Phase 1, 2 and 3 Assessments, and public relations support. Dr. Okoji has extensive knowledge in both federal and state environmental regulations. Between 2006 and 2010, Dr. Okoji was the Program Manager for an environmental IDIQ contract through Kamehameha Schools Commercial Assets Division. Dr. Okoji personally managed multiple projects worth over $800k over the length of the contract. Between 2004 and 2008, Dr. Okoji served as Program Manager for the Hawaii Department of Health Environmental Services IDIQ Contract. He has received commendation from the State of Hawaii, City and County of Honolulu, the U.S. Navy and ATSDR.

Past Employment History **Position:** **Dates of Employment**:	AMEC Earth and Environmental Inc. Environmental Division Manager, Pacific Region 2000 to 2010
Other Firms: **Position:** **Dates of Employment:**	University of California, Los Angeles Laboratory Manager and Researcher 1994 to 2000
Education:	2000, Ph.D., Environmental Health Sciences, University of California, Los Angeles 1994, B.S., Applied Ecology, University of California, Irvine
Professional Qualifications:	OSHA 40-Hour Hazardous Material Operations and Emergency Response Training (29 CFR 1910.120), initial certification 2000, annual refreshers Asbestos Building Inspector, initial certification 2005 Asbestos Management Planner, initial certification 2005
Professional Registration:	None Available
Memberships:	Hawai'i Association of Environmental Professionals (HAEP) Hawai'i Chamber of Commerce: Environmental Affairs Committee

Detailed Core Skills or Details by Project

<u>Environmental Due Diligence (Phase 1, 2 and 3 Assessments)</u>

Hawaii Commercial Real Estate, 233 Merchant Street, Honolulu, Hawaii: Principal in Charge: Performed a Phase 1 ESA in support of property transfer of a 5 story building located in downtown Honolulu. Results of the Phase 1 indicated potential subsurface soil contamination from TPH and PCB hydraulic fluids related to a decommissioned elevator and its associated equipment. ERA performed a Phase 2 Site assessment to determine extent of impacts.

Crocodile Partners, 537 Ala Moana Blvd Phase 1 Environmental Site Assessment and Hazardous Materials Assessment, HI: Principal in Charge: At the request of Crocodile Partners LLC, Environmental Risk Analysis LLC (ERA) performed a Phase I Environmental Site Assessment (ESA) for a single parcel of land located at 537 Ala Moana Blvd in Honolulu, Hawaii (hereafter referred to as the Site). The purpose of the ESA was to identify, to the extent feasible, Recognized Environmental Conditions (REC) associated with the Site. The investigation included a physical inspection of the property; review of current regulatory environmental database information; interviews of persons knowledgeable about the property, review of historical records; and preparation of a Phase I ESA Report. The ESA report conformed to the format outlined in the American Society for Testing and Materials (ASTM) Document E1527-05 and the USEPA All Appropriate Inquiries Rule. ERA was subsequently requested to perform a comprehensive hazardous materials assessment for the onsite structures. The survey consisted of lead and asbestos sampling and the production of a hazardous materials assessment report.

USBank, HI: Principal in Charge: Multiple Phase I Site Assessments (various locations): At the request of USBank Dr. Okoji performed 6 Phase I Environmental Site Assessments (ESA) for multiple parcels of land in Honolulu, Hawaii. The purpose of the ESA was to identify, to the extent feasible, Recognized Environmental Conditions (REC) associated with the Site. The investigation included a physical inspection of the property; review of current regulatory environmental database information; interviews of persons knowledgeable about the property, review of historical records; and preparation of a Phase I ESA Report. The ESA report conformed to the format outlined in the American Society for Testing and Materials (ASTM) Document E1527-05 and the USEPA All Appropriate Inquiries Rule.

USBank, HI: Principal in Charge: Phase I ESA: Hawaiian Cement Warehouse located at 91-055 Kaomi Loop in Kapolei, Hawai‘i. The property evaluated is identified by Tax Map Key (1) 9-1-026-06, lot consisting of 7.433 acres and three (3) buildings totaling 23,301 square feet.

Kamehameha Schools, HI: Principal in Charge: Multiple Phase I Environmental Site Investigations:

- Phase I Environmental Site Assessment (ESA) at the Jackson Volvo location, situated at 704 Ala Moana Boulevard in Honolulu, Hawai‘i. The property evaluated is identified by Tax Map Keys (1) 2-1-055:002 (lot consisting of 0.8699 acres) and (1) 2-1-055:018 (lot consisting of 0.2789 acres).
- Phase I Environmental Site Assessment (ESA) at multiple addresses located on Cooke Street, Auahi Street, and Pohukaina Street, Honolulu, Hawai‘i. The property evaluated is identified by current Tax Map Key (1) 2-1-053:032 (lot consisting of 4.187 acres).
- Phase I Environmental Site Assessment (ESA) at multiple addresses located on Ala Moana Boulevard, Coral Street, Keawe Street, and Auahi Street Honolulu, Hawai‘i. The property evaluated is identified by Tax Map Keys (1) 2-1-055:003 (lot consisting of 0.5306 acres), (1) 2-1-055:021 (lot consisting of 0.9256 acres), (1) 2-1-055:006 (lot consisting of 0.4904 acres), (1) 2-1-055:026 (lot consisting of 0.1148 acres), and (1) 2-1-055:038 (lot consisting of 0.8135 acres).
- Phase I Environmental Site Assessment (ESA) at multiple addresses located on Kekuanaoa Street, Iolani Street, and Mililani Street in Hilo, Hawai‘i. The property evaluated is identified by Tax Map Keys (3) 2-2-030:004 (lot consisting of 0.4171 acres), (3) 2-2-030:006 (lot consisting of 0.8245 acres), (3) 2-2-030:008 (lot consisting of 0.2686 acres), (3) 2-2-030:009 (lot consisting of 0.5165 acres), (3) 2-2-030:0010 (lot consisting of 0.2479 acres), (3) 2-2-030:0011 (lot consisting of 0.2365 acres), (3) 2-2-030:0012 (lot consisting of 0.8617 acres), and (3) 2-2-030:014 (lot consisting of 0.4018 acres).

Maui Land and Pineapple, HI: Project Manager: Phase I ESA for the Maui Pineapple Company (MPC) Kahului Seed Site, located off Haleakala Highway, in Kahului, Maui. The subject site was a 2 acre portion of TMK (2) 3-8-79:13 (formerly TMK (2) 3-8-01:16).

Marcus and Associates Inc. Kobe Steak House Phase I Environmental Site Assessment, HI: Principal in Charge: At the request of Yamada Pacific Inc. and Marcus and Associates Inc., Environmental Risk Analysis LLC (ERA) performed a Phase I Environmental Site Assessment (ESA) for a single parcel of land located at 1841 Ala

Moana Blvd in Honolulu, Hawaii. The Site is designated on Tax Maps as TMK (1) 2-6-009-006. The purpose of the ESA was to identify, to the extent feasible, Recognized Environmental Conditions (REC) associated with the Site. The investigation included a physical inspection of the property; review of current regulatory environmental database information; interviews of persons knowledgeable about the property, review of historical records; and preparation of a Phase I ESA Report. The ESA report conformed to the format outlined in the American Society for Testing and Materials (ASTM) Document E1527-05 and the USEPA All Appropriate Inquiries Rule.

Kamehameha Schools, Confidential Site: Program Manager: This confidential Site was used for over a hundred years as a truck fleet repair and maintenance facility, for warehousing and other heavy industrial activities. Previous investigations at the Site have identified TPH contamination in soil/rock, groundwater, and in free product form. Studies have also identified the presence of elevated lead levels in Site surface soils. Dr. Okoji assembled and managed a highly qualified team of environmental professionals to identify existing data gaps, provide services to fully characterize and delineate the Site and provide detailed recommendations for further investigation and site cleanup. Specifically, Dr. Okoji's team was tasked with the following:

- Provide expert witness support and opinion
- Delineate the lateral and vertical extent of free product contamination in groundwater.
- Provide fingerprinting analyses for free product source identification.
- Provide a free product recovery pilot test to evaluate the implementability, cost, and effectiveness of traditional remedial technologies.
- Determine true groundwater gradient at the Site (correcting for tidal influences) to provide information regarding free product and contaminant fate and transport conditions.
- Provide baseline chemical conditions for future determination of the status of the free product plume (stable, shrinking, migrating).
- Delineate lateral and vertical extent of hydrocarbon-related contaminants in soil/rock and groundwater at concentrations exceeding regulatory levels of concern.
- Determine if shallow soil vapor in plume areas contain site contaminants at levels that would pose a human health risk.
- Determine the nature and extent of possible chlorinated solvent contamination several areas on Site.
- Determine the nature of possible chlorinated pesticides and herbicide contamination in surface soil and groundwater near Building 8's refrigerator truck wash area.
- Perform a geophysical investigation to identify the presence and relative locations of physical features (i.e., lava tubes, bedrock fractures, utilities) and potentially the extent of the free product plume.

Hawai'i State Department of Health, Kea'au, HI: Program Manager: Performed the initial Phase 2 site characterization of arsenic in former sugar cane land over a several hundred acre area in Kea'au. To accomplish this task, the investigation focused sampling on areas with known or potential human exposure. The sampled areas included school playgrounds, community gardens and areas adjacent to residential areas. A main concern for the DOH was how to limit the uncertainty associated with conventional environmental sampling techniques. To limit the heterogeneity inherent to the method, the investigation implemented (for the first time in Hawaii) a multi increment composite sampling (MICS) methodology. MICSs can drive a skewed distribution (commonly found in environmental sampling) towards normality. For the Kea'au investigation a total of 40 increments (i.e. mini composite sample) was taken for each decision unit or area to be evaluated. The totality of the increments was composited and a larger 10 gram subsample sent for arsenic analysis. The laboratory arsenic results were deemed to better represent average site concentrations than concentrations achieved by simple traditional compositing methods or by averaging discreet sample points across a site. Additional subsamples for the physical and chemical properties of the soil were also obtained using multi increment compositing methods. Provided community relations support for the DOH.

Kamehameha Schools, Confidential Site: Program Manager: Implemented an evaluation of surface soil, surface water and groundwater at this confidential Quarry Site assumed to be the location of illegal dumping of C&D debris, metal, asphalt and unknown solvents. Dr. Okoji and his team planned and initiated an environmental investigation which included a geophysical survey to identify location and magnitude of debris as well as nature and extent of soil and groundwater contamination. The results of Dr. Okoji's study was used by the client to recover costs associated with the investigation and to facilitate further investigative activities.

Kamehameha Schools, Confidential Site: Program Manager: Dr. Okoji provided a third party review of various Remedial Alternatives Analysis & Response Action reports for ongoing litigation related to environmental

investigations at a confidential agricultural Site that included a Herbicide Mixing area and Heavy machinery Storage area. Dr. Okoji determined that there were significant deficiencies and bias in the site characterization, evaluation and recommendations for the Site. Dr. Okoji provided detailed recommendations to address the deficiencies. As part of his scope, Dr. Okoji also performed a comprehensive Administrative Records Review.

Architects Hawaii Ltd, Lahaina, HI: Principal in Charge: Performed a limited Phase II Environmental Site Assessment at the Lahaina Fire Department located at 1860 Honoapiilani Highway, Lahaina, HI. The Limited Phase II ESA was conducted to determine the presence or absence of total petroleum hydrocarbon-diesel (TPH-D) in Site surface soils in the immediate vicinity of a currently used diesel Aboveground Storage Tank (AST) proposed for removal. The assessment was also conducted to determine if an onsite shed proposed for demolition requires special disposal considerations based on leachable lead concentrations.

Agribusiness Development Corporation, Ewa, HI: Principal in Charge: Provided professional services to perform a Phase I Environmental Site Assessment (ESA) for an agricultural easement encumbering a parcel situated at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawai‘i. The subject site covers an area of 108.221 acres. AMEC provided the following services in accordance with ASTM E1527-05: conducted an historic aerial photograph review; conducted a database search for property and adjacent properties; conducted an historic property use review of property; executed a site walk; and prepared a Phase I Report. Based on the Phase I Investigation, it was determined the environmental concerns for the Site are minimal. As the land is intended to remain under agricultural use in perpetuity, further investigation was not warranted.

State of Hawaii, Department of Education, HI: Project Manager: Phase I Environmental Site Assessment, Phase II Sampling and Analysis Plan and Title Documents for Kalaheo Elementary School Land Acquisition, Kalaheo, Hawaii.

Hawai‘i State Department of Health, Kakaako Brownfield Unit 8 Site, HI: Project Manager: Performed a preliminary site-specific Phase 2 assessment and screening level risk assessment of a former incinerator site slated for redevelopment. Contaminants of concern included heavy metals, dioxins and polyaromatic hydrocarbons. Recommendations were made to conduct a site-specific baseline risk assessment that considers site-specific exposure assumptions, partitioning of data based on future land use and partitioning of data based on lateral and vertical dispersion of contaminants.

County of Maui, Waiale Landfill, HI: Project Manager: Contracted by the County of Maui to perform a Phase II Site Investigation to evaluate existing site conditions at the Waiale Landfill. Previous environmental site assessments and investigations conducted for the adjacent roadway indicated that landfill waste was found in several locations along the roadway alignment during excavation activities for road construction. The Phase II delineated the limits of waste placement and property boundaries, by performing analysis of surface and trenched soils. Determined the thickness of the surface soil layer above the top waste layer within the landfill. Currently providing the County of Maui with an Engineering Evaluation and Cost Analysis (EECA) detailing closure options of the landfill.

Coca Cola Bottling Enterprises, Oahu, HI: Project Manager: Conducted a Phase 2 and Phase 3 site investigation of soils and groundwater and site-specific risk assessment for the Coca Cola Bottling Facility. The site has undergone substantial remediation including removal of impacted soil, application of Oxygen Reaction Compounds to groundwater and implementation of a Soil Vapor Extraction System. Environmental Hazard Evaluation (Risk assessment) performed to determine the suitability of the property for future residential use. Chemicals of concern and pathways of concern include BTEX and fuel related compounds. Pathways of concern include direct contact with site media as well as vapor intrusion into buildings and ambient air.

Risk Assessment and Toxicology

Environet Inc., Ordnance Reef, HI: Principal Scientist: Currently providing human health risk assessment support for an underwater munitions site off the Waianae Coast of Oahu, HI. Dr. Okoji was specifically tasked with reviewing and providing input on the project Sampling and Analysis Plan, development of the Conceptual Site Model and providing a human health risk assessment. Risk assessment will address carcinogenic and noncarcinogenic risks to recreational divers, adult and child subsistence fishermen and adult and child recreational fishermen. Media to be evaluated include: sediment, water, fish and invertebrate tissues. Dr. Okoji has also attended and present results of the risk assessment at various regulator and public meetings on behalf of Environet and the USACE.

Environet Inc., Hawaii Undersea Military Munitions Assessment, HI: Principal Scientist: Dr. Okoji performed a human health risk assessment to support the U.S. Department of Defense’s efforts to assess the

potential risk to human health and the environment of an historic munitions disposal site located about 5 miles south of Pearl Harbor. Risk assessment was performed assuming recreational divers, adult and child subsistence fishermen, adult and child recreational fishermen and adult and child residents may be exposed to seafood contaminated with munitions-related compounds.

US Navy, Orote Landfill, Guam: Senior Toxicologist: Performed a preliminary human health risk evaluation and baseline human health risk evaluation for the consumption of seafood caught near the Orote Landfill Site. Chemicals of concern included PCBs, dioxins/furans, metals, chlorinated pesticides, PAHs and Ordnance compounds. Provided extensive technical support on PCB and Dioxin risk assessment on behalf of Navy clients in numerous face-to-face conferences with the EPA, Guam EPA, ATSDR and the public. Successful in negotiations with EPA Region 9 to make risk management decisions based on more realistic data supported by site-specific conditions rather than overly conservative default assumptions. Provided the Navy with technical arguments on the complexities of interpreting information from biomarker data. Provided the Navy with extensive toxicological support regarding the carcinogenic evaluation of PCBs. Significant participation in developing and evaluating data from a seafood consumption survey in the Agat Bay area on the island of Guam. Extensive involvement in development and implementation of a more comprehensive study to evaluate human health risks associated with the Orote Landfill site. Pivotal in developing site conceptual models and exposure routes. Represented Navy client in numerous interactions with the people of Guam. Commendations by ATSDR for public support efforts. Risk assessments have released the Navy from potential liability along approximately three miles of coastline on the Orote Peninsula.

Environmental Science Corporation, Camp Zama Fuel Spill Characterization and Risk Assessment, Camp Zama, Japan: Principal Scientist: Prepared a site-specific human health and ecological risk assessment for the Camp Zama underground FJ-1 fuel pipeline leak. The leak was associated with a 52,000 gallon capacity FJ-1 fuel tank (1024-n) which supplies fuel to an incinerator day tank (106 gallons) and boiler tank. The amount leaked was estimated at 2,000 gallons. Immediately following the identification of the leak, emergency remedial activities were undertaken to clean up visible oil at the leak site, the surface of the Camp Zama retention pond and downstream creeks and outfalls. The purpose of the human health risk evaluation was to estimate potential risks to human and ecological health, if any, that may be posed by residual FJ-1 fuel following emergency remedial activities. The site-specific human health risk assessment also included a qualitative uncertainty analysis. AMEC provided significant input into the sampling and analysis plan. Two deliverables were produced including a comprehensive baseline human health and ecological risk assessment and a "concise" public version. The site-specific risk assessment has undergone regulatory review and has been accepted.

US Navy, Pearl Harbor HI: Project Manager: Provided extensive review and consulting on a previously conducted screening human health risk assessment for the site. Recalculated quantitative risk estimates using current and accepted EPA protocols and methodology. Provided technical support on the Site-specific Baseline Human Health Risk Assessment. Toxicological and risk assessment issues addressed include validity of modeling chemical concentrations in fish tissue from sediment concentrations, scientifically justifiable methodologies for estimating exposure point concentrations and the relevance of the TEF approach for estimating PCB risk. Risk assessment was used to make risk management decisions regarding the recreational use of the site.

Okahara and Associates, Pohakuloa Training Area, HI: Project Manager: Contracted by Okahara and Associates to provide EIS technical support for the State of Hawai‘i Department of Transportation expansion of Saddle Road on the Big Island of Hawai‘i. Dr. Okoji was specifically tasked with determining the human health risk from potential depleted uranium originating from PTA during military training activities to receptors that may traverse the proposed roadway. Project involved depleted uranium surface soil sampling and air modeling to receptor locations. Project deliverables included a Sampling and Analysis Plan, the results of the surface soil sampling event, a source determination and background evaluation and Human Health Risk Assessment (HHRA) for uranium (U) isotopes. The assessment addressed the public's concern that depleted uranium originating from military operations at PTA may impact the health of those that may be involved in the construction of the proposed alignment as well as those that may use the road in the future. The risk assessment considered both chemical and radiological toxicity from uranium. Assisted Okahara in responding to community comments in the EIS at 2 public meetings.

AMEC Earth and Environmental Inc, US Navy, Pearl City Fuel Annex: Principal Toxicologist: Conducted a limited Tier II site-specific human health risk assessment for the Pearl City Fuel Annex site (PCFA), located in the Pearl Harbor Naval Complex (PHNC), Hawaii. Human health risks were estimated for a potential trespasser and maintenance worker scenario exposed to surficial soils. This risk assessment provided further characterization of human health risks from surface soil impacts resulting from past site activities associated with the operation and maintenance of the facility. Potential sources of contamination include: product releases, the sandblasting and painting of above-ground storage tanks (ASTs) and associated pipelines, and past tank sludge and condensate

disposal practices. Currently conducting a Tier I, (Risked Based Screening) and Tier II (Baseline Human Health Risk Assessment) for the PCFA Site. Exposure pathways evaluated included dermal contact and oral ingestion of contaminated soils and inhalation of ambient air. 649 surface and subsurface soil samples from 9 total investigations are included in the analysis. Receptors include current and future industrial workers, construction workers, offsite residents and trespassers.

PCR Environmental, Former Naval Station Agana, Guam: Principal in Charge: A site-specific Tier II (Baseline Human Health Risk Assessment) was prepared for the POI-3 and POI-18 sites located at the Former Naval Air Station Agana, Tiyan, Guam. Human health risks were estimated for future construction workers if construction work were conducted at the Site. Although exposure pathways were considered incomplete for future industrial/commercial workers and hypothetical residents, risk were estimated for these receptors assuming impacted soils are brought to the surface. The risk assessment provided further characterization of human health risks from Site soils resulting from past activities associated with the operation and maintenance of the facilities. Risk assessment has lifted all land use restrictions from both Sites.

Environmental Science International, US Navy, Pearl Harbor Naval Complex, Building 35: Principal Toxicologist: Performed a Tier I, (Risked Based Screening) and Tier II (Baseline Human Health Risk Assessment) for an area north of Paint Shop Building 35 located in the Public Works Center (PWC) Geographic Study Area (GSA) within the Pearl Harbor Naval Complex (PHNC) on the island of Oahu, Hawaii. The risk assessment provided further characterization of human health risks from surface and subsurface soil impacts resulting from past site activities associated with the operation and maintenance of the Site. The assessment was conducted using all available data collected during Site investigations by ESI in December of 2009 and from relevant previous investigations. Receptors evaluated in this HHRA included current and future industrial Site workers, future construction workers and hypothetical residents. Exposure pathways considered in the Tier I screening level assessment included: ingestion of soil, dermal contact and absorption of chemicals in soils, leaching potential, inhalation of chemicals via fugitive dust and inhalation of volatiles emanating from soil. Media evaluated included surface and subsurface soil only. The Site was treated as a single Decision Unit (i.e., receptors were assumed to be exposed to all areas of the Site and not just specific areas). Chemicals evaluated in the risk assessment included heavy metals, PCBs, acetone, ethylbenzene and toluene.

Environmental Science International, US Navy, US Naval Base Yokosuka, Japan: Principal Toxicologist: Currently performing a Tier I, (Risked Based Screening) and Tier II (Baseline Human Health Risk Assessment) for A Tier IA Risk-Based Screening and Tier II Site-specific Baseline Human Health Risk Assessment (BHHRA) were prepared for two separate sites proposed for the new Kinnick High School at Naval Base Yokosuka, Japan. The assessment was conducted using all available data collected during Site investigations by ESI in 2010 and from relevant previous investigations. Receptors evaluated in this HHRA included current and future industrial Site workers, future construction workers, future high school students and hypothetical residents. Exposure pathways considered in the Tier I screening level assessment included: ingestion of soil, dermal contact and absorption of chemicals in soils, leaching potential, inhalation of chemicals via fugitive dust and inhalation of volatiles emanating from soil. Media evaluated included surface and subsurface soil only. Data was provided for multiincrement samples. Chemicals evaluated in the risk assessment included heavy metals, PCBs, dioxins, SVOCs, VOCs, chlorinated pesticides and organophoshate herbicides. Childhood risks calculated using Age-Dependent Adjustment Factors for mutagenic compounds.

US Navy, Marine Corp Base Hawaii (MCBH), Kaneohe, HI: Project Toxicologist: Performed a Tier IB site-specific human health risk assessment for property located in the vicinity of Mokapu Mall, between MacLachlan Street and McLennon Drive, at Marine Corps Base Hawai'i (MCBH) in Kane'ohe, Hawai'i. Specifically, the assessment evaluated health risks to human receptors that may work at or frequent a future Child Development Center proposed to be located at the Site.

US Navy, NAF Atsugi, Japan: Project Toxicologist: Conducted a preliminary risk evaluation and site-specific assessment of surface and subsurface soils at a U.S. Naval facility in Atsugi, Japan. Contaminants of concern include PCBs, dioxin, arsenic, chlordane and DDD. Obtained regulatory site closure on a Naval base located outside the U.S. Risk assessment used to obtain No Further Action status.

US Navy, Red Hill, HI: Task Manager: Performed a comprehensive Exposure Assessment and Multimedia Preliminary Human Health Risk Evaluation for past and potential releases of petroleum compounds, including PAHs from the Navy's Red Hill Storage Tanks in the mountainside adjacent to and above Pearl Harbor. Tasks included the evaluation of risk from historical or accidental releases of hazardous substances and its impact to human and ecological health. Both site-specific concentrations as well as possible catastrophic release scenarios were evaluated. Modeling of potential releases required multidisciplinary input from toxicologists, geologist, GIS

specialists, groundwater modelers, and remedial engineers. Pivotal in developing site conceptual models and exposure routes.

Rocketdyne Propulsion and Power, Santa Susana Field Laboratory (SSFL), CA: Project Manager: Provided site-specific human health risk assessments for The Boeing Company, Rocketdyne Propulsion and Power, NASA and the DOE as part of the RCRA Corrective Action Program at the SSFL. The risk assessments were conducted in response to requirements specified in three Hazardous Waste Permits issued to Rocketdyne by DTSC. Chemicals of concern include Total Petroleum Hydrocarbons, PCBs, PAHs, benzene, toluene, ethylbenzene, xylene, naphthalene, volatile organic compounds, semivolatile organic compounds and metals.

U.S. Army Corp of Engineers, Fort Irwin, CA: Project Toxicologist: Performed site-specific human health risk assessments at 14 Hazardous Waste Management Units at the U.S. Army National Training Center at Fort Irwin, California. Responsibilities include risk assessment approach negotiations with the Department of Toxic Substances Control Human and Ecological Risk Division and performance, standardization of methodology and performance of the risk assessments.

AMTRAK: Redondo Junction Site-Wide and Location Specific HHRA, Los Angeles, CA: Principal Toxicologist. Assisted in the development of work plans and field sampling plans. Prepared site-specific human health risk assessments for the Amtrak Redondo Junction located in Los Angeles, California. Risk assessments were prepared to determine if chlorinated solvents and other volatile chemicals were posing an unacceptable indoor air human health risk to Amtrak workers at the facility as a whole as well as specifically in Building 18. Workers within various structures at the Site were evaluated for exposures to volatile chemicals resulting from subsurface vapor intrusion. Data assessed in the quantitative analysis included soil vapor data collected in a February 15, 2010 soil vapor investigation. In total, 9 soil vapor samples (8 primary samples and 1 duplicate) were collected at the perimeter of Building 18 and analyzed for the EPA TO-15 Super suite of compounds and Gasoline Range Total Petroleum Hydrocarbons (TPH). 80 other SV samples were collected from other areas of the Site. 19 constituents were detected in soil vapor at the Site. These chemicals include, TPH-Gasoline, BTEX, 1,1,1-Trichloroethane, PCE, and TCE.

Enviroquest Inc., USACE Japan Environmental District, Iwakuni Japan: Principal Scientist: Provided a human health risk assessment for an existing Solid Waste Landfill site located at U.S. Marine Corps Air Station (MCAS), Iwakuni, Japan. The landfill was defined by four (4) distinct zones, three (3) of which are similar in size and one (1) that was slightly larger than the others. A total of fifteen (15) soil vapor samples were collected from the landfill. Three (3) soil vapor samples were collected from a medial transect of each of the (3) smaller zones, resulting in a total of nine (9) samples from the smaller zones, and six (6) were collected in the larger zone. In addition, nine (9) surface water samples were collected along various locations on the perimeter of the landfill.

The specific scenarios evaluated included hypothetical construction workers, golf course attendants and future users of the golf course. The human health risk assessment included a Tier IA: Risk Based Screening and Tier II: Baseline Human Health Risk Assessment and was performed in accordance with standard principles and approaches identified in the U.S. Navy Human Health Risk Assessment Guidance (Pioneer Technologies Corporation 2008) and the Department of Defense Vapor Intrusion Handbook (Tri-Service Environmental Risk Assessment Workgroup 2009), as well as the United States Environmental Protection Agency's (USEPA) Risk Assessment Guidance for Superfund (RAGS): Human Health Evaluation Manual, Part A (USEPA 1989) and other USEPA guidance documents. Risk assessment guidelines established by other federal agencies and state agencies were also considered when appropriate.

Army National Guard, Fort Ruger, Hawai'i: Project Toxicologist: Conducted a site-specific lead risk assessment for a former rifle and pistol range. Receptors included children and adult visitors to the monument and onsite workers. Evaluated lead from several particle size fractions. Provided extensive technical support in developing field sampling plan and data objectives. Extensively involved in determining options for site cleanup and remediation. Risk assessment compared results from USEPA IEUBK and the California Department of Toxic Substance Control lead models.

Hawai'i Department of Health, Lead in Drinking Water Study at all DHS Licensed Child Care Centers, State of Hawai'i, HI: Program Manager: Provided technical and public relations support to the State of Hawai'i Department of Health's Safe Drinking Water Branch regarding a State-wide testing program of all drinking water sources at registered child care facilities. The federally-funded program was intended to help safeguard young children who are considered to be more vulnerable to lead exposure. With over 1,000 registered facilities this project is one of the largest drinking water sampling tasks of its kind in the State of Hawai'i. Produced a state of the art information technology resources database to manage everything from scheduling and routing, to correspondence management and results analysis and reporting. In coordination with the laboratory undertaking the analysis, AMEC implemented a highly automated system to manage the receipt and analysis of results. All results were

automatically imported into an AMEC database system and analyzed. If lead was found at levels above the acceptable limit, AMEC implemented a range of notification procedures to prevent further potential exposure of children to the lead and also provided in-depth lead abatement strategies to the facility owners and/or managers. As part of this process, a series of informational packets were prepared to update the multiple government entities, including the Safe Drinking Water Branch and the Department of Human Services. During this process, Dr. Okoji also served as the HDOH and DHS public media representative in a KHON news story.

Hawai‘i State Department of Health, Keaukaha, HI: Project Manager: Conducted an ambient air characterization study and baseline human health risk assessment of a light industrial district and airport. Industries present and areas of concern include airline industries, harbor facilities, diesel fueling station and truck yard, auto paint shops, wood treatment plants, fiberglass shops, compressed gas industries, petroleum storage tanks, naphthalene storage tanks, propane storage tanks and an old sewage treatment facility. Ambient air monitoring utilized passive GoreSorber sampling devices as well as active Hi-vol samplers. GoreSorbers allowed evaluation of air impacts over a 7-day period. Traditional active samplers capture significantly shorter periods of time. Receptors evaluated include residents living in the nearby Hawaiian Homelands residential district. Assisted the Department of Health in communicating potential risks to residents at several public meetings.

PVT Land Company, PVT Landfill, Nanakuli, HI: Principal in Charge: Produced a work plan and baseline human health risk assessment to evaluate recycling of construction and demolition (C&D) materials for use as fuel in a liquid gas manufacturing plant. The investigation was prepared to address Hawaii Department of Health (HDOH) concerns regarding the environmental and human health safety of recycling, including the use of a crushing/processing plant at the PVT Landfill Site. The proposed plant is part of a larger recycling initiative that when implemented will significantly reduce the volume of material going to landfill, provide the State with an additional renewable source of natural gas and align PVT operations with the State’s Clean Energy Initiative and Integrated Solid Waste Management Plan. Specifically, the HDOH is concerned with the following potential impacts associated with the proposed recycling program: air/dust impacts during delivery of bulk material, air/dust impacts during mining of closed portions of the landfill for feedstock (bulk material), air/dust impacts during crushing and shredding of bulk material, air/dust impacts from onsite storage of processed material, leaching potential of stored feedstock or processed material.

W.H. Shipman Ltd, Kea‘au, HI: Project Manager: Currently providing a Phase 2 soil characterization and Phase 3 risk assessment of former sugar cane lands contaminated with arsenic, lead, pesticides and herbicides. Supporting client’s efforts to develop land under a future residential use scenario. Using bioaccessibility data gathered for the site in arguments to the HDOH. Providing extensive community relations and regulatory agency support.

CSV Hospitality LLC, Kea‘au, HI: Project Manager: Performed site investigation and a site-specific risk assessment for a 5 acre site in Kea‘au, HI. Site was formally used for agriculture and was heavily contaminated with high levels of arsenic. Provided extensive community relations and regulatory agency support over a 2 year period. Held public meetings in collaboration with the HDOH. Produced engineering cost analysis, mitigation and implementation plans. Successful in obtaining regulatory support for construction of a hotel and commercial facility at the site without soil removal.

Matsubara, Lee and Kotake, HI: Project Manager: Provided litigation support regarding a property that was the site of an automobile dealership, a warehouse and a former wood treatment site. Chemicals of concern include pesticides used in wood preservation: arsenic, chromium, dioxins/furans, and pentachlorophenol as well as other heavy metals. Evaluated soil and groundwater data and attended meetings with plaintiffs’ consultants. Risk assessment used to define the cleanup level goals and areas of remediation.

Hawai‘i State Department of Health, PVT Landfill, HI: Project Manager: Performed an air monitoring and human health risk assessment of a municipal solid waste and construction and demolition landfill. Chemicals evaluated include landfill gases and heavy metals. Receptors evaluated include nearby residents. Assisted Department of Health in communicating potential risks to the community.

City and County of Honolulu, Waimanalo Landfill, HI: Project Manager: Prepared human health risk assessment of the beneficial use of municipal solid waste incinerator ash from the City and County of Honolulu's H-Power facility. The project considered the proposed use of the ash *in lieu* of clay as part of the final cover in the closure of a city-owned landfill. The risk assessment considered risks from lead, other heavy metals, and dioxin and furan congeners. Risks during and after the closure were evaluated under several potential scenarios. Receptors included workers, on-site trespassing children, and off-site children. Affected media included the ash, ash leachate, ash-derived dust, surface water and sediment in Pearl Harbor, and fish. Dust generation and dispersion modeling was performed as well as modeling of surface runoff of ash into nearby surface water and sediment. Ash-specific absorption adjustment factors were derived. On-going projects include risk evaluation of other beneficial uses of the ash, including use as daily cover at an operating municipal landfill and use as aggregate in the road materials.

City and County of Honolulu, Waipahu Incinerator, HI: Project Manager: Performed a human health risk assessment of soil, municipal waste combustion ash, and debris present at the site of the former Waipahu Incinerator Complex and the adjacent Waipahu Ash Landfill. Receptors included City workers from who currently occupy the old incinerator building, nearby residents, and children who frequent the nearby Waipio Peninsula Soccer Complex. Designed and executed real-time monitoring of ambient airborne respirable dust levels indoor and outdoors. Prepared technical memorandums regarding penalties assessed by the State Department of Health. Developed supplemental environmental programs for the city for use in penalty negotiations. Completed work plans required for the closure of the Waipahu Incinerator Complex.

Costco Wholesale Corporation, HI: Project Manager: Performed a site-specific human health risk assessment for a commercial property undergoing a site evaluation for property transfer. The former MGP site had a history of petroleum product releases. Contaminants of concern included Total Petroleum Hydrocarbons, PCBs, PAHs, benzene, toluene, ethylbenzene, xylene, naphthalene and heavy metals. Evaluated the potential carcinogenic and noncarcinogenic risks from contact with site soil and groundwater via ingestion and dermal absorption via TPH Working Group and State of Massachusetts methodologies. Assessed the health hazards of inhaling soil vapor in both ambient surroundings and within the warehouse store using laboratory-specific data as well as data obtained from mathematical modeling from free product, groundwater and soil concentrations. Derived chemical specific absorption factors for site chemicals including arsenic and several PAHs. Evaluated soil, soil vapor and groundwater data and advised Brewer Environmental consultants, Costco attorneys and parties involved in the land transfer on appropriate cleanup goals. Risk assessment successfully used by Costco to obtain letter of completion within the Hawai‘i State Department of Health’s Voluntary Response Program.

Honolulu Resource Recovery Venture, HI: Evaluated the potential use of municipal solid waste incinerator ash as an aggregate in roadway materials. Performed data collection, summary and analysis of total and respirable particulates in air due to road demolition activities of ash-amended asphalt. Ambient air monitoring data and air-modeling techniques were used to estimate COPC concentrations in soil and air. Particulate deposition data was used to model COPC uptake into plants that could potentially be consumed by humans. Health risks were evaluated for potential receptors using estimated heavy metal content of site-specific media. Project is ongoing.

Sprint Lot Risk Assessment, HI: Project Manager: Performed a site-specific human health risk assessment for a commercial property and office building. The former MGP site had a history of petroleum product releases, an onsite fuel pipeline and free product releases under the office building. Contaminants of concern included Total Petroleum Hydrocarbons, PAHs, benzene, toluene, ethylbenzene, xylene, naphthalene etc. Evaluated the potential carcinogenic and noncarcinogenic risks from contact with site soil, groundwater, soil vapor and weathered kerosene-like free product. Assessed the health hazards of inhaling soil vapor in both ambient surroundings and within the Sprint Office Building using laboratory-specific data as well as data obtained from mathematical modeling from free product, groundwater and soil concentrations. Derived chemical specific absorption factors for site chemicals including arsenic and several PAHs. Advised Brewer Environmental consultants and the owners of the property of potential health risks and remedial alternatives.

Kerr Mill, MA: Performed data summary and risk assessment calculations on a historical petroleum product spill site. Contaminants of concern included volatile and semivolatile petroleum hydrocarbons including naphthalene, 2-methylnaphthalene, benzo(a)pyrene and anthracene. Risk assessment used to help define the cleanup level goals and areas of remediation.

Confidential Client, HI: Performed risk assessment evaluation in support of litigation regarding a commercial property on which there were historical releases of benzene, toluene, ethylbenzene, naphthalene, and coal tar residues. Advised attorneys of risk assessment issues during settlement conferences. Risk assessment used to help define the cleanup level goals and areas of remediation.

Jan Chatten-Brown and Associates, CA: Provided litigation support regarding a class action lawsuit claiming adverse health effects from exposure to organophosphate pesticides. Comprehensively evaluated and summarized toxicological data involving neurotoxicity, hepatotoxicity, renal toxicity and carcinogenesis.

Alston, Hunt, Floyd & Ing, HI: Project Manager: Provided litigation support for a residential property that was contaminated with arsenic. Advised attorneys on the toxicity of arsenic compounds, reliable biomarkers of exposure, sampling methods and potential exposure to other toxic compounds or biological agents.

Confidential Client, GA: Prepared toxicological summaries on creosote and related mixtures in support of litigation.

Confidential Client, AZ: Performed a comprehensive review of a Monte-Carlo Based Risk assessment on a former MGP site in Arizona. Chemicals identified in samples from the Site include the semi-volatile organic chemicals

called polynuclear aromatic hydrocarbons (PAHs) found in lampblack and volatile organic chemicals: benzene, toluene, ethylbenzene, and xylenes (BTEX) found in fuels.

California EPA, CA: Performed comprehensive literature review and analysis on the toxic properties of ethyl chloride. Conclusions used for the quantitative estimation of risk for regulatory purposes.

Graduate Student Researcher for Dr. John Froines, Professor of Environmental Toxicology and Director of the Center for Occupational and Environmental Health, UCLA: Examined the toxicokinetic and molecular events involved in arsenic induced carcinogenesis. Collaborated with the National Institute of Environmental Health Sciences (NIEHS) and the National Toxicology Program (NTP) in designing and conducting subchronic and chronic NTP animal bioassays, pharmacokinetic analysis, pre-clinical, GLP pharmacology, toxicology and safety studies in animals with the goal of regulating arsenic in drinking water.

Undergraduate Researcher for Dr. Jonathon E. Ericson, Professor of Environmental Analysis & Design, University of California, Irvine: Performed comprehensive literature review and analysis on the toxic effects of lead. Identified potential health implications and possible initiatives for soil remediation.

Graduate Student Researcher for Dr. Michael Collins, Professor of Environmental Toxicology, UCLA: *Researched the impact of nutritional deficiencies (i.e. folate, methionine, choline and vitamin B12) on the occurrence of neural tube defects in rats and mice. Participated in the development of an animal model for abnormal neural tube closure using a combination of in vivo and in vitro cell culture techniques. Performed gross necropsies, folate measurements via the bacterial growth assay, choline measurements via GC-Mass Spectroscopy and homocysteine measurements via HPLC in serum and other bodily tissues.*

Clinical Research Assistant for Dr. Marian Swendseid, Professor of Nutrition, UCLA: Provided scientific and laboratory support for a clinical nutrition study conducted by the Western Human Nutrition Research Center and UCLA on choline status dependence on folate nutriture.

Researcher: Dr. Ricardo De Leon, Professor of Environmental Analysis and Design, University of California, Irvine: Assisted in developing a PCR based assay for analyzing environmental water and soil samples containing infectious microorganisms. Compared the newly developed PCR method with the standard plaque assay.

Research: Dr. Roger Fujioka, Professor of Microbiology & Head of the Water Resources Research Center, University of Hawai‘i at Manoa: Quantified E. Coli levels in soil samples. Quantified nitrogen, phosphorous, coliform and E.coli levels in environmental water samples.

Industrial Hygiene

MMI Realty Services Inc (Kahala Mall Flood), Honolulu, HI: Project Manager: Provided 24- hour/day on call support to MMI Realty Inc. following a significant flooding event in which the entire indoor mall was flooded to approximately 1-2 feet of storm water. Provided remedial workplans and specifications for immediate water removal and drying of the interior space. Instructed and oversaw mall representatives and their contractors during remedial efforts. Due to Dr. Okoji’s disaster management efforts, the mall was reopened 4 days after the water intrusion event. Following emergency actions, MMI Realty retained Dr. Okoji’s team to manage all non-emergency remediation at the mall. Non-emergency work included drying of internal wall spaces in mall common areas and later removal of significantly flood impacted building materials. Flood and mold assessments were conducted for all mall responsible areas as well as separately for tenant responsible areas. Work plans were provided to MMI Realty Inc, Kahala Mall tenants and their contractors detailing the specific protocols and precautions necessary during removal actions. Dr. Okoji created a database of every wall or building material affected by the flood. Data presented in tabular and graphic formats. Photodocumentation was also provided for all affected demising walls. Provided remedial oversight and post-remedial verification assessments during work activities. Ensured all contractors performed work to protocol and the appropriate standard of care. Periodically sampled building materials and air for mold to protect client from future claims. Provided hourly work logs and daily summaries to client ensuring they received maximum insurance reimbursement. Provided experts witness testimony during litigation proceedings including during appraisal hearings. Client received approximately 90% of their insurance claim in large part due to Dr, Okoji’s testimonies. Project was one of the largest flood remediation jobs in the State of Hawaii.

O’Connor Playdon & Guben LLP, Kailua Kona, HI: Principal Toxicologist: ERA was hired to provide expert witness and consulting services in support of litigation. ERA was requested to review defendant expert witness reports and provide rebuttal. ERA provided multiple declarations to support plaintiff argument. Also provided sampling and analysis services for mold and sewage related organisms. Designed studies to determine source of

water intrusion and was a resource to plaintiff medical experts regarding use of medical tests to help support the case. Project is Ongoing:

John Bansemer Construction, Asbestos Survey, Kealakekua, HI: Principal in Charge: Environmental Risk Analysis, LLC (ERA) was retained by John Bansemer Construction Inc. to conduct an asbestos assessment of the space occupied by the University of Hawaii, West-Hawaii campus located at 81-964 Haleki'i Street in Kealakekua, Hawai'i. This survey was performed in accordance with federal, state, and local regulatory requirements.

Limberg Trust, Asbestos Survey, Kealakekua, HI: Principal in Charge: Environmental Risk Analysis, LLC (ERA) was retained by the Limberg Trust to conduct an asbestos assessment of the space occupied by the University of Hawaii, West-Hawaii campus located at 81-970 Haleki'i Street in Kealakekua, Hawai'i. This survey was performed in accordance with federal, state, and local regulatory requirements.

Occidental Insurance, Hazardous Materials Survey and Remediation, Honolulu, HI: Principal in Charge: Performed a comprehensive hazardous materials survey and asbestos remediation at a 10,000 square foot facility located at the current Occidental Insurance building. Provided air monitoring for the duration of the remediation process to verify that the remedial containment and High Efficiency Particulate Air (HEPA) exhaust filter were working efficiently. Asbestos results were within acceptable limits (less than or equal to 0.01 fibers per cubic centimeter of air sampled via Phase Contrast Microscopy (PCM)) for all air monitoring locations. Air monitoring locations were located at the containment entrance and at the exhaust output. Additional air samples collected from an adjacent office space (per tenant request) did indicate an elevated number of particulate fibers as analyzed using PCM. PCM does not differentiate between fiber types (asbestos, dust, cotton, fiber glass, etc.). Confirmation Transmission Electron Microscopy (TEM) analysis of these samples resulted in <0.0006 asbestos fibers per cubic centimeter of air, which is within acceptable limits. Clearance air samples collected at completion of the abatement activities were within acceptable limits (less than or equal to 0.01 fibers per cubic centimeter of air sampled). The abated space was cleared for reoccupancy. Post-remedial visual verification also confirmed that asbestos containing materials (as identified in the ERA March 2010, Asbestos Survey) were properly abated.

American Savings Bank, Kahului Branch: Principal Scientist: Performed a facility wide mold and water intrusion assessment at the American Savings Bank, Kahului Branch. Assessment included over 30 distinct spaces within the structure including a separate loan office and former doctor's office space. Indoor air samples were collected from approximately 10 spaces presumed mold impacted. The assessment revealed significant and excess mold spores in a single area historically impacted by water intrusion. Provided mold remediation protocols and facilitated remedial efforts.

American Savings Bank, Kahului Branch: Principal Scientist: Performed a facility wide mold and water intrusion assessment at the American Savings Bank, Kahului Branch. Assessment included over 30 distinct spaces within the structure including a separate loan office and former doctor's office space. Indoor air samples were collected from approximately 10 spaces presumed mold impacted. The assessment revealed significant and excess mold spores in a single area historically impacted by water intrusion. Provided mold remediation protocols and facilitated remedial efforts.

American Savings Bank, Lahaina, HI: Principal Scientist: Performed a facility-wide mold assessment of the American Savings Bank, Lahaina Branch. Provided an assessment report and mold remediation protocols. Provided third party oversight of remedial activities.

LI & TSUKAZAKI, Attorneys at Law, LLC: Principal Scientist: Environmental Risk Analysis, LLC (ERA) was retained by Mr. William McCohnell through Philip Li, Esq to conduct a limited moisture and mold assessment of the condominium unit designated by Unit # 1302 at 19 Pohina Street, Wailuku, Maui, Hawaii. ERA provided a third party independent post-remedial verification assessment of the unit, visually assessed for the presence or absence of suspect visible mold growth (SVMG) collected tape lift samples for laboratory confirmation. Data was collected for potential lititgation.

Loveland Academy, Honolulu, HI: Principal in Charge: Environmental Risk Analysis LLC (ERA) was retained by Loveland Academy to conduct a Three-Year Asbestos Hazard Emergency Response Act (AHERA) asbestos re-inspection of the Loveland Academy campus buildings. The re-inspections were performed to comply with applicable Federal and State guidelines requiring that secondary schools (K-12) be re-inspected every three years for any changes in the condition of assumed and confirmed asbestos-containing building materials (ACBMs). ERA re-inspected accessible areas within each building and noted ACBM conditions using the seven AHERA assessment categories. ERA was then re-contracted by Loveland to perform third-party oversight of remedial activities.

Kincaids (Restaurants Unlimited Inc.), Honolulu, HI: Project Manager: Provided initial sewage intrusion assessment and remediation protocol following a significant sewage backflow event of Kincaid's neighboring

tenants at the Ward Warehouse Center. Protocol included standard of care procedures to remediate the area, protect public health and limit client's liability. Provided on-call 24-hr support during the critical first days of the sewage backup.

Department of Agriculture Lead-based Paint Survey, HI: Principal in Charge: Performed a lead paint survey at nine (9) Department of Agriculture facilities located on five (5) islands. The survey included field investigation and sampling, testing and analysis, report of findings, recommendations and a cost estimate of corrective measures. The lead paint assessment consisted of the use of an x-ray fluorescence (XRF) analyzer and confirmation lead paint chip samples. The XRF analyzer was used as a screening device on all internal and external painted surfaces of the facilities. Lead paint chip samples will be collected randomly to corroborate XRF results.

Hawai'i State Department of Accounting and General Services (DAGS), Kaneohe, HI: Project Manager: Interpreted lead and asbestos data collected at King Intermediate School classrooms and buildings. Worked closely with the DOH Asbestos Division to determine potential health risks and to determine a consistent health message for the public. Performed toxicological and environmental consulting in meetings with DAGS, the Department of Education (DOE) and King Intermediate staff. Presented a discussion of the health effects of lead and asbestos at a public meeting. Provide information fact sheets on the health effects of lead and asbestos. Provided justification letters required for reoccupation of King Intermediate. Also instrumental in quelling fears of neighboring residents who may also have been exposed to low levels of asbestos and lead.

Hawai'i State Department of Accounting and General Services (DAGS), Records Warehouse, Honolulu, HI: Project Manager: Provided emergency on-call consulting services for the DAGs records warehouse in Mapunapuna, HI. Provided mold investigation and air sampling protocols, mold survey and remedial plan. Discussed potential risks with warehouse staff.

Hawai'i State Public Library System, HI: Project Manager: Currently providing the Hawai'i State Library System with open ended support for HVAC system evaluations, indoor air quality and mold assessments. Performed HVAC system evaluations and indoor air quality assessments. Provided detailed recommendations regarding HVAC system efficiency and upgrades, remediation protocols, and remediation oversight.

Whole Foods, Kahala Mall, Honolulu, HI: Project Manager: Conducted a comprehensive hazard materials assessment that included assessment for mold, asbestos, lead, PCBs and arsenic. Provided specification documents for remediation as well as request for proposal offerings on behalf of the client. Performed site walk with prospective remedial contractors. Performed oversight and ambient and personal air monitoring during remediation activities.

Honolulu Sports Medical Center: Project Manager: Provided on-call 24 hour support to hospital staff after a "black" water flooding event at the facility. Provide a comprehensive moisture assessment to determine extent of impacts using handheld moisture meters and infrared cameras. Provided work plans for remediation and reviewed plans provided by the building manager's consultants. Oversaw remedial efforts and conducted air sampling. Ensured that remediation was performed according to the standard of care at the time the assessment was conducted

Aloha Petroleum, Kaneohe HI: Project Manager: First responder to a "black" water backflow event at an Aloha Petroleum MiniMart. Provided an impact assessment report and workplans for remediation. Provided remedial oversight and fecal coliform indicator post-remedial verification testing in air and on surfaces. Ensured cleanup and remediation were performed according to the proper stand of care in an effort to obtain maximum insurance reimbursement and to limit future liabilities. Provided expert witness deposition in case against the party responsible for the flood.

Confidential Client, Koloa, HI: Project Manager: Provided litigation support for a potential carbon monoxide exposure event. Provided and implemented workplans to simulate and/or mathematically model exposures to a gasoline powered concrete cutter.

Kona Sea Villas, Kailua-Kona, Hawai'i and Fairway Villas, Waikoloa, Hawai'i: Project Manager: Provided mold-sampling services to determine limited speciation of fungi found on site and recommended remedial actions. Confirmation sampling and consultation services continued through completion of construction activities. Provided detailed remediation plans, oversight and post-remedial verification.

Hospice of Kona, Kailua-Kona, Hawai'i: Project Manager: Performed mold-sampling services to determine limited speciation of fungi found on site. Provided informational training to employees and recommended remedial actions. Conducted HVAC system evaluation and provided specifications to prevent mold growth and recommendations to increase HVAC efficiency.

Kohala Coast Mold Assessment: Project Manager: Provided mold-sampling services for multiple structures to determine limited speciation of fungi found on site and recommended remedial actions. Provided detailed remediation plans and scopes of work. Evaluated HVAC system and quality of indoor air via spore trap analyses.

Lerma and Goya: Project Manager: Provided mold sampling and consulting services for a law office in Hilo, Hawai‘i. Findings and Recommendations successfully used in claim against insurance company for damages related to a leaky toilet and substantial mold infestation in subfloors and adjoining walls.

Environmental Planning and Permitting

Principal Environmental Planner, Kadena Air Base, Environmental Report (ER) for 3 Projects, U.S. Army Engineer District, Japan District, Okinawa, Japan.

Currently performing an Environmental Report for three separately planned projects co-located on Kadena Air Base (KAB). Typically, each of the projects identified below would be individually evaluated in separate documents. However, because these projects are all scheduled to begin construction in 2012 and because they are all co-located on KAB, it is appropriate to streamline the environmental evaluation process and consequently the documentation format, which results in this three-project environmental review. The 3 projects are:

- ***Replace Bullet Road Bridge*** – The U.S. Air Force proposes to repair and reconstruct the Bullet Road Bridge to meet current and future load capacity requirements of the munitions squadron. The existing Bullet Road Bridge is located along an alternate munitions transportation route that connects the airport runway at KAB with the Munitions Storage Annex. Natural weathering and normal operational wear of the Bullet Road Bridge has resulted in the bridge's current degraded state, which has deteriorated to a load capacity approximately 50% of its original design.
- ***Department of Defense Education Activity (DODEA) MILCON School Replacements*** – The DODEA proposes to conduct a series of replacement construction school projects at multiple sites over a period of 2-5 years with planned designed start dates scheduled for November 2012. Phase I of the DODEA project involves demolition of 49 existing family housing units to provide space for new construction and consolidated co-location of the Amelia Earhart Intermediate School (AEIS) and Bob Hope Primary School (BHPS). Phase II of the DODEA project involves construction of the new Stearley Heights Elementary School (SHES) and demolition of the old SHES. Phase III is to construct a new Kadena Elementary School (KES) in green space northeast of the old SHES site. Phase IV is the construction of the new Kadena High School (KHS) at the former KES site. This four-phase program will create adequate academic facilities that meet Department of Defense Dependents Schools DoDDS initiatives to increase classroom space for various plans and programs, such as the Reduced Pupil-Teacher Ratio (RPTR) initiative and the Department of Defense Education Activity DoDEA Technology Plan, which calls for increased computer laboratories in schools.
- ***Special Action Committee on Okinawa (SACO) Agreement of 1996 Navy Relocation*** – The Department of Defense (DOD) proposes to construct a single parking lot to serve all Navy facilities being relocated under the SACO program. The project, when completed, provides convenient access to support activities in the vicinity of the northeastern end of Runway F. The project also reconstructs parking areas that will be demolished or taken out of service in order to provide a site for the relocated Navy aircraft operations facilities. The project will include construction of sidewalks, a traffic light or pedestrian bridge, and new utilities such as storm drains and security lighting. The proposed action is consistent with the planned Navy Relocation activities related to the SACO Agreement.

Principal Environmental Planner, Kadena Air Base, Environmental Review (ER) for Proposed Kadena Industrial Park, U.S. Army Engineer District, Japan District, Okinawa, Japan.

Currently preparing an Environmental Review (ER) for the proposed new industrial park at Kadena Air Base (KAB). Camp Kinser, located south of KAB, will be closed as a result of mandates from the Special Action Committee on Okinawa (SACO) Agreement of 1996 and the Security Consultative Committee (SCC) Agreement of 2005. This necessitates the relocation of a number of industrial facilities. The proposed action is to relocate activities and construct replacement facilities at a new industrial park at KAB as a result of the return of U.S. facilities to the Government of Japan (GOJ). Two sites, Kadena Ammunition Storage Area (KASA) 1 and Chibana have been identified as viable alternatives for construction of the new industrial park, with the Chibana site identified as the preferred alternative. The ER is being prepared in accordance with the following:

- Executive Order (EO) 12114, Environmental Effects Abroad of Major Federal Actions, dated January 4, 1979.
- DoDD 6050.7, Environmental Effects Abroad of Major Defense Actions, dated March 31, 1979.
- Japan Environmental Governing Standards (JEGS) September 2008
- Air Force Policy Directive 32-7006, Environmental Program in Foreign Countries, 29 April 1994

- Air Force Instruction 32-7061, The Environmental Impact Analysis Process, 12 March 2003
- National Historic Preservation Act of 1966, Section 402.

American Piping and Boiler, Campbell Industrial Park, Kapolei, HI: Principal in Charge: Prepared a Grading and Drainage Permit Application to convert a vacant lot to a construction laydown parcel for use in the H-Power expansion project. Project site is located in the City and County of Honolulu, Special Management Area and Coastal Zone Management Area. Completed and submitted the SMA permit application which required that an environmental assessment be conducted for the project. ERA was successful in negotiations with the City and County Department of Environmental Services and the Land Use Approvals division to exempt the project from the Chapter 343 requirement. The exemption required consultation with multiple agencies including the State of Hawaii Historic Preservation Division, USFW, Land Use Approvals, DBEDT, DoA, OHA, etc. The exemption allowed the project to move forward without unnecessary delays due to the EA process. ERA also provided services for completion of a building permit for the construction of 2 driveways and an NPDES permit application for the Department of Health Clean Water Branch. NPDES permit application required completion of a Storm Water Pollution Prevention Plan.

City and County of Honolulu, Department of Environmental Services, H-Power, HI: Principal in Charge: Prepared an Emergency Action Plan for the City and County facility for the H-Power facility located in Campbell Industrial Park. The plan was composed of a Level 1 plan and Level 2 conditions and requirements. The H-POWER Emergency Action Plan delineates the authorities, responsibilities and procedures to be followed by employees in effectively responding to a disaster within the facility. The primary function of the H-POWER Emergency Action Plan is to prepare the facility to respond effectively and quickly to emergencies that occur within the facility or within the community. The plan governs the facility and its employees in the event of an emergency or disaster.

Environmental Science Corporation, USACE Japan District, Iwakuni, Japan: Principal Scientist: Provided an Environmental Review (ER) to identify, document, and address potential environmental impacts associated with the construction and subsequent operation of a Type III Hydrant Fueling System and Supporting Structures. The action was proposed to improve safety, security, and logistics infrastructure at MCAS Iwakuni by providing a dependable, high volume and environmentally sound hydrant refueling system.

Effects of the Proposed Actions were analyzed as required by, and in accordance with:

- Executive Order (EO) 12114, Environmental Effects Abroad of Major Federal Actions, January 1979;
- Department of Defense (DoD) Directive 6050.7, Environmental Effects Abroad of Major Department of Defense Actions, March 1979; and
- Marine Corps Order (MCO) P5090.2A w/ch 2, Environmental Compliance and Protection Manual, May 2009.

Evaluations conducted as part of the planning initiative concentrated on the following potentially affected environments: Soils, Topography, and Geology; Ground and Surface Water; Air Quality and Climate; Biological Resources; Historic/Archaeological Resources; Hazardous/Toxic Wastes; Land Use; Utilities; and Noise.

Covanta Energy, City and County of Honolulu H-Power Facility, HI: EIS and Permitting Task Manager: Performed an Environmental Impact Statement to address the impact of a third combustion unit at the City and County of Honolulu H-Power waste to energy facility. Potential impacts addressed include noise, traffic, historical resources, soil, groundwater and surface water. Air impacts shall also be addressed in a PSD permit. Additional permitting support includes all permits required for operation and construction of the facility. They include, but are not limited to: the solid waste management permit, NPDES operation, Conditional Use Permit, Wastewater Discharge, Stormwater, water use permit, Air Navigation and Clearance for Work in Airport Hazard Area, grading and drainage, NPDES Construction, well construction and pump installation and a permit to operate a sewage treatment facility. Dr. Okoji is also tasked with performance of a comprehensive multimedia risk assessment according to USEPA Human Health Risk Assessment Guidance for Combustor Facilities to address the human and ecological health impacts of the proposed combustion unit on neighboring communities. Also producing a Material Separation Plan and collecting data for use in a Lifecycle Analysis pertaining to the recycling waste stream for the City and County of Honolulu.

Hawai‘i State Army National Guard, Keaukaha Military Reservation, HI: Project Manager: Performed an Environmental Assessment for the consolidation of several Hawai‘i National Guard facilities and construction and redevelopment of an existing military facility. Evaluated cumulative environmental impacts from proposed project. Specific project issues include addressing potentially significant impacts on archaeological resources, historical buildings, determination and mitigation of potential impacts on historically significant trails and addressing the substantial public inquiry and comment regarding the project.

City and County of Honolulu, Waimanalo Gulch Sanitary Landfill, HI: Project Manager: Provided an operational and design review of the City and County operated Waimanalo Gulch Municipal Solid Waste Landfill. Tasks included the review of waste acceptance and screening procedures, as assessment of the geotechnical stability of the landfill including assessment of the use of waste to energy ash as structural fill, compliance with regulatory agencies, spill prevention and response and emergency operations. Report was presented to the City Council and appropriate State agencies to facilitate discussion regarding waste management options for the island of Oahu. Project add-ons included evaluating the cause of elevated landfill temperatures within the landfill and providing a third party review of a Waste Management request for additional funds to operate the landfill.

City and County of Honolulu, Waianae Regional Park, Oahu, HI: Project Manager: Performed an Environmental Assessment for development and expansion of a regional park. Providing technical support regarding the unique geological fixtures that might pose developmental difficulties. Specific issues include, ancient Hawaiian archaeological burial grounds, the existence of multiple limestone sinkholes on site and unique endangered species.

Project Manager, Iwakuni Marine Corp Air Station Golf Course, Environmental Assessment (EA), U.S. Army Corp Engineers (USACE), Iwakuni, Japan. Subcontracted by EnviroQuest Inc. to perform an Environmental Report on behalf of the U.S. Army Corp of Engineers (USACE) Japan Environmental District and U.S. Marine Corp Air Station, Iwakuni. The Environmental Report was prepared to identify, document, and address potential environmental impacts associated with the construction and subsequent operation of a golf course and supporting structures on a former unregulated landfill. Specialty impact assessments required for the EA included geotechnical and human health assessments. Also required was an impacts assessment for biological resources, specifically the proposed action's impacts on the endangered white snake. Additional evaluations conducted as part of the planning initiative concentrated on the following potentially affected environments: Soils, Topography, and Geology, Ground and Surface Water, Air Quality and Climate, Biological Resources, Historic/Archaeological Resources, Land Use, Hazardous/Toxic Wastes, Utilities and Noise.

Project Manager, Beddown of the 604th Air Support Operations Center (ASOC), Environmental Assessment (EA), U.S. Air Force Center for Environmental Excellence, O'ahu, HI. Performed a NEPA and Chapter 343 State of Hawaii HEPA compliant environmental assessment to facilitate the beddown of the 604th ASOC on O'ahu, Hawai'i. Two principal technical services were provided: an Environmental Baseline Survey (EBS) and a NEPA and HEPA compliant EA. The EBS tasks were intended to provide thorough research, investigation, evaluation, documentation, and decision findings of the environmental conditions of the subject real property under consideration for the proposed beddown. The EA was necessary to determine if a Finding of No Significant Impact (FONSI) or the preparation of an Environmental Impact Statement (EIS) was required for the beddown. The EA addressed potential environmental impacts related to implementation of the proposed action and its alternatives; principal impact assessment is anticipated to focus on cultural resources management, hazardous and regulated materials and wastes, safety, infrastructure, and land use compatibility.

Project Manager, Pohakuloa Training Area, Environmental Impact Statement (EIS), State of Hawai'i Department of Transportation, HI. Subcontracted by Okahara and Associates to provide EIS technical support for the State of Hawai'i Department of Transportation expansion of Saddle Road on the Big Island of Hawai'i. Specifically tasked with determining the impacts from potential depleted uranium originating from PTA during military training activities to receptors that may traverse the proposed roadway. Project involves depleted uranium surface soil sampling and air modeling to receptor locations.

Project Manager, Hale Ohana Affordable Housing Project, Environmental Reviews (ER), Micon Real Estate, Koloa, Kauai and Maui, HI. Assisted a real estate developer, Micon Real Estate, with the environmental review process of their proposed Hale Ohana affordable housing project, located in Koloa, Kauai and proposed Honokawai Villa Apartments affordable housing project, located in Lahaina, Maui. The existing 48-unit Hale Ohana Apartment complex and 56-unit Honokawai Villa Apartments is proposed to undergo a significant renovation in order to meet current health and safety codes, and to provide a higher quality of housing for those in need. After evaluation of the project description and applicable environmental and social factors, these projects were determined to be of minimal impact to the environment and would be of great benefit to the community. Dr. Okoji and his team were able to seek exemptions from the environmental review process for these projects and secure Letters of Negative Determination. This saved the client valuable time and funds.

Project Manager, Aston Waikiki Beachside Hotel Renovation, Environmental Assessment (EA), Royal Kai Lani, O'ahu , HI. Conducted an Environmental Assessment EA for a $7 million dollar renovation project in Honolulu, Hawai'i. The proposed project would renovate the Aston Waikiki Beachside Hotel into a luxury condominium, the Royal Kai Lani. A complete interior renovation would transform the structure from its existing 8-

unit per floor hotel into a single unit per floor luxury suite. Public and various federal, state and city agencies were consulted during the EA process. The Final Environmental Assessment was accepted by the Department of Planning and Permitting and a Finding of No Significant Impact was designated. Dr. Okoji and his staff were also successful in obtaining the necessary Special Management Area Use Permit, Major (SMA) for the project.

AMEC Project Manager, Kawaihae-Mamalahoa Connector Road, EIS Technical Support, Belt Collins, Island of Hawai'i. HI. Provided EIS technical support for the construction and operation of a bypass road in the Mamalahoa, Waimea area of the Island of Hawai'i. Specifically subcontracted by Belt Collins to determine the environmental impacts of the proposed roadway on adjacent organic and conventional farm lands. Impacts assessed included the change in surface water potential and productivity of the land. Conversely, the assessment also evaluated the impact of farming practices on potential future users of the proposed road.

Presentations/Publications

Okoji, R.S. & Froines, J.R. Sodium arsenite administration via drinking water increases genome-wide and Ha-ras DNA methylation in methyl deficient C57Bl/6J mice. *Carcinogenesis,* **23,** 777-785.

Okoji, R.S., Hernandez, A., Leininger, J.R., Maronpot, R.R. & Froines, J.R. Subchronic animal bioassay of sodium arsenite in methyl-deficient male C57Bl/6J mice. Submitted to Environmental Research.

Okoji, R.S., Maronpot, R. & Froines, J.R. Chronic animal bioassay for sodium arsenite in methyl deficient C57Bl/6 mice. Submitted to *Environmental Health Perspectives*.

Okoji, R.S., Leininger, J. & Froines, J.R. Subchronic Toxicity Study of Sodium Arsenite in Methyl-Deficient Male C57BL/6 Mice. In: Arsenic Exposure and Health Effects. 1999. (eds. Chappel, W.R., Abernathy, C.O. & Calderon, R.L.) Elsevier Science Ltd, Oxford, UK, pp. 225-232.

Froines, J., Collins, M., Fanning, E., McConnell, R., Robbins, W., Silver, K., Kun, H., Mutialu, R., **Okoji, R.,** Taber, R., Tareen, N. & Zandonella, C. 1998. Health and Environmental Assessment of MTBE. Report to the Governor and Legislature of the State of California as sponsored by SB 521. 1999: Volume II: Human Health Effects. An evaluation of the Scientific Peer-Reviewed Research and Literature on the Human Health Effects of MTBE, its Metabolites, Combustion Products and Substitute Compounds. University of California: available at http://tsrtp.ucdavis.edu/

Okoji, R.S., Hernandez, A., Cebrian, M. & Froines, J.R. Toxicokinetic profile of arsenic metabolites in C57Bl/6 mice maintained on methyl-deficient diets. In Progress.

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Lorman Education Services, Solving Water Intrusion and Mold problems in Hawai‘i. Health effects of Molds. 2005.

King Intermediate School, Hawai‘i State Department of Accounting and General Services/ Department of Education. Health effects of Lead and Asbestos, December 2004.

Keaukaha Community Meeting: Air sampling in a residential neighborhood (2005).

Orote Community Meeting, Guam: Health risks associated with the ingestion of seafood from Agat Bay (2003).

USEPA, San Francisco, CA: Health risks associated with recreational activities in Agat bay or the ingestion of seafood from Agat Bay, Guam.

Fourth International Conference on the Health Effects of Arsenic: Sodium arsenite administered in drinking water reduces DNA methylation in methyl-deficient C57BL/6 mice, 2000.

Toxic Substances Research and Teaching Program (TSR&TP): 12th Annual Research Symposium. Presentation: Arsenic Induced Carcinogenesis: Perturbations in p53 and Ha-ras methylation patterns.

Toxic Substances Research and Teaching Program (TSR&TP): 11th Annual Research Symposium. Presentation: Arsenic Induced Carcinogenesis: A murine model for the induction of cancer in methyl-deficient C57Bl/6J mice.

Third International Conference on the Health Effects of Arsenic: Arsenic Induced Carcinogenesis: A murine model for the induction of cancer in methyl-deficient C57Bl/6J mice, 1999.

Commendations

5/06	Commendation Letter from the Operations Director at Kahala Mall for services performed over and beyond the call of duty during a severe flooding event.
12/04	Commendation letter from the Department of Accounting and General Services for risk communication support regarding asbestos and lead at King Intermediate School, Kaneohe, Hawai‘i.
8/00 – 9/04	Multiple commendations from U.S. Navy and ATSDR for technical support in human health toxicological consulting and community relations
5/99	Recipient of the UCLA School of Public Health Raymond Goodman Scholarship for academic excellence
6/95	Recipient of the Gladys Emerson Award (UCLA) for research in toxicology and nutrition

References

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Environmental Program Manager
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Ph: (808) 534-8413
E-mail: jabennet@KSBE.com

Appendix B

AERIAL PHOTOGRAPHS

TMK 2 3-8-4-28

0 KAIWAHINE ST

Kihei, HI 96753

Inquiry Number: 4843250.9

February 02, 2017

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

02/02/17

Site Name:

TMK 2 3-8-4-28
0 KAIWAHINE ST
Kihei, HI 96753
EDR Inquiry # 4843250.9

Client Name:

Environmental Risk Analysis. LLC
725 Hao Street
Honolulu, HI 96821
Contact: Rachel Okoji

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2000	1"=500'	Acquisition Date: April 12, 2000	USGS/DOQQ
1992	1"=500'	Flight Date: September 23, 1992	USGS
1975	1"=500'	Flight Date: July 22, 1975	USGS
1951	1"=500'	Flight Date: January 28, 1951	USGS

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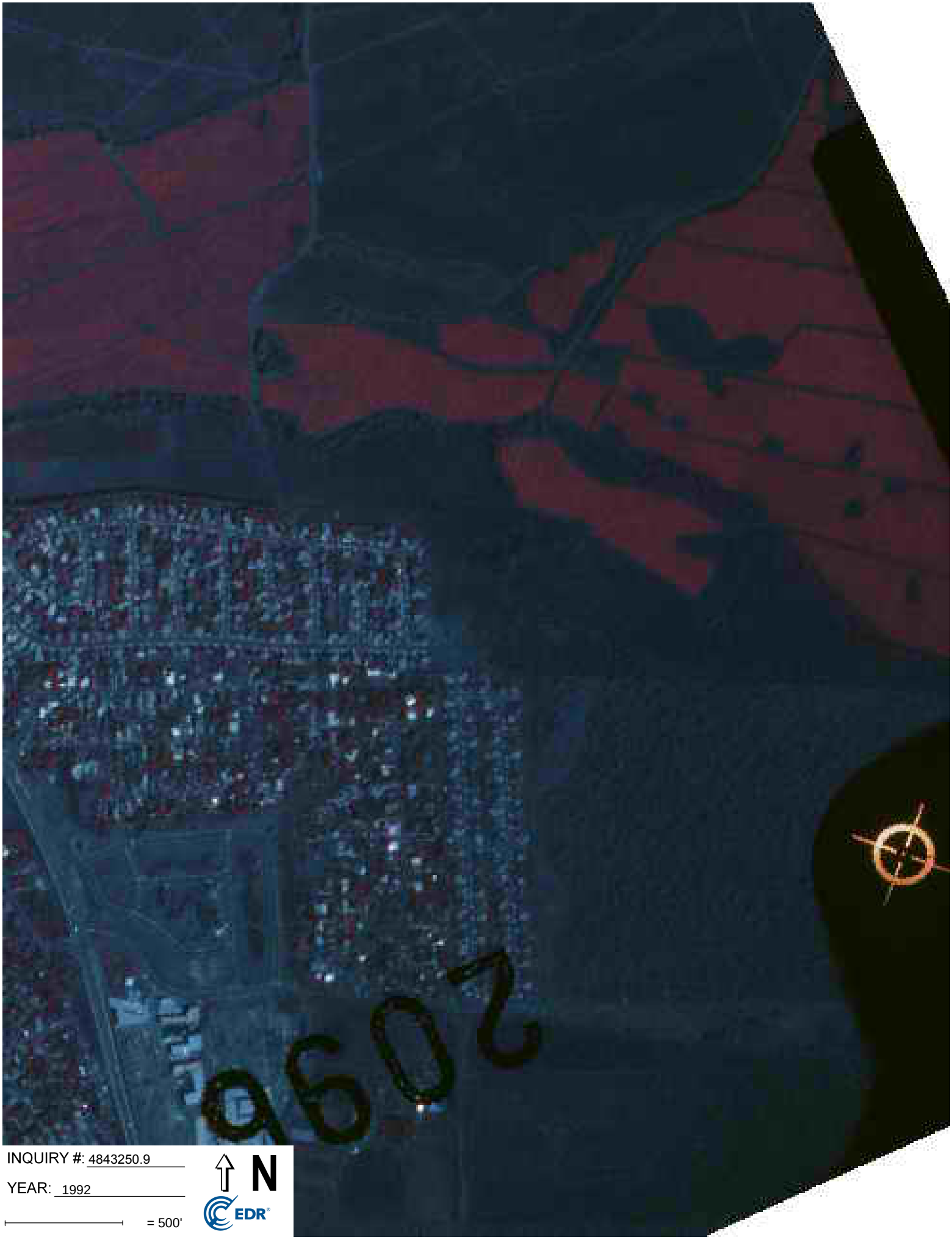
INQUIRY #: 4843250.9

YEAR: 2000

= 500'

N

EDR



INQUIRY #: 4843250.9

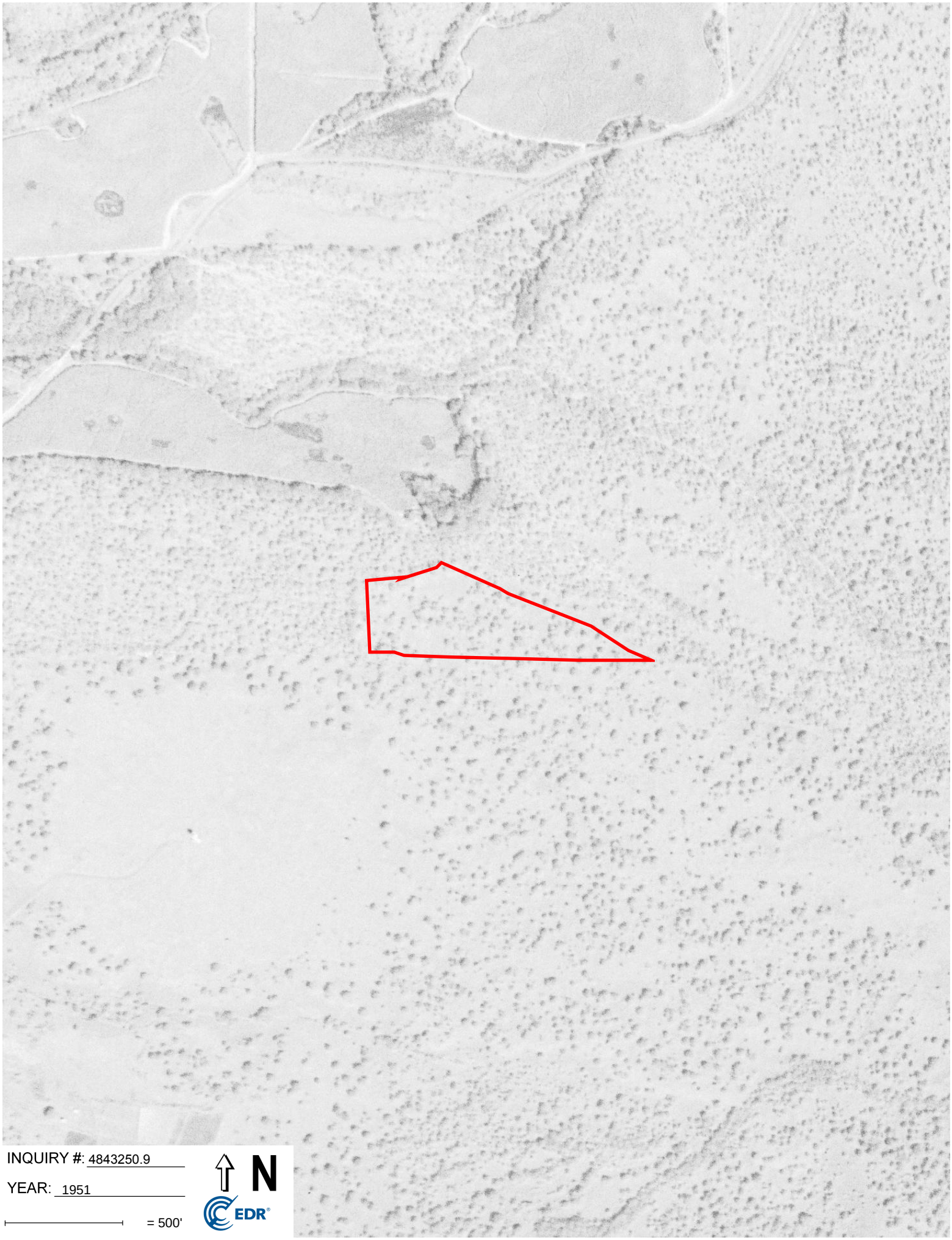
YEAR: 1992

= 500'

N

EDR

INQUIRY #: 4843250.9
YEAR: 1975
= 500'
N
EDR



INQUIRY #: 4843250.9

YEAR: 1951

= 500'

N

EDR

Appendix **C**

EDR REPORT, SANBORN FIRE INSURANCE MAPS, HISTORICAL TOPOGRAPHIC MAPS, HISTORICAL AERIAL PHOTOGRAPHS AND CITY DIRECTORY

TMK 2 3-8-4-28
0 KAIWAHINE ST
Kihei, HI 96753

Inquiry Number: 4843250.2s
February 02, 2017

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-10
Physical Setting Source Map Findings	A-12
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

0 KAIWAHINE ST
KIHEI, HI 96753

COORDINATES

Latitude (North):	20.7801800 - 20˚ 46' 48.64''
Longitude (West):	156.4459630 - 156˚ 26' 45.46''
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	765895.2
UTM Y (Meters):	2299787.5
Elevation:	144 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5941643 PUU O KALI, HI
Version Date:	2013
West Map:	5941599 MAALAEA, HI
Version Date:	2013

MAPPED SITES SUMMARY

Target Property Address:
0 KAIWAHINE ST
KIHEI, HI 96753

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	SELLAND CONSTRUCTION	454 OHUKAI RD	SHWS, SPILLS	Lower	2033, 0.385, SSW
2	TESORO 2GO #61072	356 HUKU LII PL	LUST, UST, Financial Assurance	Lower	2538, 0.481, SW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ..... Federal Facility Site Information listing
SEMS ..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List

US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Permitted Landfills in the State of Hawaii

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
UST..... Underground Storage Tank Database
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Engineering Control Sites
INST CONTROL..... Sites with Institutional Controls

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing
VCP..... Voluntary Response Program Sites

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
ODI..... Open Dump Inventory
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
CDL..... Clandestine Drug Lab Listing
US CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information

EXECUTIVE SUMMARY

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
SPILLS	Release Notifications
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
AIRS	List of Permitted Facilities
DRYCLEANERS	Permitted Drycleaner Facility Listing
Financial Assurance	Financial Assurance Information Listing
UIC	Underground Injection Wells Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
ECHO	Enforcement & Compliance History Information
ABANDONED MINES	Abandoned Mines

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

EDR Hist Auto..... EDR Exclusive Historic Gas Stations
EDR Hist Cleaner..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List
RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

A review of the SHWS list, as provided by EDR, and dated 09/23/2016 has revealed that there is 1 SHWS site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SELLAND CONSTRUCTION	***454 OHUKAI RD***	***SSW 1/4 - 1/2 (0.385 mi.)***	***1***	***8***

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Active Leaking Underground Storage Tank Log Listing.

A review of the LUST list, as provided by EDR, and dated 11/18/2016 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
TESORO 2GO #61072	***356 HUKU LII PL***	***SW 1/4 - 1/2 (0.481 mi.)***	***2***	***9***

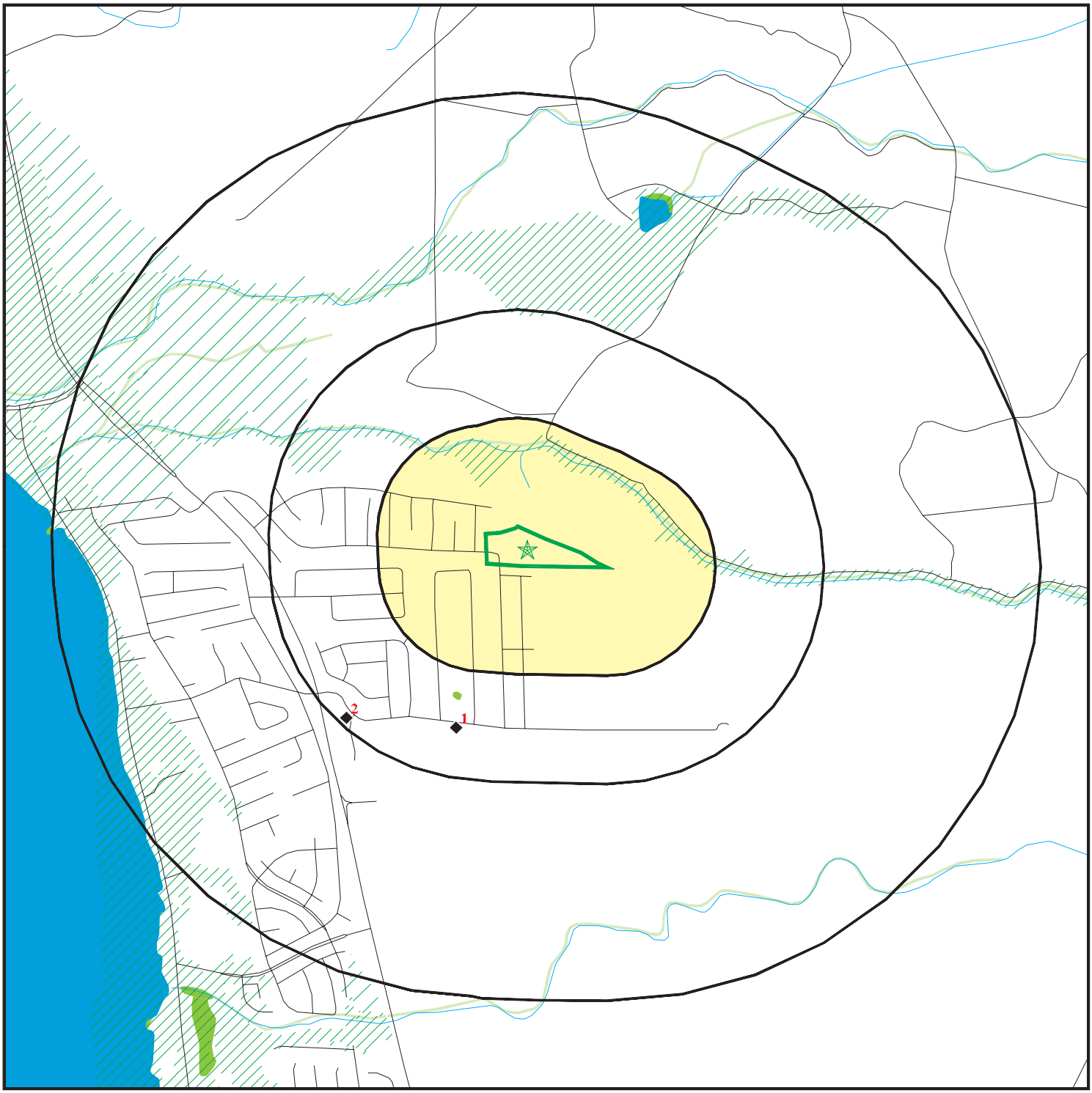
EXECUTIVE SUMMARY

Release ID: suspected
Facility Id: 9-502523
Facility Status: Suspected release

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 4843250.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: TMK 2 3-8-4-28 ADDRESS: 0 KAIWAHINE ST Kihei HI 96753 LAT/LONG: 20.78018 / 156.445963	CLIENT: Environmental Risk Analysis. LLC CONTACT: Rachel Okoji INQUIRY #: 4843250.2s DATE: February 02, 2017 1:45 pm

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DETAIL MAP - 4843250.2S

0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: TMK 2 3-8-4-28 ADDRESS: 0 KAIWAHINE ST Kihei HI 96753 LAT/LONG: 20.78018 / 156.445963	CLIENT: Environmental Risk Analysis. LLC CONTACT: Rachel Okoji INQUIRY #: 4843250.2s DATE: February 02, 2017 1:45 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	1.000		0	0	1	0	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	1	NR	NR	1
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	0.001		0	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
SPILLS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
AIRS	0.001		0	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA HWS	0.001		0	NR	NR	NR	NR	0
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	0	0	2	0	0	2

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 SSW 1/4-1/2 0.385 mi. 2033 ft. | **SELLAND CONSTRUCTION INC, KIHEI BASE YARD**
454 OHUKAI RD
KIHEI, HI 96753 | **SHWS** **S105262951**
SPILLS **N/A**

Relative: Lower

Actual: 124 ft.

SHWS:

Organization:	Not reported
Supplemental Location:	Ohukai Rd Base Yard
Island:	Maui
Environmental Interest:	Selland Construction, Inc., Kihei Base Yard
HID Number:	Not reported
Facility Registry Identifier:	110013779018
Lead Agency:	HEER
Program:	State
Project Manager:	Iris van der Zander
Hazard Priority:	Low
Potential Hazards And Controls:	No Hazard
Island:	Maui
SDAR Environmental Interest Name:	Selland Construction, Inc., Kihei Base Yard
HID Number:	Not reported
Facility Registry Identifier:	110013779018
Lead Agency:	HEER
Potential Hazard And Controls:	No Hazard
Priority:	Low
Assessment:	Response Necessary
Response:	Response Complete
Nature of Contamination:	Found: Oil and Diesel Fuels.
Nature of Residual Contamination:	Not reported
Use Restrictions:	No Hazard Present For Unrestricted Residential Use
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	No Further Action Letter - Unrestricted Residential Use
Document Date:	05/17/2016
Document Number:	Not reported
Document Subject:	Revised Limited Site Investigation ReportFORMER SELLAND CONSTRUCTION, INC. BASEYARD454 OHUKAI ROADKIHEI, MAUI, HAWAII 96753TMK: (2) 3-9-001-034
Project Manager:	Iris van der Zander
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

HI SPILLS:

Island:	Maui
Supplemental Loc. Text:	Ohukai Rd Base Yard
Case Number:	19940218-2
HID Number:	Not reported
Facility Registry Id:	110013779018
Lead and Program:	HEER EP&R
ER:	Not reported
Units:	Selland Construction Baseyard
Substances:	Diesel Fuel and oil
Less Or Greater Than:	Not reported
Numerical Quantity:	Not reported
Units:	Not reported
Activity Type:	Response
Activity Lead:	Not reported
Assignment End Date:	Not reported

SELLAND CONSTRUCTION INC, KIHEI BASE YARD (Continued) **S105262951**

Result:	Refer to ISST
File Under:	Selland Construction, Inc.
Latitude:	20.77519
Longitude:	-156.452133

2
SW
1/4-1/2
0.481 mi.
2538 ft.

TESORO 2GO #61072 **LUST** **U003402940**
356 HUKU LII PL **UST** **N/A**
KIHEI, HI 96753 **Financial Assurance**

Relative:
Lower

Actual:
79 ft.

LUST:

Facility ID:	9-502523
Facility Status:	Suspected release
Facility Status Date:	11/27/2015
Release ID:	suspected
Project Officer:	George Tabil

UST:

Facility ID:	9-502523
Owner:	HIE Retail, LLC
Owner Address:	91-325 Komohana Street
Owner City,St,Zip:	Kihei, 96753 96753
Latitude:	20.774850
Longitude:	-156.452870
Horizontal Reference Datum Name:	NAD83
Horizontal Collection Method Name:	GPS

Tank ID:	1
Date Installed:	02/01/1991
Tank Status:	**Temporarily out of Use**
Date Closed:	Not reported
Tank Capacity:	10000
Substance:	Gasohol

Tank ID:	1
Date Installed:	02/01/1991
Tank Status:	**Temporarily out of Use**
Date Closed:	Not reported
Tank Capacity:	10000
Substance:	Gasohol

Tank ID:	2
Date Installed:	11/30/1991
Tank Status:	**Currently In Use**
Date Closed:	Not reported
Tank Capacity:	10000
Substance:	Gasohol

Tank ID:	2
Date Installed:	11/30/1991
Tank Status:	**Currently In Use**
Date Closed:	Not reported
Tank Capacity:	10000

TESORO 2GO #61072 (Continued) **U003402940**

Substance: Gasohol

Tank ID: 3
Date Installed: 11/30/1991
Tank Status: **Currently In Use**
Date Closed: Not reported
Tank Capacity: 10000
Substance: Gasohol

Tank ID: 3
Date Installed: 11/30/1991
Tank Status: **Currently In Use**
Date Closed: Not reported
Tank Capacity: 10000
Substance: Gasohol

Tank ID: 4
Date Installed: 11/30/1991
Tank Status: **Currently In Use**
Date Closed: Not reported
Tank Capacity: 10000
Substance: Diesel

Tank ID: 4
Date Installed: 11/30/1991
Tank Status: **Currently In Use**
Date Closed: Not reported
Tank Capacity: 10000
Substance: Diesel

HI Financial Assurance:
Alt Facility ID: 9-502523
Tank Id: 1
Tank Status: Temporarily out of Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-502523
Tank Id: 2
Tank Status: Currently In Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-502523
Tank Id: 3
Tank Status: Currently In Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-502523
Tank Id: 4
Tank Status: Currently In Use
FRTYPE: Other

TESORO 2GO #61072 (Continued) **U003402940**

Expiration Date: Not reported

Alt Facility ID: 9-502523
Tank Id: 4
Tank Status: Currently In Use
FRTYPE: Guarantee
Expiration Date: 03/31/2013

Alt Facility ID: 9-502523
Tank Id: 3
Tank Status: Currently In Use
FRTYPE: Guarantee
Expiration Date: 03/31/2013

Alt Facility ID: 9-502523
Tank Id: 2
Tank Status: Currently In Use
FRTYPE: Guarantee
Expiration Date: 03/31/2013

Alt Facility ID: 9-502523
Tank Id: 1
Tank Status: Temporarily out of Use
FRTYPE: Guarantee
Expiration Date: 03/31/2013

Alt Facility ID: 9-502523
Tank Id: 2
Tank Status: Currently In Use
FRTYPE: Insurance
Expiration Date: 09/25/2014

Alt Facility ID: 9-502523
Tank Id: 3
Tank Status: Currently In Use
FRTYPE: Insurance
Expiration Date: 09/25/2014

Alt Facility ID: 9-502523
Tank Id: 4
Tank Status: Currently In Use
FRTYPE: Insurance
Expiration Date: 09/25/2014

Alt Facility ID: 9-502523
Tank Id: 1
Tank Status: Temporarily out of Use
FRTYPE: Insurance
Expiration Date: 09/25/2014

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 10/05/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 93

Source: EPA
Telephone: N/A
Last EDR Contact: 01/05/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 10/05/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 93

Source: EPA
Telephone: N/A
Last EDR Contact: 01/05/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/05/2016	Source: EPA
Date Data Arrived at EDR: 10/05/2016	Telephone: N/A
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 01/05/2017
Number of Days to Update: 93	Next Scheduled EDR Contact: 04/17/2017
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 09/14/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/04/2016	Telephone: 703-603-8704
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 01/05/2017
Number of Days to Update: 17	Next Scheduled EDR Contact: 04/17/2017
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/10/2016	Source: EPA
Date Data Arrived at EDR: 10/20/2016	Telephone: 800-424-9346
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 01/06/2017
Number of Days to Update: 78	Next Scheduled EDR Contact: 05/01/2017
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 10/10/2016
Date Data Arrived at EDR: 10/20/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 78

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 01/06/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/12/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 100

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/12/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/12/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/12/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/12/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/18/2016
Next Scheduled EDR Contact: 02/27/2017
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/29/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/29/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/26/2016
Date Data Arrived at EDR: 09/29/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 43

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: Sites List

Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 09/23/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 12/21/2016
Number of Days to Update: 29

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 11/22/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Permitted Landfills in the State of Hawaii

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/17/2012
Date Data Arrived at EDR: 04/03/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 37

Source: Department of Health
Telephone: 808-586-4245
Last EDR Contact: 12/30/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 12/02/2016
Date Made Active in Reports: 12/21/2016
Number of Days to Update: 19

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 12/02/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Semi-Annually

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/24/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Varies

UST: Underground Storage Tank Database
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 12/02/2016
Date Made Active in Reports: 01/27/2017
Number of Days to Update: 56

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 12/02/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/24/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Control Sites
A listing of sites with engineering controls in place.

Date of Government Version: 09/23/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 12/21/2016
Number of Days to Update: 29

Source: Department of Health
Telephone: 404-586-4249
Last EDR Contact: 11/22/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls
Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 09/23/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 12/21/2016
Number of Days to Update: 29

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 11/22/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Response Program Sites
Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 09/23/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 12/21/2016
Number of Days to Update: 29

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 11/22/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/27/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites
With certain legal exclusions and additions, the term ‘brownfield site’ means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 09/23/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 12/21/2016
Number of Days to Update: 29

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 11/22/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/20/2016
Date Data Arrived at EDR: 09/21/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 51

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/20/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/31/2016
Next Scheduled EDR Contact: 02/13/2017
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 01/30/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Lab Listing
A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010
Date Data Arrived at EDR: 09/10/2010
Date Made Active in Reports: 10/22/2010
Number of Days to Update: 42

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 11/28/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/29/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 01/24/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 87

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

SPILLS: Release Notifications

Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

Date of Government Version: 01/14/2016
Date Data Arrived at EDR: 02/24/2016
Date Made Active in Reports: 04/06/2016
Number of Days to Update: 42

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 11/23/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 03/10/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/11/2013
Number of Days to Update: 39

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/12/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 12/08/2016
Next Scheduled EDR Contact: 03/20/2017
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 07/12/2016
Date Data Arrived at EDR: 08/17/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 65

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 11/16/2016
Next Scheduled EDR Contact: 02/27/2017
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/08/2016
Next Scheduled EDR Contact: 02/20/2017
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/11/2016
Next Scheduled EDR Contact: 02/20/2017
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/23/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/22/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/06/2016
Next Scheduled EDR Contact: 03/20/2017
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 11/07/2016
Next Scheduled EDR Contact: 02/20/2017
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/27/2016
Date Data Arrived at EDR: 08/05/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 01/09/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 11/17/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 11/17/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 11/07/2016
Next Scheduled EDR Contact: 02/20/2017
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/06/2016
Next Scheduled EDR Contact: 03/20/2017
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/06/2016
Next Scheduled EDR Contact: 03/20/2017
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/29/2016
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/03/2016
Date Data Arrived at EDR: 10/05/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/06/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/01/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/23/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/08/2016
Next Scheduled EDR Contact: 02/20/2017
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/07/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 148

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 01/05/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 06/30/2016
Date Data Arrived at EDR: 07/25/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 88

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 06/30/2016
Date Data Arrived at EDR: 07/25/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 88

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/01/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 12/12/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 12/02/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/15/2016
Date Data Arrived at EDR: 09/07/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 65

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 12/06/2016
Next Scheduled EDR Contact: 03/20/2017
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/28/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 01/20/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Varies

AIRS: List of Permitted Facilities

A listing of permitted facilities in the state.

Date of Government Version: 04/14/2016
Date Data Arrived at EDR: 04/19/2016
Date Made Active in Reports: 05/17/2016
Number of Days to Update: 28

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 01/03/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing

A listing of permitted drycleaner facilities in the state.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/19/2016
Date Made Active in Reports: 05/17/2016
Number of Days to Update: 28

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 01/03/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Varies

Financial Assurance: Financial Assurance Information Listing

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 12/16/2016
Date Data Arrived at EDR: 12/20/2016
Date Made Active in Reports: 01/27/2017
Number of Days to Update: 38

Source: Department of Health
Telephone: 808-586-4226
Last EDR Contact: 10/11/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

UIC: Underground Injection Wells Listing
A listing of underground injection well locations.

Date of Government Version: 02/07/2013
Date Data Arrived at EDR: 02/12/2013
Date Made Active in Reports: 04/09/2013
Number of Days to Update: 56

Source: Department of Health
Telephone: 808-586-4258
Last EDR Contact: 11/28/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/18/2016
Date Data Arrived at EDR: 09/20/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 12/20/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/22/2016
Date Data Arrived at EDR: 08/23/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 59

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/22/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Quarterly

ABANDONED MINES: Abandoned Mines
An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 81

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/09/2016
Next Scheduled EDR Contact: 03/27/2017
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 191

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/17/2014
Number of Days to Update: 200

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

TMK 2 3-8-4-28
0 KAIWAHINE ST
KIHEI, HI 96753

TARGET PROPERTY COORDINATES

Latitude (North):	20.78018 - 20˚ 46’ 48.65’’
Longitude (West):	156.445963 - 156˚ 26’ 45.47’’
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	765895.2
UTM Y (Meters):	2299787.5
Elevation:	144 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5941643 PUU O KALI, HI
Version Date:	2013
West Map:	5941599 MAALAEA, HI
Version Date:	2013

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

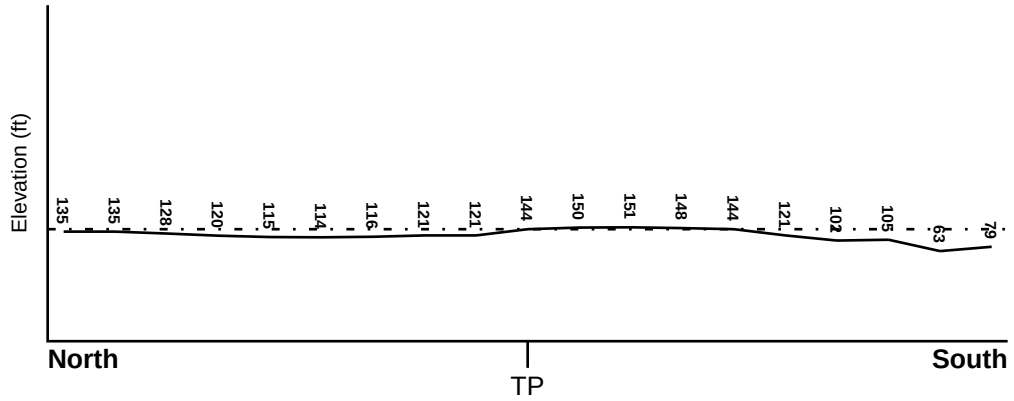
TOPOGRAPHIC INFORMATION

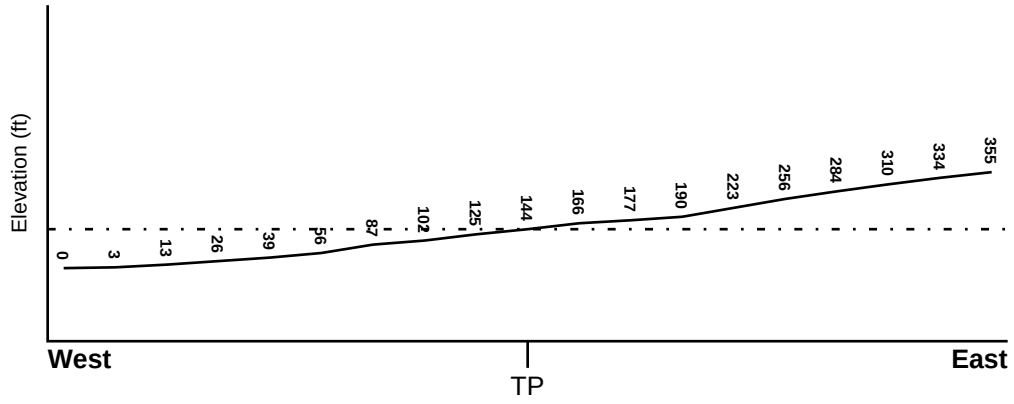
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 144 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
1500030580F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
1500030559F	FEMA FIRM Flood data
1500030265C	FEMA Q3 Flood data
1500030586G	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

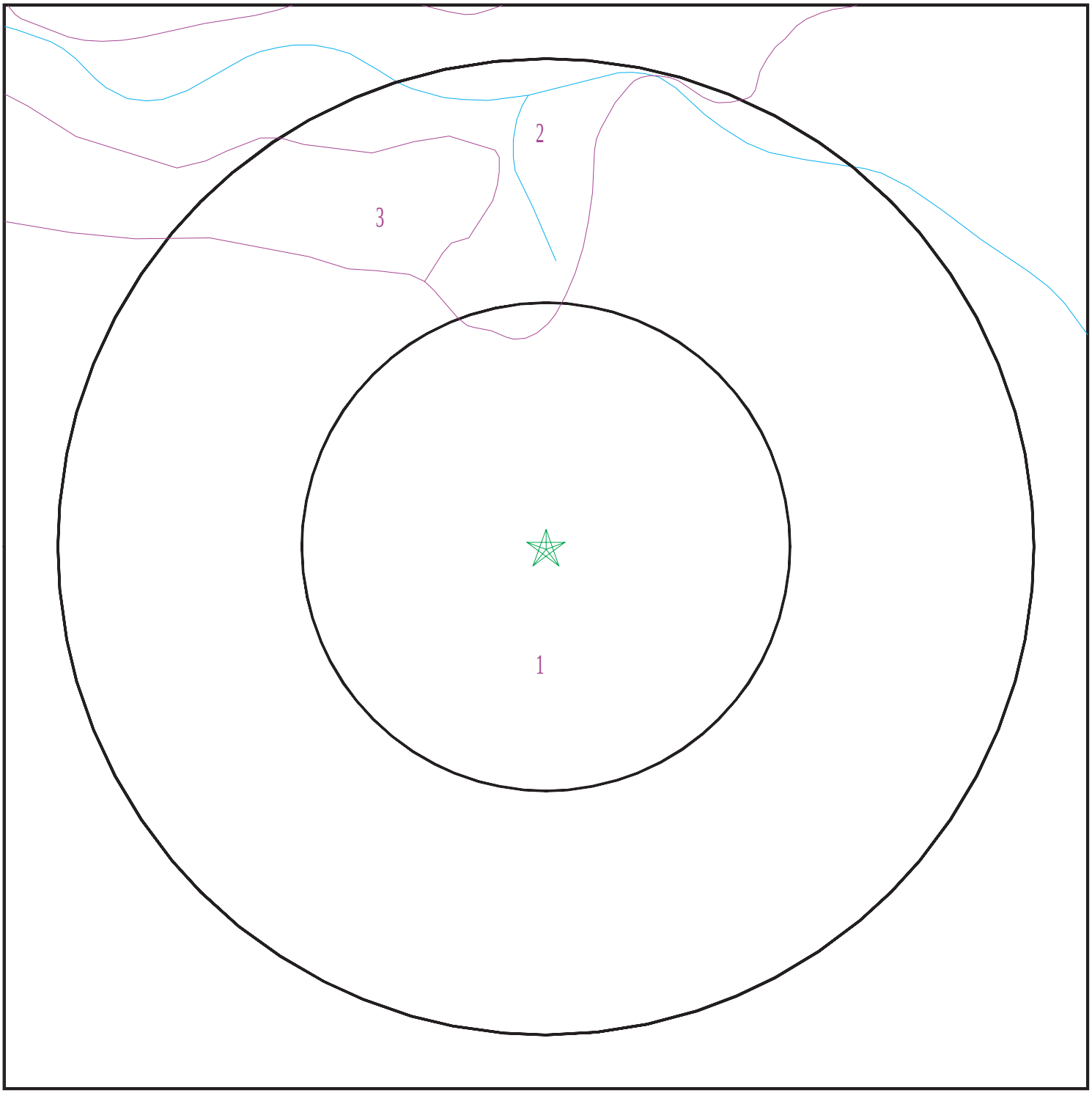
Era:	-
System:	-
Series:	-
Code:	N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4843250.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME: TMK 2 3-8-4-28 ADDRESS: 0 KAIWAHINE ST Kihei HI 96753 LAT/LONG: 20.78018 / 156.445963	CLIENT: Environmental Risk Analysis. LLC CONTACT: Rachel Okoji INQUIRY #: 4843250.2s DATE: February 02, 2017 1:45 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Waiakoa

Soil Surface Texture: extremely stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 71 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	0 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	0 inches	20 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	20 inches	27 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	27 inches	31 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 2

Soil Component Name: Pulehu

Soil Surface Texture: cobbly silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	cobbly silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 3

Soil Component Name: Waiakoa

Soil Surface Texture: very stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	very stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS40000268882	1/8 - 1/4 Mile SSW
A3	USGS40000268879	1/4 - 1/2 Mile SSW
B5	USGS40000268886	1/4 - 1/2 Mile West
B6	USGS40000268887	1/4 - 1/2 Mile West
C7	USGS40000268876	1/4 - 1/2 Mile SSW
D9	USGS40000268873	1/4 - 1/2 Mile SSW
11	USGS40000268888	1/2 - 1 Mile West
E13	USGS40000268895	1/2 - 1 Mile NE
F14	USGS40000268872	1/2 - 1 Mile SSW
G17	USGS40000268890	1/2 - 1 Mile East
H19	USGS40000268878	1/2 - 1 Mile WSW
I21	USGS40000268883	1/2 - 1 Mile West
H22	USGS40000268877	1/2 - 1 Mile WSW
J25	USGS40000268875	1/2 - 1 Mile WSW
K27	USGS40000268891	1/2 - 1 Mile West
L30	USGS40000268870	1/2 - 1 Mile SW
K31	USGS40000268889	1/2 - 1 Mile West
L34	USGS40000268869	1/2 - 1 Mile SW
M35	USGS40000268881	1/2 - 1 Mile WSW
N37	USGS40000268885	1/2 - 1 Mile West
M39	USGS40000268884	1/2 - 1 Mile West
M41	USGS40000268880	1/2 - 1 Mile WSW
P45	USGS40000268893	1/2 - 1 Mile West
O47	USGS40000268896	1/2 - 1 Mile WNW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

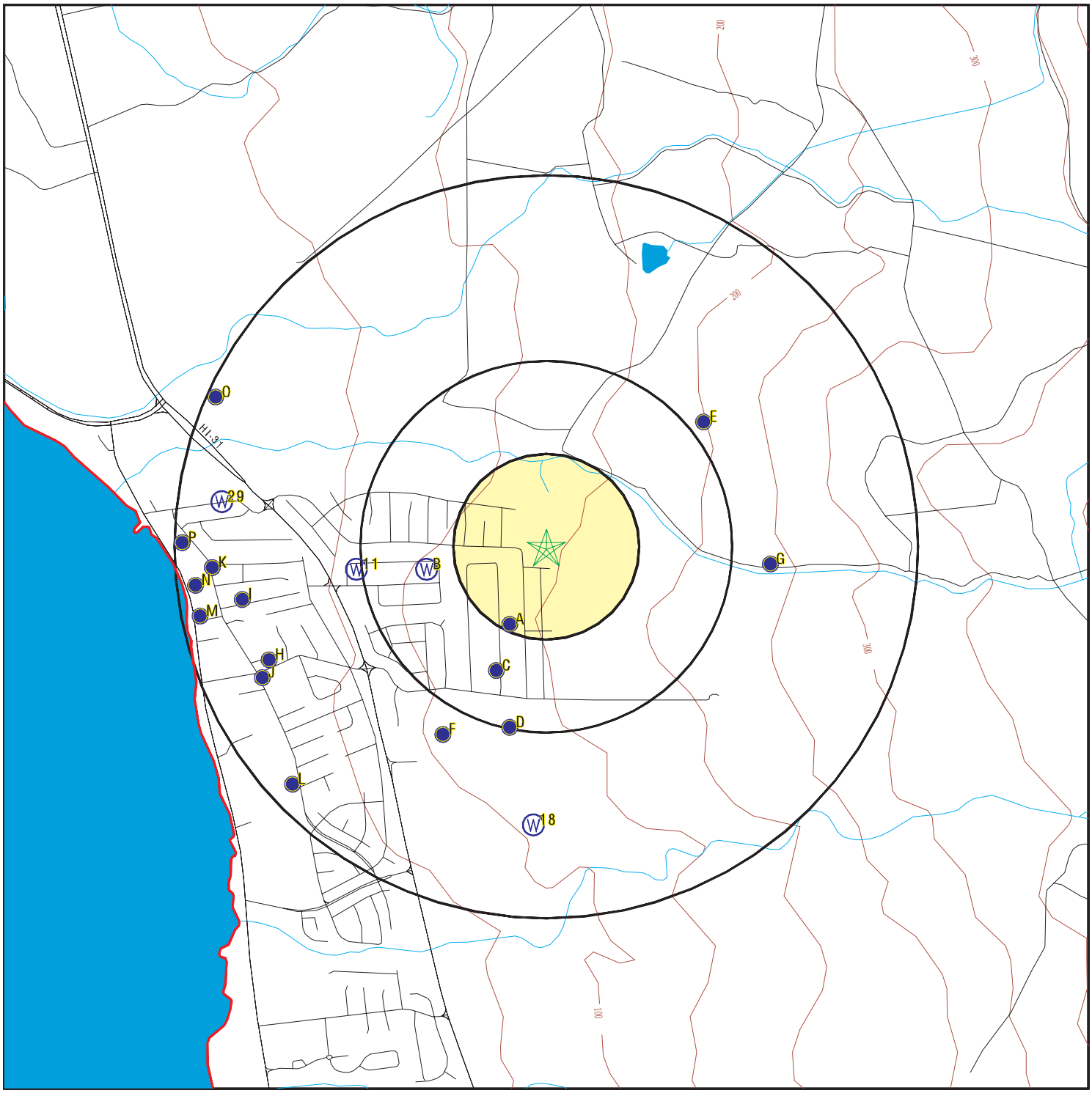
MAP ID	WELL ID	LOCATION FROM TP
A2	HI9000000003078	1/8 - 1/4 Mile SSW
A4	HI9000000003077	1/4 - 1/2 Mile SSW
C8	HI9000000003076	1/4 - 1/2 Mile SSW
D10	HI9000000003075	1/2 - 1 Mile SSW
E12	HI9000000003090	1/2 - 1 Mile NE
F15	HI9000000003069	1/2 - 1 Mile SSW
G16	HI9000000003060	1/2 - 1 Mile East
18	HI9000000003061	1/2 - 1 Mile South
H20	HI9000000003062	1/2 - 1 Mile WSW
I23	HI9000000003070	1/2 - 1 Mile West
H24	HI9000000003074	1/2 - 1 Mile WSW
J26	HI9000000003073	1/2 - 1 Mile WSW
K28	HI9000000003068	1/2 - 1 Mile West

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
29	HI9000000003098	1/2 - 1 Mile West
K32	HI9000000003067	1/2 - 1 Mile West
L33	HI9000000003064	1/2 - 1 Mile SW
L36	HI9000000003072	1/2 - 1 Mile SW
M38	HI9000000003065	1/2 - 1 Mile WSW
N40	HI9000000003066	1/2 - 1 Mile West
M42	HI9000000003063	1/2 - 1 Mile West
M43	HI9000000003071	1/2 - 1 Mile WSW
O44	HI9000000003091	1/2 - 1 Mile WNW
P46	HI9000000003092	1/2 - 1 Mile West

PHYSICAL SETTING SOURCE MAP - 4843250.2s



County Boundary
Major Roads
Contour Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location

N

SITE NAME: TMK 2 3-8-4-28 ADDRESS: 0 KAIWAHINE ST Kihei HI 96753 LAT/LONG: 20.78018 / 156.445963	CLIENT: Environmental Risk Analysis. LLC CONTACT: Rachel Okoji INQUIRY #: 4843250.2s DATE: February 02, 2017 1:45 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
A1 **SSW** **1/8 - 1/4 Mile** **Higher**	**FED USGS**	**USGS40000268882**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204651156270101		
Monloc name:	6-4627-17 W229		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.777634
Longitude:	-156.447459	Sourcemap scale:	24000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	140.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19690101	Welldepth:	120
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

A2 **SSW** **1/8 - 1/4 Mile** **Lower**	**HI WELLS**	**HI9000000003078**

Wid:	6-4627-017	Island:	Maui
Well name:	Tmk 3-9-26-66	Old name:	Not Reported
Yr drilled:	1969		
Driller:	Ocean View Drilling Co., Ltd.		
Quad map:	8		
Long83dd:	-156.4475		
Lat83dd:	20.7775		
Gps:	0	Utm:	-1
Owner user:	Howard Tavares		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	229-	Well type:	ROT
Casing dia:	4	Ground el:	Not Reported
Well depth:	120		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-69
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003078

A3
SSW **FED USGS** **USGS40000268879**
1/4 - 1/2 Mile
Lower

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204648156270101		
Monloc name:	6-4627-16 W228		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7768007
Longitude:	-156.447459	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	140.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19690101	Welldepth:	161
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

A4
SSW **HI WELLS** **HI9000000003077**
1/4 - 1/2 Mile
Lower

Wid:	6-4627-016	Island:	Maui
Well name:	Tmk 3-9-26-67	Old name:	Not Reported
Yr drilled:	1969		
Driller:	Ocean View Drilling Co., Ltd.		
Quad map:	8		
Long83dd:	-156.4475		
Lat83dd:	20.776667		
Gps:	0	Utm:	-1
Owner user:	A. Batoon		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	228-	Well type:	ROT
Casing dia:	4	Ground el:	Not Reported
Well depth:	161		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-69
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003077

B5
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000268886**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204657156271301		
Monloc name:	6-4627.CA IWS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7793005
Longitude:	-156.450792	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	110.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19740917	Welldepth:	30
Welldepth units:	ft	Wellholedepth:	30
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-09-17		

Note: The site was dry (no water level recorded).

B6
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000268887**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204657156271401		
Monloc name:	6-4627.BA IWS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7793005
Longitude:	-156.4510699	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	110.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19740916	Welldepth:	23
Welldepth units:	ft	Wellholedepth:	23
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-09-16		

Note: The site was dry (no water level recorded).

Map ID Direction Distance Elevation	Database	EDR ID Number
C7 **SSW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000268876**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204643156270301		
Monloc name:	6-4627-15 W227		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7754119
Longitude:	-156.4480145	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	130.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19690101	Welldepth:	110
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

C8 **SSW** **1/4 - 1/2 Mile** **Lower**	**HI WELLS**	**HI9000000003076**	

Wid:	6-4627-015	Island:	Maui
Well name:	Tmk 3-9-26-43	Old name:	Not Reported
Yr drilled:	1969		
Driller:	Ocean View Drilling Co., Ltd.		
Quad map:	8		
Long83dd:	-156.448056		
Lat83dd:	20.775278		
Gps:	0	Utm:	-1
Owner user:	A. Neubauer		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	227-	Well type:	ROT
Casing dia:	4	Ground el:	Not Reported
Well depth:	110		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-69
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003076

D9
SSW **FED USGS** **USGS40000268873**
1/4 - 1/2 Mile
Lower

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204635156270101		
Monloc name:	6-4627-14 Waiakea Homesteads, Maui, HI		
Monloc type:	Well		
Monloc desc:	former local no. W226		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7731899
Longitude:	-156.447459	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	130.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19690101	Welldepth:	200
Welldepth units:	ft	Wellholedepth:	200
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

D10
SSW **HI WELLS** **HI9000000003075**
1/2 - 1 Mile
Lower

Wid:	6-4627-014	Island:	Maui
Well name:	Tmk 3-9-01-34	Old name:	Not Reported
Yr drilled:	1969		
Driller:	Ocean View Drilling Co., Ltd.		
Quad map:	8		
Long83dd:	-156.4475		
Lat83dd:	20.773056		
Gps:	0	Utm:	-1
Owner user:	Toshio Hashimoto		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	226-	Well type:	ROT
Casing dia:	Not Reported	Ground el:	130
Well depth:	200		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	24	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-70
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-69
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003075

11
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000268888**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204657156272401		
Monloc name:	6-4627.AA IWS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7793005
Longitude:	-156.4538476	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	58.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19730720	Welldepth:	28
Welldepth units:	ft	Wellholedepth:	28
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1973-07-20		

Note: The site was dry (no water level recorded).

E12
NE
1/2 - 1 Mile
Higher

HI WELLS **HI9000000003090**

Wid:	6-4726-001	Island:	Maui
Well name:	Tmk 3-8-04	Old name:	Not Reported
Yr drilled:	1900		
Driller:	L. McCandless		
Quad map:	8		
Long83dd:	-156.439444		
Lat83dd:	20.785		
Gps:	0	Utm:	-1
Owner user:	Hawaiian Commercial & Sugar Co. (HC&S)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	251-	Well type:	Not Reported
Casing dia:	12	Ground el:	Not Reported
Well depth:	198		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		

Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-004:000
Aqui code:	60302		
Latest hd:	Not Reported	Wcr:	02-JAN-00
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003090

E13
NE **FED USGS** **USGS40000268895**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204718156263201		
Monloc name:	6-4726-01 W251		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7851332
Longitude:	-156.4394037	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	195.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19000101	Welldepth:	191
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

F14
SSW **FED USGS** **USGS40000268872**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204634156271101		
Monloc name:	6-4627-08 W225		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7729122
Longitude:	-156.4502367	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	105.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19480101	Welldepth:	116
Welldepth units:	ft	Wellholedepth:	116
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1973-07-16	92.28	

F15
SSW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003069**

Wid:	6-4627-008	Island:	Maui
Well name:	Tmk 3-9-01-33	Old name:	Not Reported
Yr drilled:	1948		
Driller:	W. Mullin		
Quad map:	8		
Long83dd:	-156.450278		
Lat83dd:	20.772778		
Gps:	0	Utm:	-1
Owner user:	Toshio Hashimoto		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	225-	Well type:	Not Reported
Casing dia:	6	Ground el:	Not Reported
Well depth:	116		
Solid case:	85	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	100
Test ddown:	Not Reported	Test chlor:	435
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	12	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TK		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		

Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-48
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003069

G16
East
1/2 - 1 Mile
Higher

HI WELLS **HI9000000003060**

Wid:	6-4626-001	Island:	Maui
Well name:	Waiakoa Gulch	Old name:	Not Reported
Yr drilled:	1949		
Driller:	W. Mullin		
Quad map:	8		
Long83dd:	-156.436667		
Lat83dd:	20.779444		
Gps:	0	Utm:	-1
Owner user:	County of Maui		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	250-	Well type:	Not Reported
Casing dia:	8	Ground el:	236
Well depth:	260		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	3	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	85
Test ddown:	Not Reported	Test chlor:	440
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-24
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60302		
Latest hd:	Not Reported	Wcr:	01-JAN-49
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003060

Map ID Direction Distance Elevation	Database	EDR ID Number
G17 **East** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000268890**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204658156262201		
Monloc name:	6-4626-01 W250		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7795781
Longitude:	-156.436626	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	236.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19490101	Welldepth:	260
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

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18 **South** **1/2 - 1 Mile** **Lower**	**HI WELLS**	**HI9000000003061**

Wid:	6-4626-002	Island:	Maui
Well name:	Kaonoulu Irr 1	Old name:	Not Reported
Yr drilled:	2012		
Driller:	Not Reported		
Quad map:	0		
Long83dd:	-156.446497		
Lat83dd:	20.769303		
Gps:	0	Utm:	0
Owner user:	Not Reported		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	10	Ground el:	118
Well depth:	133		
Solid case:	123	Perf case:	133
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	1.12	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	180		
Test date:	1/17/2012	Test gpm:	179

Test ddown:	2.46	Test chlor:	180
Test temp:	73.5	Test unit:	F
Pump gpm:	150		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	2012		
Draft yr:	Not Reported	Bot hole:	-15
Bot solid:	-5	Bot perf:	-15
Spec capac:	Not Reported		
Pump mgd:	.216		
Draft mgd:	Not Reported	Pump elev:	-8
Pump depth:	128	Tmk:	(2) 3-9-001:169
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	23-FEB-12
Pir:	2/23/2012		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003061

H19
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268878**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204646156273501		
Monloc name:	6-4627-01 W237		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7762453
Longitude:	-156.456903	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	23.00
Vert measure units:	feet	Vertacc measure val:	3
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

H20
WSW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003062**

Wid:	6-4627-001	Island:	Maui
Well name:	Tmk 3-9-01-24	Old name:	Not Reported
Yr drilled:	0		
Driller:	Not Reported		
Quad map:	6		
Long83dd:	-156.4575		
Lat83dd:	20.776111		
Gps:	0	Utm:	-1
Owner user:	T. Uehara		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	237-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	Not Reported
Well depth:	0		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	Other		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003062

I21
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000268883**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204653156274101		
Monloc name:	6-4627-09 W238		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7781896
Longitude:	-156.4585696	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	25.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19480101	Welldepth:	35
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

H22
WSW **FED USGS** **USGS40000268877**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204643156273801		
Monloc name:	6-4627-13 W236		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.775412
Longitude:	-156.4577364	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	20.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19500101	Welldepth:	29
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

I23
West **HI WELLS** **HI9000000003070**
1/2 - 1 Mile
Lower

Wid:	6-4627-009	Island:	Maui
Well name:	Tmk 3-9-01-50	Old name:	Not Reported
Yr drilled:	1948		
Driller:	W. Mullin		
Quad map:	6		
Long83dd:	-156.458611		
Lat83dd:	20.778056		
Gps:	0	Utm:	-1
Owner user:	T. Gusukuma		
Land owner:	Not Reported		

Pump insta:	Not Reported		
Old number:	238-	Well type:	Not Reported
Casing dia:	4	Ground el:	Not Reported
Well depth:	35		
Solid case:	35	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-48
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003070

H24
WSW **HI WELLS** **HI9000000003074**
1/2 - 1 Mile
Lower

Wid:	6-4627-013	Island:	Maui
Well name:	Tmk 3-9-15-14	Old name:	Not Reported
Yr drilled:	1950		
Driller:	W. Mullin		
Quad map:	6		
Long83dd:	-156.457778		
Lat83dd:	20.775278		
Gps:	0	Utm:	-1
Owner user:	J. Bosque		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	236-	Well type:	Not Reported
Casing dia:	8	Ground el:	20
Well depth:	29		
Solid case:	20	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	3.1	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-9
Bot solid:	9	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-50
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003074

J25
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268875**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204642156273801		
Monloc name:	6-4627-12 W235		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7751343
Longitude:	-156.4577364	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	18.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19500101	Welldepth:	31
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

J26
WSW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003073**

Wid:	6-4627-012	Island:	Maui
Well name:	Tmk 3-9-15-12	Old name:	Not Reported
Yr drilled:	1950		
Driller:	W. Mullin		
Quad map:	6		
Long83dd:	-156.457778		
Lat83dd:	20.775		
Gps:	0	Utm:	-1
Owner user:	C. Fedalizo		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	235-	Well type:	Not Reported
Casing dia:	8	Ground el:	Not Reported
Well depth:	31		
Solid case:	31	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-50
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003073

K27
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000268891**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204658156274401		
Monloc name:	6-4627-07 W244		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7795783
Longitude:	-156.4594029	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	18.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19470101	Welldepth:	24
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

K28
West
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003068**

Wid:	6-4627-007	Island:	Maui
Well name:	Tmk 3-9-01-29	Old name:	Not Reported
Yr drilled:	1947		
Driller:	J. Ventura		
Quad map:	6		
Long83dd:	-156.459444		
Lat83dd:	20.779444		
Gps:	0	Utm:	-1
Owner user:	A. Pimental		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	244-	Well type:	Not Reported
Casing dia:	10	Ground el:	Not Reported
Well depth:	24		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	1947		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-47
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003068

Map ID Direction Distance Elevation	Database	EDR ID Number
29 **West** **1/2 - 1 Mile** **Lower**	**HI WELLS**	**HI9000000003098**

Wid:	6-4727-008	Island:	Maui
Well name:	Zoofari Irr	Old name:	Not Reported
Yr drilled:	1997		
Driller:	Roscoe Moss Hawaii Inc		
Quad map:	6		
Long83dd:	-156.459444		
Lat83dd:	20.781944		
Gps:	0	Utm:	-1
Owner user:	Kihei Gateway Partners		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	PER
Casing dia:	8	Ground el:	17
Well depth:	40		
Solid case:	18	Perf case:	39
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	3.31	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	395		
Test date:	6/23/1997	Test gpm:	176
Test ddown:	1.2	Test chlor:	430
Test temp:	25.3	Test unit:	C
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-23
Bot solid:	-1	Bot perf:	-22
Spec capac:	147		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-077:009
Aqui code:	60302		
Latest hd:	Not Reported	Wcr:	19-JUN-97
Pir:	Not Reported		
Surveyor:	Bruce Lee		
T:	28500	Site id:	HI9000000003098

L30 **SW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000268870**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204628156273401		
Monloc name:	6-4627-03 W230		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7712457
Longitude:	-156.4566253	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	18.00
Vert measure units:	feet	Vertacc measure val:	3
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19470101	Welldepth:	29
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

K31
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000268889**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204657156274701		
Monloc name:	6-4627-06 W243		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7793006
Longitude:	-156.4602362	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	12.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19470101	Welldepth:	23
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

K32
West
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003067**

Wid:	6-4627-006	Island:	Maui
Well name:	Tmk 3-9-06-13	Old name:	Not Reported
Yr drilled:	1947		
Driller:	J. Ventura		
Quad map:	6		
Long83dd:	-156.460278		
Lat83dd:	20.779167		
Gps:	0	Utm:	-1
Owner user:	C. Clark		
Land owner:	Not Reported		

Pump insta:	Not Reported		
Old number:	243-	Well type:	Not Reported
Casing dia:	6	Ground el:	Not Reported
Well depth:	23		
Solid case:	21	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	2	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	1947		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-47
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003067

L33
SW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003064**

Wid:	6-4627-003	Island:	Maui
Well name:	Tmk 3-9-01-54	Old name:	Not Reported
Yr drilled:	1947		
Driller:	J. Ventura		
Quad map:	6		
Long83dd:	-156.456667		
Lat83dd:	20.771111		
Gps:	0	Utm:	-1
Owner user:	L. Ting		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	230-	Well type:	Not Reported
Casing dia:	10	Ground el:	Not Reported
Well depth:	29		
Solid case:	26	Perf case:	Not Reported
Use:	ABN - Lost		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QD		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-47
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003064

L34
SW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268869**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204626156273301		
Monloc name:	6-4627-11 W220		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7706902
Longitude:	-156.4563476	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	18.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19490101	Welldepth:	19
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

M35
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268881**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204650156274701		
Monloc name:	6-4627-04 W240		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7773563
Longitude:	-156.4602362	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	5.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19470101	Welldepth:	18
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

L36
SW **HI WELLS** **HI9000000003072**
1/2 - 1 Mile
Lower

Wid:	6-4627-011	Island:	Maui
Well name:	Tmk 3-9-01-99	Old name:	Not Reported
Yr drilled:	1949		
Driller:	W. Mullin		
Quad map:	6		
Long83dd:	-156.456389		
Lat83dd:	20.770556		
Gps:	0	Utm:	-1
Owner user:	S. Alo		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	220-	Well type:	Not Reported
Casing dia:	8	Ground el:	Not Reported
Well depth:	19		
Solid case:	18	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		

Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-49
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003072

N37
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000268885**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204655156274801		
Monloc name:	6-4627-05 W242		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7787451
Longitude:	-156.460514	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	10.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19470101	Welldepth:	17
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

M38
WSW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003065**

Wid:	6-4627-004	Island:	Maui
Well name:	Tmk 3-9-06-07	Old name:	Not Reported
Yr drilled:	1947		
Driller:	J. Ventura		
Quad map:	6		
Long83dd:	-156.460278		
Lat83dd:	20.777222		
Gps:	0	Utm:	-1
Owner user:	R. Agirogi		
Land owner:	Not Reported		

Pump insta:	Not Reported		
Old number:	240-	Well type:	Not Reported
Casing dia:	10	Ground el:	Not Reported
Well depth:	18		
Solid case:	6	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	1947		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-9-006:007
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-47
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003065

M39
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000268884**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204654156274801		
Monloc name:	6-4627-02 W241		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7784673
Longitude:	-156.460514	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	10.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19460101	Welldepth:	20
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

N40
West
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003066**

Wid:	6-4627-005	Island:	Maui
Well name:	Tmk 3-9-06-09	Old name:	Not Reported
Yr drilled:	1947		
Driller:	J. Ventura		
Quad map:	6		
Long83dd:	-156.460556		
Lat83dd:	20.778611		
Gps:	0	Utm:	-1
Owner user:	H. Watson		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	242-	Well type:	Not Reported
Casing dia:	10	Ground el:	Not Reported
Well depth:	0		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	1947		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-47
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003066

M41
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268880**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204648156274701		
Monloc name:	6-4627-10 W239		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7768008
Longitude:	-156.4602363	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	10.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19480101	Welldepth:	19
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

M42
West
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003063**

Wid:	6-4627-002	Island:	Maui
Well name:	Tmk 3-9-06-08	Old name:	Not Reported
Yr drilled:	1946		
Driller:	W. Mullin		
Quad map:	6		
Long83dd:	-156.460556		
Lat83dd:	20.778333		
Gps:	0	Utm:	-1
Owner user:	J. Ventura		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	241-	Well type:	Not Reported
Casing dia:	8	Ground el:	Not Reported
Well depth:	20		
Solid case:	17	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	133
Test ddown:	1.5	Test chlor:	484
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	83		
Draft mgy:	44	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	1946		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	89		

Pump mgd:	.119		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-46
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003063

M43
WSW **HI WELLS** **HI9000000003071**
1/2 - 1 Mile
Lower

Wid:	6-4627-010	Island:	Maui
Well name:	Tmk 3-9-06-06	Old name:	Not Reported
Yr drilled:	1948		
Driller:	W. Mullin		
Quad map:	6		
Long83dd:	-156.460278		
Lat83dd:	20.776667		
Gps:	0	Utm:	-1
Owner user:	I. Fujimoto		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	239-	Well type:	Not Reported
Casing dia:	7	Ground el:	Not Reported
Well depth:	19		
Solid case:	19	Perf case:	Not Reported
Use:	IRR - Irrigation (non-domestic, non-agriculture)		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60304		
Latest hd:	Not Reported	Wcr:	01-JAN-48
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003071

Map ID Direction Distance Elevation	Database	EDR ID Number
O44 **WNW** **1/2 - 1 Mile** **Lower**	**HI WELLS**	**HI9000000003091**

Wid:	6-4727-001	Island:	Maui
Well name:	Kihei Shaft	Old name:	Pump 1
Yr drilled:	1900		
Driller:	Not Reported		
Quad map:	6		
Long83dd:	-156.459722		
Lat83dd:	20.785833		
Gps:	0	Utm:	-1
Owner user:	Hawaiian Commercial & Sugar Co. (HC&S)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	14-SH	Well type:	SHF
Casing dia:	Not Reported	Ground el:	26
Well depth:	23		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	AGR - Crops and Processing		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	24.3	Test unit:	C
Pump gpm:	3340		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Qa		
Pump yr:	1970		
Draft yr:	Not Reported	Bot hole:	3
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	4.809		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-005:000
Aqui code:	60302		
Latest hd:	Not Reported	Wcr:	31-JUL-12
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003091

P45 **West** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000268893**	

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204701156275001		
Monloc name:	6-4727-02 W245		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7804116
Longitude:	-156.4610695	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	8.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19480101	Welldepth:	17
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

P46
West
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003092**

Wid:	6-4727-002	Island:	Maui
Well name:	Tmk 3-9-06-11	Old name:	Not Reported
Yr drilled:	1948		
Driller:	W. Mullin		
Quad map:	6		
Long83dd:	-156.461111		
Lat83dd:	20.780278		
Gps:	0	Utm:	-1
Owner user:	County of Maui		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	245-	Well type:	Not Reported
Casing dia:	6	Ground el:	Not Reported
Well depth:	17		
Solid case:	17	Perf case:	Not Reported
Use:	ABN - Lost		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	60301		
Latest hd:	Not Reported	Wcr:	01-JAN-48
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003092

Map ID Direction Distance Elevation	Database	EDR ID Number
O47 **WNW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000268896**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204722156274501		
Monloc name:	6-4727-01 S14		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.7862444
Longitude:	-156.4596806	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	26.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19000101	Welldepth:	23
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for MAUI County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96753

Number of sites tested: 10

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.010 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Well Index Database
Source: Commission on Water Resource Management
Telephone: 808-587-0214
CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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TMK 2 3-8-4-28

0 KAIWAHINE ST

Kihei, HI 96753

Inquiry Number: 4843250.3

February 02, 2017

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

02/02/17

Site Name:	Client Name:
TMK 2 3-8-4-28	Environmental Risk Analysis. LLC
0 KAIWAHINE ST	725 Hao Street
Kihei, HI 96753	Honolulu, HI 96821
EDR Inquiry # 4843250.3	Contact: Rachel Okoji

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Environmental Risk Analysis. LLC were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 189F-4117-876C

PO # NA

Project Ikaika Ohana Maui

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 189F-4117-876C

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- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

The Sanborn Library LLC Since 1866™

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TMK 2 3-8-4-28

0 KAIWAHINE ST

Kihei, HI 96753

Inquiry Number: 4843250.4

February 02, 2017

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

02/02/17

Site Name:	Client Name:
TMK 2 3-8-4-28	Environmental Risk Analysis. LLC
0 KAIWAHINE ST	725 Hao Street
Kihei, HI 96753	Honolulu, HI 96821
EDR Inquiry # 4843250.4	Contact: Rachel Okoji

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Environmental Risk Analysis. LLC were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	20.78018 20° 46' 49" North
Project:	Ikaika Ohana Maui	**Longitude:**	-156.445963 -156° 26' 45" West
		UTM Zone:	Zone 4 North
		UTM X Meters:	765891.06
		UTM Y Meters:	2299923.37
		Elevation:	144.89' above sea level

Maps Provided:

2013
1992, 1996
1983
1961
1954
1922

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2013 Source Sheets

Maalaea
2013
7.5-minute, 24000

Puu O Kali
2013
7.5-minute, 24000

1992, 1996 Source Sheets

Puu O Kali
1992
7.5-minute, 24000
Aerial Photo Revised 1992

Maalaea
1996
7.5-minute, 24000
Aerial Photo Revised 1996

1983 Source Sheets

Puu O Kali
1983
7.5-minute, 24000
Aerial Photo Revised 1976

Maalaea
1983
7.5-minute, 24000
Aerial Photo Revised 1977

1961 Source Sheets

MAUI
1961
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1954 Source Sheets

Puu O Kali
1954
7.5-minute, 24000
Aerial Photo Revised 1950

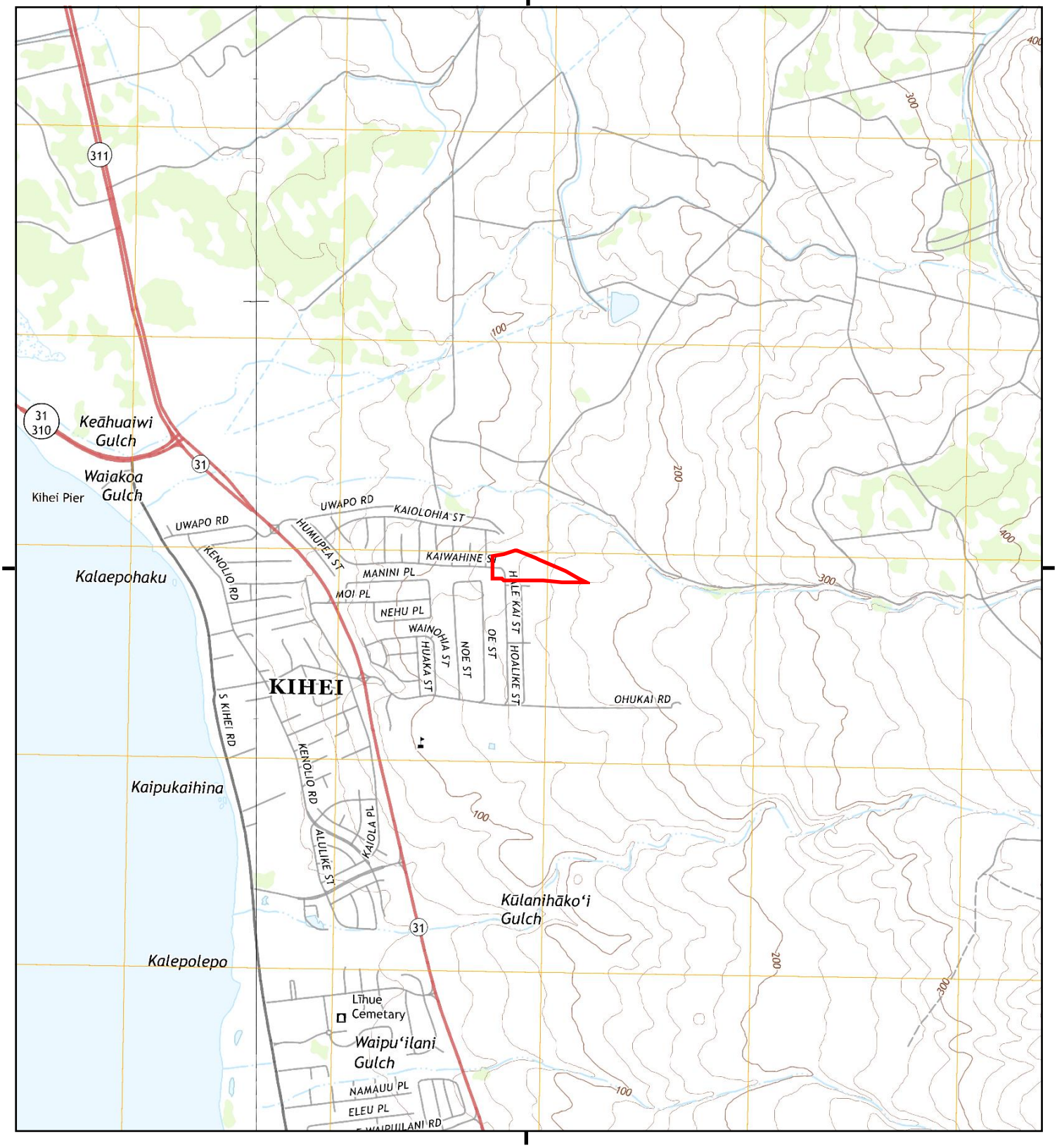
Maalaea
1954
7.5-minute, 24000
Aerial Photo Revised 1950

1922 Source Sheets

KIHEI
1922
7.5-minute, 31680

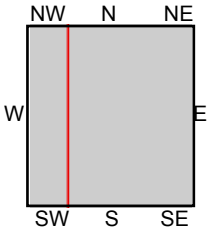
Historical Topo Map

2013



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



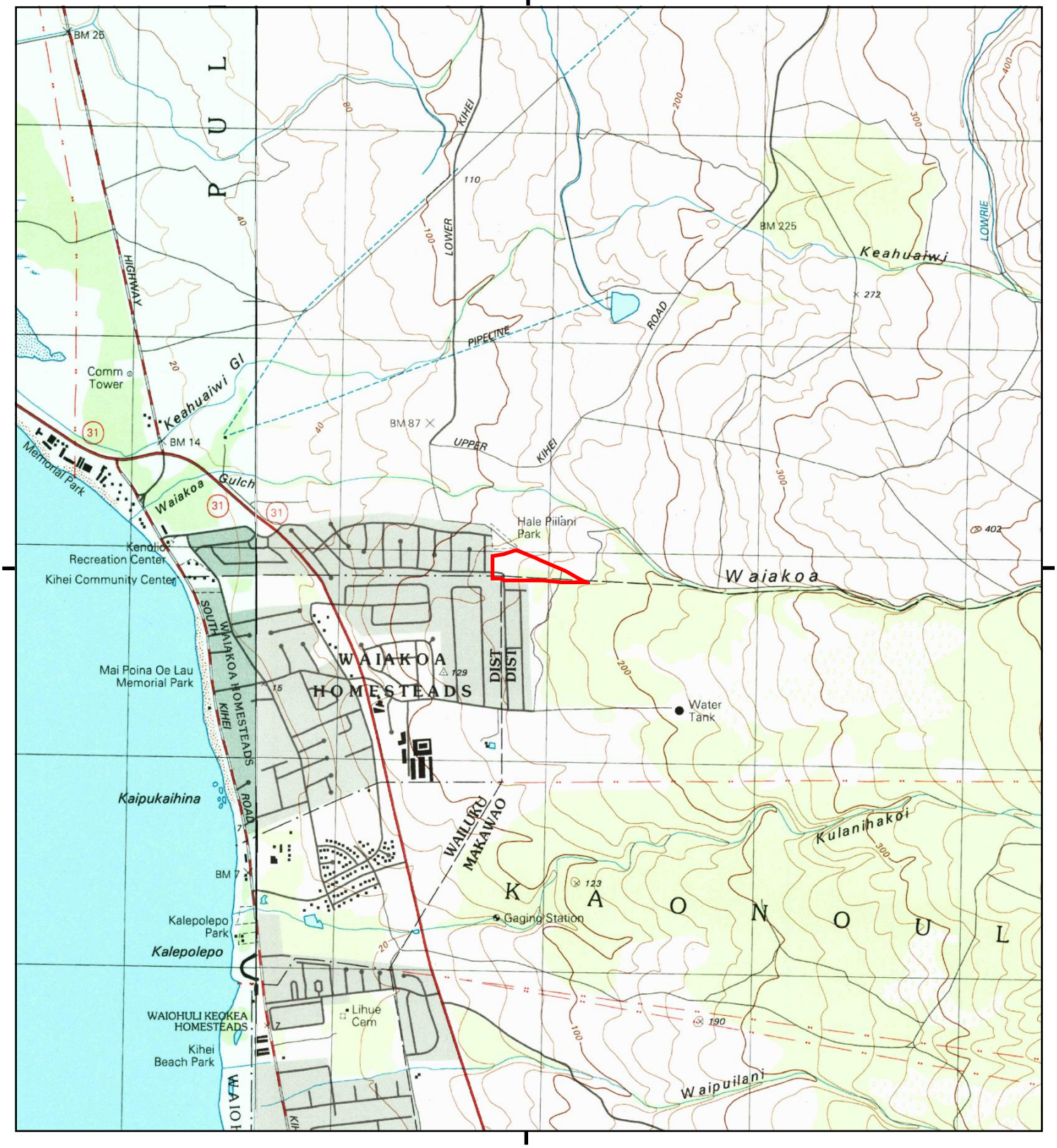
TP, Puu O Kali, 2013, 7.5-minute
W, Maalaea, 2013, 7.5-minute

SITE NAME: TMK 2 3-8-4-28
ADDRESS: 0 KAIWAHINE ST
Kihei, HI 96753
CLIENT: Environmental Risk Analysis. LLC

N

Historical Topo Map

1992, 1996



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

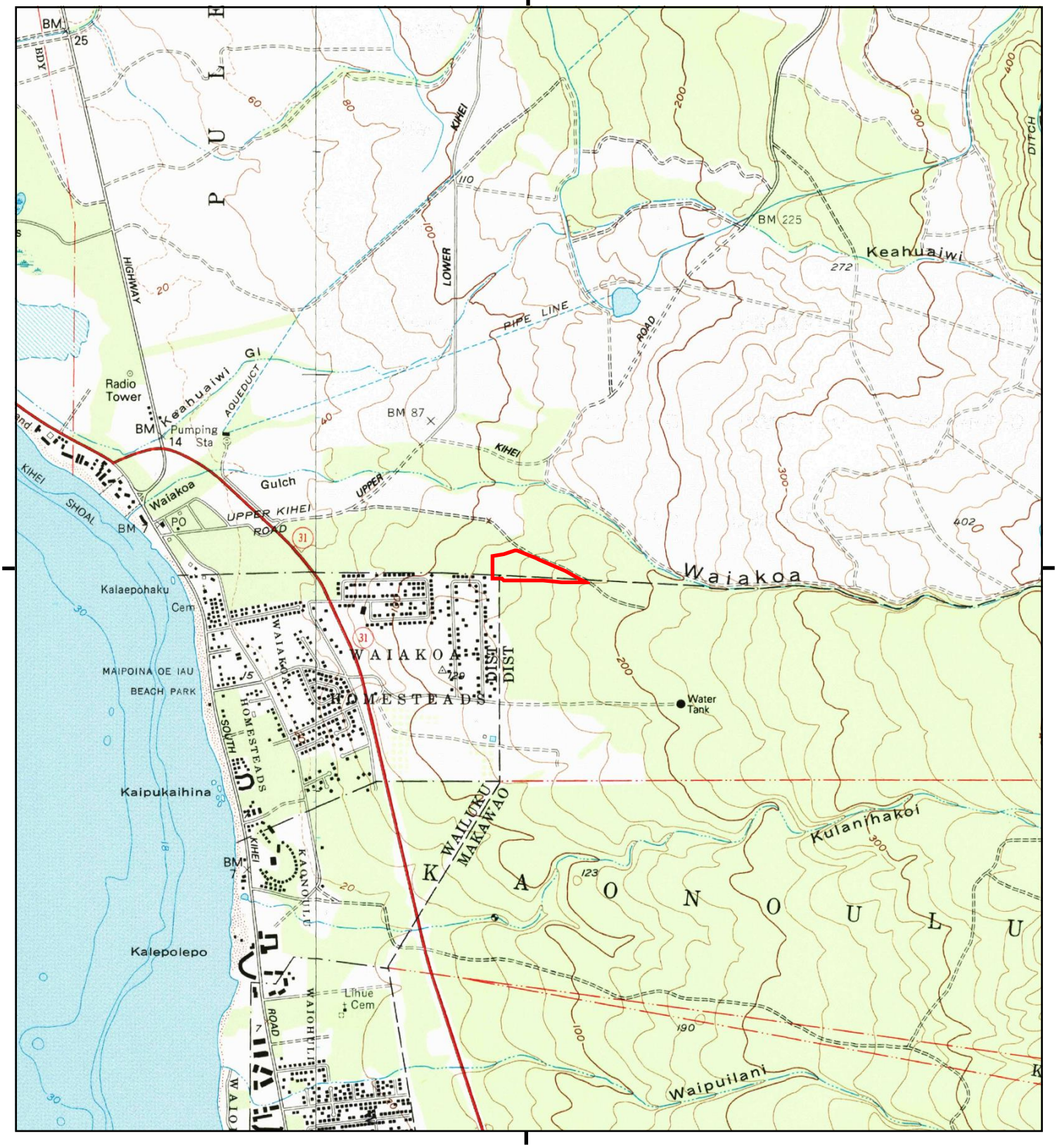
TP, Puu O Kali, 1992, 7.5-minute
W, Maalaea, 1996, 7.5-minute

SITE NAME: TMK 2 3-8-4-28
ADDRESS: 0 KAIWAHINE ST
Kihei, HI 96753
CLIENT: Environmental Risk Analysis. LLC

N

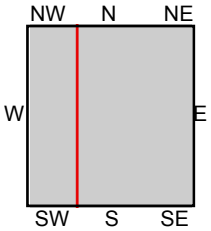
Historical Topo Map

1983



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Puu O Kali, 1983, 7.5-minute
W, Maalaea, 1983, 7.5-minute

SITE NAME: TMK 2 3-8-4-28
ADDRESS: 0 KAIWAHINE ST
Kihei, HI 96753
CLIENT: Environmental Risk Analysis. LLC

N

Historical Topo Map

1961

This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

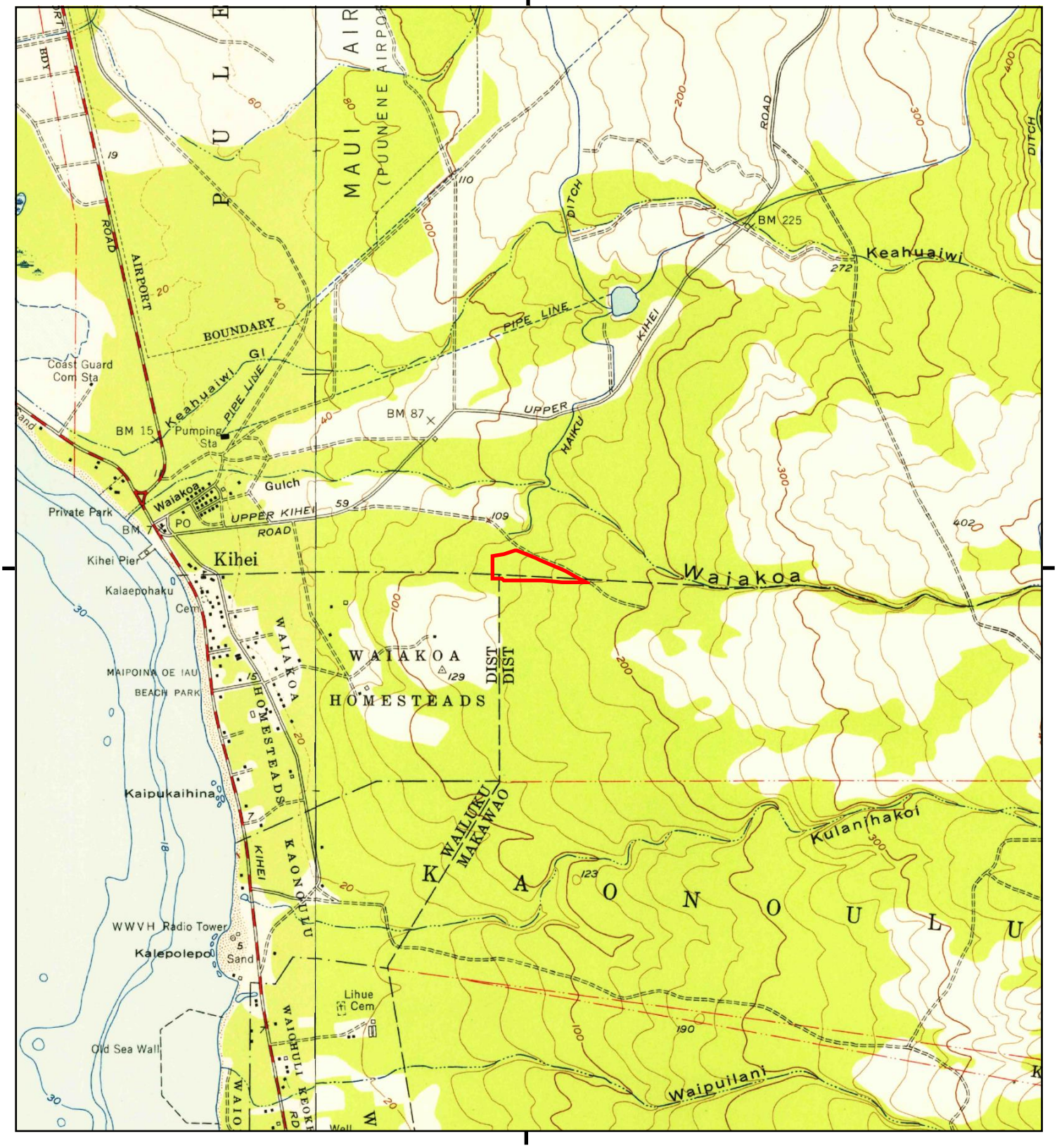
TP, MAUI, 1961, 15-minute

SITE NAME: TMK 2 3-8-4-28
ADDRESS: 0 KAIWAHINE ST
Kihei, HI 96753
CLIENT: Environmental Risk Analysis. LLC

N

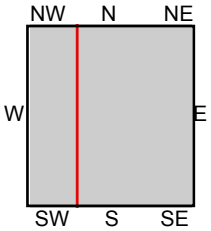
Historical Topo Map

1954



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



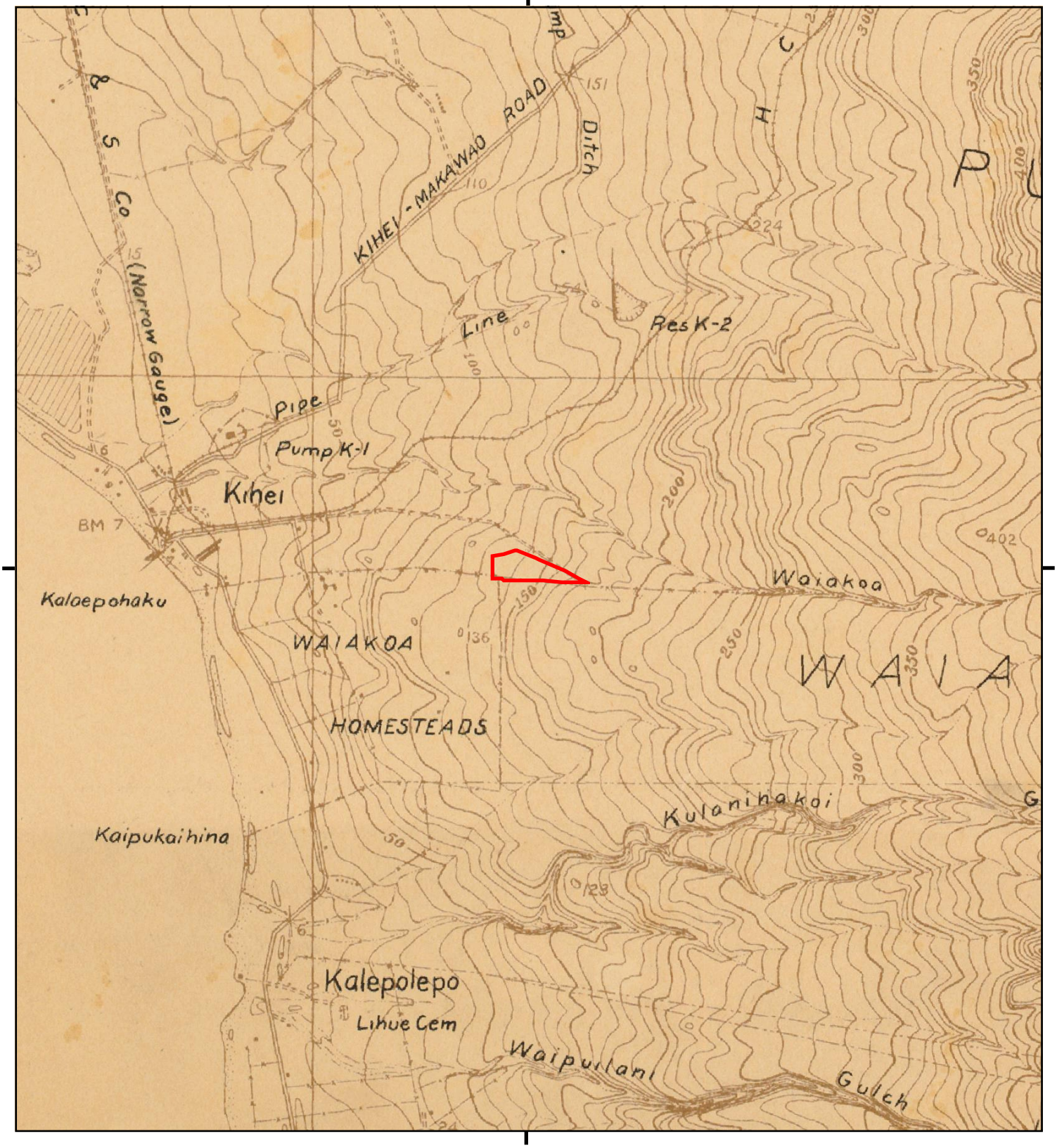
TP, Puu O Kali, 1954, 7.5-minute
W, Maalaea, 1954, 7.5-minute

SITE NAME: TMK 2 3-8-4-28
ADDRESS: 0 KAIWAHINE ST
Kihei, HI 96753
CLIENT: Environmental Risk Analysis. LLC

N

Historical Topo Map

1922



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, KIHEI, 1922, 7.5-minute

SITE NAME: TMK 2 3-8-4-28
ADDRESS: 0 KAIWAHINE ST
Kihei, HI 96753
CLIENT: Environmental Risk Analysis. LLC

N

TMK 2 3-8-4-28

0 KAIWAHINE ST

Kihei, HI 96753

Inquiry Number: 4843250.9

February 02, 2017

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

02/02/17

Site Name:

TMK 2 3-8-4-28
0 KAIWAHINE ST
Kihei, HI 96753
EDR Inquiry # 4843250.9

Client Name:

Environmental Risk Analysis. LLC
725 Hao Street
Honolulu, HI 96821
Contact: Rachel Okoji

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Search Results:

Year	Scale	Details	Source
2000	1"=500'	Acquisition Date: April 12, 2000	USGS/DOQQ
1992	1"=500'	Flight Date: September 23, 1992	USGS
1975	1"=500'	Flight Date: July 22, 1975	USGS
1951	1"=500'	Flight Date: January 28, 1951	USGS

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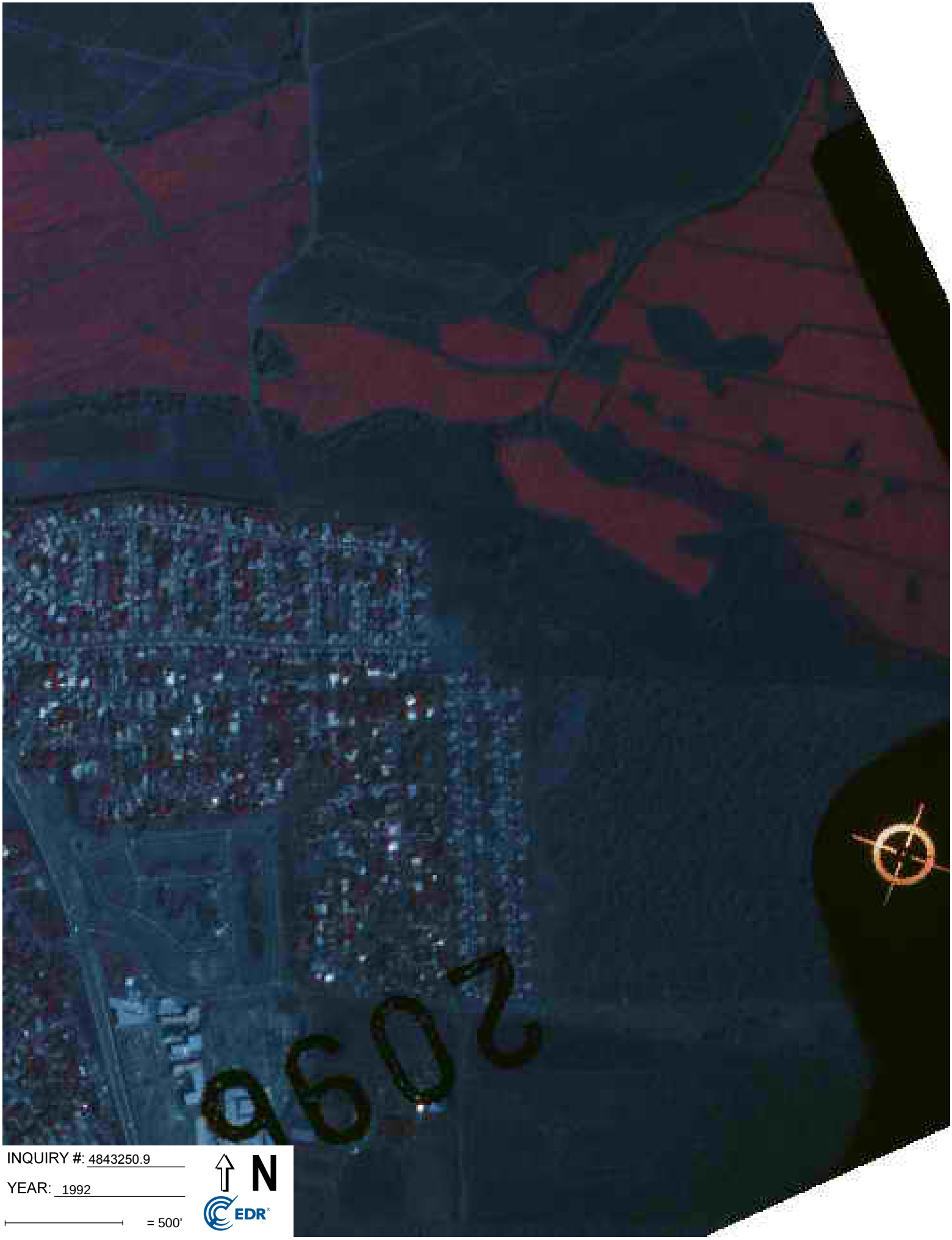
INQUIRY #: 4843250.9

YEAR: 2000

= 500'

N

EDR



INQUIRY #: 4843250.9

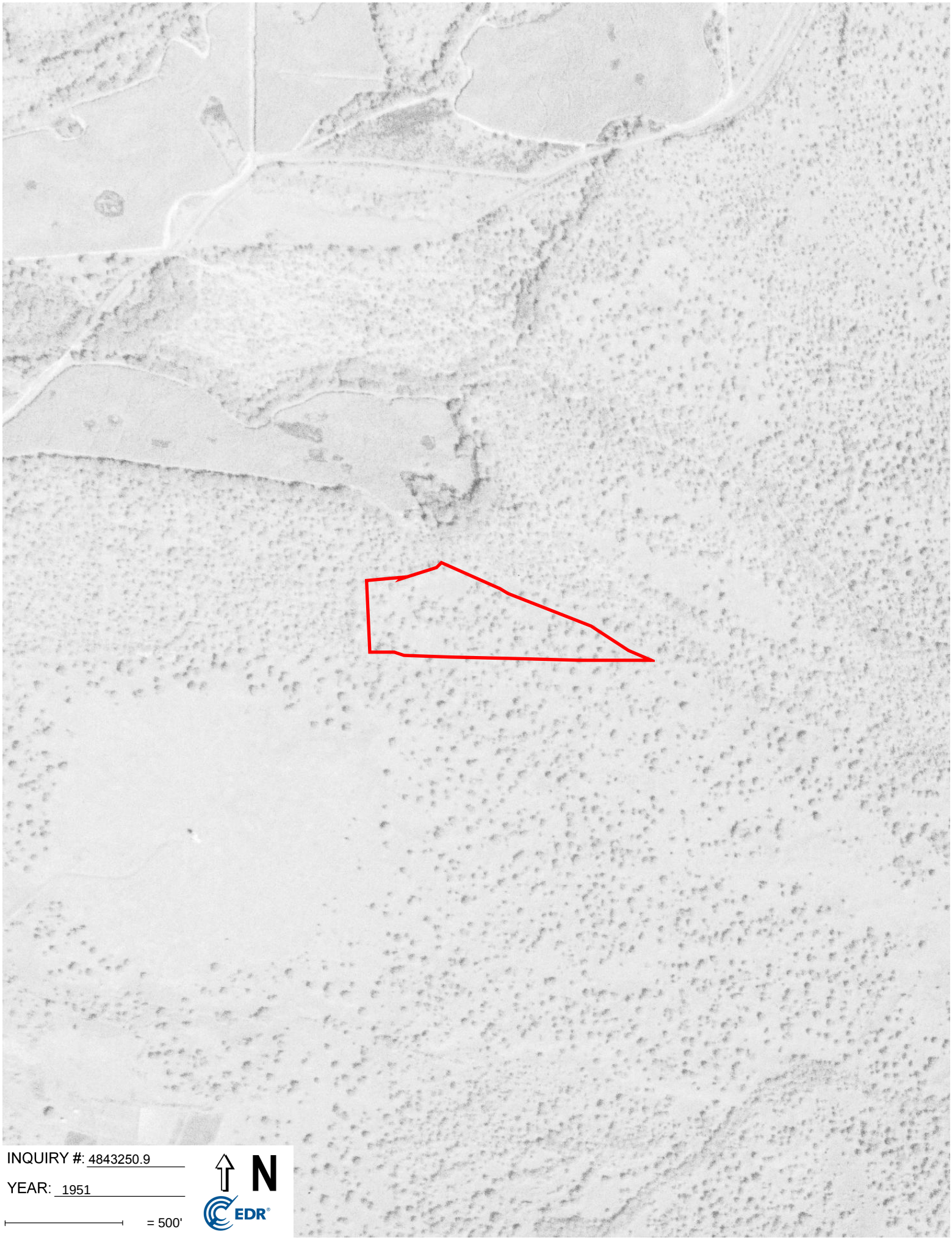
YEAR: 1992

= 500'

N

EDR

INQUIRY #: 4843250.9
YEAR: 1975
= 500'
N
EDR



INQUIRY #: 4843250.9

YEAR: 1951

= 500'

N

EDR

TMK 2 3-8-4-28
0 KAIWAHINE ST
Kihei, HI 96753

Inquiry Number: 4843250.5
February 03, 2017

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2013	☑	☑	Cole Information Services
2008	☑	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☐	Cole Information Services
1995	☑	☐	Cole Information Services
1992	☑	☐	Cole Information Services

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FINDINGS

TARGET PROPERTY STREET

0 KAIWAHINE ST
Kihei, HI 96753

Year	*CD Image*	*Source*
KAIWAHINE		
1995	pg A13	Cole Information Services
KAIWAHINE ST		
2013	pg A2	Cole Information Services
2008	pg A5	Cole Information Services
2003	pg A8	Cole Information Services
1999	pg A11	Cole Information Services
1995	pg A15	Cole Information Services
1992	pg A16	Cole Information Services

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
LAULOA ST			
2013	pg. A4	Cole Information Services	
2008	pg. A7	Cole Information Services	
2003	pg. A10	Cole Information Services	
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 2013

213	KAREN TAYLOR
214	DANIEL DEVINE
219	NELSON TOLENTINO
221	ROBINSON BERBANO
225	CLYDE WATANABE
231	DENNIS NAKAO
232	DAVID WHITE
242	LOU HIGA
254	OCCUPANT UNKNOWN
257	KYANNE KANOA
262	FAUSTINO TOPINIO
263	JOGET PALECPEC
270	OCCUPANT UNKNOWN
273	ROQUE TAMAYO
276	REYMUNDO SALAYES-ARAIZA
279	COLLEEN FORD
282	JAMES MAWAE
285	OCCUPANT UNKNOWN
288	MARC MOESSNER
294	LLOYD AOKI
297	LUIS MAGANIA
300	OCCUPANT UNKNOWN
303	DAVID THOMAS
306	ALLEN SHIMODA
312	CATHERINE KOBAYASHI
315	FLORENCIO MAMUAD
318	EFREN RABARA
321	MARIANITA VALLEDOR
324	CIRILO RABARA
327	JENNIFER AU-HOON
330	OCCUPANT UNKNOWN
336	KYLE RAY
339	EMMANUEL CARDONA
342	MANUEL ABAD
345	FRANK PADIN
348	ANTONIO ESPEJO
351	C CARDOZA
354	OCCUPANT UNKNOWN
362	NANTE MANANGAN
365	ASHLEY MUKAIHATA
366	RODERICK GONSALVES
374	JOSHUA SALGADO
384	ERENEO URBANEZ
398	JAMES IHU
401	DONALD VARNI
404	FRANCO KORDEI
	MELISSA CARLY
405	OCCUPANT UNKNOWN
410	OCCUPANT UNKNOWN
420	ROBERT NEWMAN

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 2013 (Cont'd)

425	LOUIS GONSALVES
436	MONALISA NOBRIGA
442	ALBERTO TUMPAP
445	JANUARIO BIO
452	RICHARD ENDRINA
455	ELPIDIO PADER
460	GERALD CASALLO
465	KAREN SOUZA
	MAUI SUNSET FLORALS
468	FRED KEISTER
475	PATRICK KAIWI
476	ELTON SAMBRANO
484	MICHAEL BISSELL
485	LIA THORPE
490	NELSON CORDEN
495	GREG MAXWELL
	OCCUPANT UNKNOWN
504	RUDY MELCHOR
512	DAVID LAMMERMAN
522	OCCUPANT UNKNOWN
531	OCCUPANT UNKNOWN
536	OCCUPANT UNKNOWN
542	OCCUPANT UNKNOWN
548	ALFONSO CASAYURAN
550	ABUNDIO ORTIZ
579	RODRIGO AGTUNONG

Target Street	Cross Street	Source
-	✓	Cole Information Services

LAULOA ST 2013

482	QUINCY JONES
489	ANTHONY MEHRTENS
490	RUBEN GONZALEZ
508	DEXTER AU
509	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 2008

213	RAYMOND TAYLOR
219	NELSON TOLENTINO
221	ROBINSON BERBANO
225	OCCUPANT UNKNOWN
231	DENNIS NAKAO
232	DAVID WHITE
242	LOU HIGA
257	AIVAO KANOA
262	ROSINA TOPINIO
263	JOGET PALECPEC
270	PATRICIA MURRAY
273	SHAUNA SMITH
276	JOHN EDDY
279	COLLEEN FORD
282	JAMES MAWAE
285	OCCUPANT UNKNOWN
294	LLOYD AOKI
297	D BRAY
300	KYU CHOE
	OCCUPANT UNKNOWN
303	DAVID THOMAS
306	ALLEN SHIMODA
312	MARK STEPHENS
315	ROBERT WHEELER
318	OFELIA RABARA
321	ROMANO PATROCINIO
324	OCCUPANT UNKNOWN
330	MARTIN BAGCAL
336	DOUGLAS RAY
342	MANUEL ABAD
345	OCCUPANT UNKNOWN
348	RUBEN YADAO
351	C CARDOZA
	SKIPS MAINTENANCE INC
354	ROBIN PIERCE
362	JONATHAN PEREZ
365	ASHLEY MUKAIHATA
366	PACITA IBANEZ
374	FLORENCE LAPUEBLA
384	ERENEO URBANEZ
392	EDWIN DEPERALTA
398	JAMES IHU
401	NATHAN BROWN
404	KELLY DAVIDSON
	MAUI WEAR
405	OCCUPANT UNKNOWN
410	ROMEO GUZMAN
425	LOUIS GONSALVES
435	JOHN RAINBOLT
442	ALBERTO TUMPAP

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 2008 (Cont'd)

445	JANUARIO BIO
452	PAUL SMITH
460	GREG CASALLO
465	WARREN PIERSON
468	OCCUPANT UNKNOWN
475	PATRICK KAIWI
476	ELTON SAMBRANO
483	OCCUPANT UNKNOWN
484	MICHAEL BISSELL
485	AMANDA LOPEZ
490	NELSON CORDEN
495	GREG MAXWELL
	OCCUPANT UNKNOWN
504	LOURDES AQUINO
512	DAVID LAMMERMAN
521	WILHELMINA TOLENTINO
522	OCCUPANT UNKNOWN
530	CHRIS STEELE
536	MARK KIYABU
548	ALFONSO CASAYURAN
550	ROQUE NAVARRO
555	MICHAEL VINCENT

Target Street	Cross Street	Source
-	✓	Cole Information Services

LAULOA ST 2008

482	OCCUPANT UNKNOWN
489	ANTHONY MEHRTENS
490	RUBEN GONZALEZ
503	OCCUPANT UNKNOWN
508	OCCUPANT UNKNOWN
509	GRACE DIFRANCO

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 2003

213	OCCUPANT UNKNOWN
214	OCCUPANT UNKNOWN
219	NELSON TOLENTINO
221	ROBINSON BERBANO
225	ELENA CABANIT
231	OCCUPANT UNKNOWN
232	DAVID WHITE
242	LOU HIGA
254	MICHAEL MEYER
257	BETTINA ANTLE
262	ROSINA TOPINIO
263	WILLIAM CRAKE
270	OCCUPANT UNKNOWN
273	SHAUNA SMITH
276	JOHN EDDY
279	COLLEEN FORD
282	JOSLYNN CALHAU
285	OCCUPANT UNKNOWN
288	ALIPIO RAMOS
294	LLOYD AOKI
297	JAMES SPEED
300	TRISTAN HAWK
303	DAVID THOMAS
306	ALLEN SHIMODA
312	KYLE BARNARD
315	ROBERT WHEELER
318	FERNANDO RABARA
321	JOSSIE TABULINAR
324	OCCUPANT UNKNOWN
327	DAVID PELEKAI
	DEANNA THYSSEN
	ERIKA WATSON
330	EDWARD JAMES
336	DOUGLAS RAY
339	MICHELE SAMMON
342	MANUEL ABAD
345	MILES KUNISHIGE
348	RUBEN YADAO
351	ALFRED CARDOZA
	TRIPLE C MAINTENANCE
354	ROBIN BEVIN
362	NANTE MANANGAN
365	ANN VALENTINE
366	PACITA IBANEZ
374	MIKE MORRIS
384	CARMELO NERI
392	SABRINA RAO
398	NANCY IHU
404	KELLY DAVIDSON
405	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 2003 (Cont'd)

410	GEORGE ILORETA
425	LOUIS GONSALVES
426	RAY VILUAN
435	AFFORDABLE MAUI WEDDINGS
	ALL INCLUSIVE MAUI WDNGS
	JOHN SOUTER
	JOHN SOUTER
442	ALBERTO TUMPAP
445	JOHN MCPHEE
452	PAUL SMITH
455	ELPIDIO PADER
460	ASCERTAIN ENTERPRISES
	KAREN YAMADA
465	STEPHEN TORRES
468	OCCUPANT UNKNOWN
476	ELTON SAMBRANO
484	MICHAEL BISSELL
485	MICHAEL MATHEWS
490	NELSON CORDEN
495	BRYAN MAXWELL
	MAXWELL DESIGN GROUP INC
	MONIKA ROHR
496	ORLANDO MERCADO
504	REYNALDO BRIONES
512	DAVID LAMMERMAN
521	WILHELMINA TOLENTINO
522	OCCUPANT UNKNOWN
530	HERBERT YUEN
531	CATALINA DULDULAO
536	AIDA BAGOYO
547	ALBERTO NAIBERG
548	OCCUPANT UNKNOWN
555	MICHAEL VINCENT

Target Street	Cross Street	Source
-	✓	Cole Information Services

LAULOA ST 2003

482	MAUREEN KAMAKAWIWAOLE
489	JODY KLEJNOT
490	RUBEN GONZALEZ
503	ROBERT MEDRANO
508	KRISTINE CASTILLO
509	GRACE DIFRANCO

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 1999

213	MICHAEL RICHMOND
	PAMELA FARLEY
214	CALIXTO MACULAM
221	R BERBANO
225	ELENA CABANIT
232	DAVID WHITE
242	ERIC HIGA
263	OCCUPANT UNKNOWN
270	DANIEL SHEPHERD
273	S SMITH
276	J EDDY
279	ENRICH TABISULA
282	JAMES MAWAE
288	ROBERT SCHWARTZ
	SCHWARTZ BOB PHOTOGRAPHY
297	AMOR FAILANO
303	DAVID THOMAS
306	ALLEN SHIMODA
315	DONALD MOZINGO
	ROBERT WHEELER
318	FERNAND RABARA
321	MARTIN BAGCAL
324	RIDA PAZ
330	EDWARD JAMES
	HERMAN CALPITO
336	DOUG RAY
339	JAMES LIERLY
342	FRANK BARRETT
	MANUEL ABAD
348	NELEAH ALDEZA
351	ALFRED CARDOZA
	RICK ORIZ
354	NED GURULE
366	JOHN HICKS
	PACITA IBANEZ
374	C BLUE
392	FREDDIE KOKESH
404	STUART SANDIN
410	ROMEO GUZMAN
420	ERIC BROWN
435	MICHAEL ANDERSON
445	BEN MEDINA
452	K WOOD
455	ELPIDIO PADER
460	ASCERTAIN ENTERPRISES
468	OCCUPANT UNKNOWN
475	JAY SCHULTZ
476	ELTON SAMBRANO
484	MICHAEL BISSELL
485	MICHAEL MATHEWS

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 1999 (Cont'd)

495	OCCUPANT UNKNOWN
496	ORLANDO MERCADO
512	DAVID LAMMERMAN
521	P K SYSTEMS X RAY SERVICE
	WILHELM TOLENTINO
522	LARRY DAGDAG
530	HERBERT YUEN
531	CATALIN DULDULAO

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE 1995

213	FARLEY, PAMELA
	RICHMOND, MICHAEL
221	BERBANO, R L
232	WAPIENIK, L
242	HIGA, ERIC A
257	CRAWFORD, SCOTT
270	SHEPHERD, DANIEL W
276	EDDY, J
297	FAILANO, AMOR
303	THOMAS, DAVID M
306	NATION, W M
	SHIMODA, ALLEN
312	LILLY, M
315	LILE, DON
318	RABARA, F
330	BAGCAL, MARTIN
	GALIZA, PASTOR
	JAMES, EDWARD
336	RAY, DOUG
339	LIERLY, JAMES
342	ABAD, MANUEL N
345	OSHITA, KYLE
351	CARDOZA, ALFRED JR
354	GURULE, JO
362	CASHATT, CHING
	MORRIS, JOEL
365	GARDLING, D
366	IBANEZ, PACITA
374	LAPUEBLA, F
392	ESPINO, CARLOS
404	CINGLE, FRANK A
	KNISELY, GARY H
	VALADEZ, RUDY
410	GUZMAN, ROMEO Y
420	PIOLLA, GERALD
425	GONSALVES, LOUIS J
435	CANALES, PAUL
436	CARR, JODI
445	NEAL, L
	SEMBRANO, EDDIE
465	DELIMA, D JR
468	KEISTER, FRED
484	BISSELL, MICHAEL A
485	MATHEWS, BARBARA
	MATTHEWS, BARBARA
504	PINEDA, M
512	LAMMERMAN, DAVID A
521	DAZHAN, A P
	TOLENTINO, W
522	DAGDAG, B C

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE 1995 (Cont'd)

530	YUEN, HERBERT
531	LEONG, RICHARD SR
536	SALARDA, ROMEO
542	COVINGTON, P K
	FLORA, E
	HARBAUGH, A
548	TANAKA, TOBERT Y

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 1995

257	M & S BUILDERS
312	LYNCH, STEVE
365	CHOY, CURTIS
475	KREIFELS, T L
495	MAUI MAYCO PUMP SVC

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 1992

213	FARLEY, PAMELA
	RICHMOND, MICHAEL
221	BERBANO, R L
232	WAPIENIK, L
242	HIGA, ERIC A
257	CRAWFORD, L
263	SHINOZUKA, WAYNE
268	HASENPFLUG, R
270	SHEPHERD, DANIEL W
273	KEANAAINA, JOHN
276	EDDY, J
279	ZELK, THOMAS
282	JACKMAN, JIM
285	WILLCOCKS, M
303	THOMAS, DAVID M
306	NATION, W M
	SHIMODA, ALLEN
312	SHIMODA, ALLEN
315	LILE, DON
318	RABARA, F
324	SHEROAMBA, SCOTT
330	DOMINGO, JOSE
	GALIZA, PASTOR
336	RAY, DOUG
342	ABAD, MANUEL N
	LEMIEUX, JODI
	TUOMELA, A
345	GRUENHAGEN, CARMEN
	OSHITA, KYLE
351	CARDOZA, ALFRED JR
	MARRAMA, ROBERT
354	GURULE, JO
374	LAPUEBLA, F
404	CINGLE, FRANK A
	FIDDMONT, STEVEN
	KNISELY, GARY H
425	GONSALVES, LOUIS J
435	JAMES, EDWARD
	WARD, SIXTO
436	MACKEY, HOPE
445	DUCOS, ALAN
	SEMBRANO, EDDIE
455	PADER, ELPIDIO
460	DAFOE, DANA
465	FAMEITAU, SIONE
	TORRES, C
475	SHUCK, LEE
484	BISSELL, MICHAEL A
485	HADDOCK, DAWN
	HASBROOK, C F

Target Street	Cross Street	Source
✓	-	Cole Information Services

KAIWAHINE ST 1992 (Cont'd)

512	LAMMERMAN, DAVID A
521	DAZHAN, A P
	TOLENTINO, W
530	YUEN, HERBERT
542	COVINGTON, P K
547	VARNEY, BRAD

Appendix **D**

MAUI ELECTRIC COMPANY TRANSFORMER DOCUMENTATION

Maui Electric Company, Ltd.• 210 West Kamehameha Avenue•P. O. Box 398•Kahului, Maui, HI 96733•(808) 871-8461

Maui
Electric

TSC 2.5.1 (MECO)
Due Diligence Inquiries
June 14, 2016

Rachel Okoji
Environmental Risk Analysis, LLC
820 West Hind Drive #240606

Rachel Okoji:

Re: Transformer Information: Transformers located near TMK 238004028, Kaiwahine Street, Kihei

In response to your inquiry, we provide the following information regarding Maui Electric Company, Ltd. transformers:

There are no Maui Electric transformers in service on or bordering TMK 238004028.

Pursuant to the Toxic Substances Control Act (TSCA), the U.S. Environmental Protection Agency (EPA) promulgated a prohibition against distribution in commerce of PCBs in 1979. Accordingly, Maui Electric does not consider units purchased after 1979 to contain PCBs. Maui Electric numbers transformers when it receives them from the manufacturer. Our transformers numbered above 7777 are considered non-PCB since they were purchased after 1979.

It should be noted that Maui Electric's transformer purchases have always specified mineral oil, rather than PCBs, as the insulating material. Although Maui Electric has always specified mineral oil, it is possible that incidental contamination of older transformers may have occurred in the manufacturing process prior to the 1979 prohibition. Furthermore, EPA regulations require that all untested mineral oil transformers (such as those utilized in Maui Electric's distribution system) manufactured prior to July 1, 1979 must be considered to contain between 50 and 500 parts per million PCBs. Maui Electric would like to emphasize our transformers are in compliance with the Toxic Substances Control Act and all applicable related regulations. All leaking transformers are replaced when discovered and any associated soil affected by PCBs is remediated (at our expense) in accordance with all applicable EPA and State Department of Health guidelines. In addition, all older transformers that fail in the field are tested and disposed of accordingly.

It is important to understand that EPA rules regarding PCBs allow their continued use (at any concentration) in transformers for the remainder of the transformers' useful lives subject to certain conditions. These rules do not require testing of the transformers while they are in use and in good working order.

Please note that this location information is based on the information provided in your request. If you have further questions, please contact me by phone at 808-872-3548.

Sincerely,

Brittani Capps-Balinbin
Environmental Compliance Engineer

Appendix **E**

SITE RECONNAISSANCE PHOTOGRAPHS

Photograph #1

Description of Photograph:

The county park with a weather station is found along the northwest border of the Site.

Photograph Date:
May 18, 2016

Photograph #2

Description of Photograph:

Abandoned and burned-out cars can be found to the north of the Site.

Photograph Date:
May 18, 2016

Photograph #3

Description of Photograph:

Several areas within the Site had been subject to brush fires.

Photograph Date:
May 18, 2016

Photograph #4

Description of Photograph:

Northwest to north of the Site is undeveloped.

Photograph Date:
May 18, 2016

Photograph #5

Description of Photograph:

Directly west of the Site are residential homes.

Photograph Date:
May 18, 2016

Photograph #6

Description of Photograph:

A pile of construction waste was observed off of Kaiwahine Street.

Photograph Date:
May 18, 2016

Photograph #7

Description of Photograph:

The southwest corner of the Site is fenced off. Residential homes were observed to the south and west.

Photograph Date:
May 18, 2016

Photograph #8

Description of Photograph:

The southeastern half of the Site is bordered by undeveloped land.

Photograph Date:
May 18, 2016

Photograph #9

Description of Photograph:

The Site is undeveloped with dry grass and kiawe trees.

Photograph Date:
May 18, 2016

Photograph #10

Description of Photograph:

The eastern portion of the Site.

Photograph Date:
May 18, 2016

Photograph #11

Description of Photograph:

The southwest corner of the Site.

Photograph Date:
May 18, 2016

Photograph #12

Description of Photograph:

Facing east within the Site.

Photograph Date:
May 18, 2016

Photograph #13

Description of Photograph:

In 2017, boundary of the site was observed with a broken fence.

Photograph Date:
February 11, 2017

Photograph #14

Description of Photograph:

Abandoned and burned-out cars can be found to the north of the Site.

Photograph Date:
February 11, 2017

Photograph #15

Description of Photograph:

Other debris and car battery observed on the north side of the Site.

Photograph Date:
February 11, 2017

Photograph #16

Description of Photograph:

Moped and other debris located on the north side of the Site.

Photograph Date:
February 11, 2017

Photograph #17

Description of Photograph:

Undeveloped area to the east of the Site.

Photograph Date:
February 11, 2017

Photograph #18

Description of Photograph:

The Site is undeveloped and vegetated with grass and kiawe trees.

Photograph Date:
February 11, 2017

Photograph #19

Description of Photograph:

The Site is undeveloped and vegetated with grass and kiawe trees.

Photograph Date:
February 11, 2017

Photograph #20

Description of Photograph:

The eastern portion of the Site.

Photograph Date:
February 11, 2017

APPENDIX B

ARCHEOLOGICAL SURVEY

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SCS Project Number 634-1

AN ARCHAEOLOGICAL INVENTORY SURVEY OF A 9.289-ACRE PROPERTY IN NORTH KIHEI, PULEHU NUI AHUPUA`A, WAILUKU DISTRICT, ISLAND OF MAUI, HAWAI`I [TMK: (2) 3-8-004:028]

Prepared by:
Guerin Tome, B.A.
and
Michael Dega, Ph.D.

January 2005

Prepared for:
Mr. John Sindoni
Royal Main Properties, LLC.
3163 Hoomua Drive
Kihei, Maui, Hawai`i 96753

ABSTRACT

An Archaeological Inventory Survey, including limited subsurface testing, was conducted on a 9.289-acre property in North Kihei, Maui, Hawai`i [TMK: (2) 3-8-004:028]. The subject property has been partially modified by illegal dumping, utilization as an informal dirt bike course, and ranching activities. Two archaeological sites comprising four structural features were identified during this Inventory Survey. The sites were interpreted respectively as a World War II-related site (State Site No. 50-50-09-5801) and a traditional Hawaiian site (State Site No. 50-50-09-5802). The two sites date utilization of the subject parcel from pre-Contact times (*i.e.*, pre-1778) to the United States Marine Corps' 4th U.S. Marine Division training during the closing years of World War II. Site -5801 and Site -5802 have been designated as significant under Criterion D, for information content only. Site recordation and excavation of these two sites has been completed. No further archaeological work is recommended for the subject property.

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INTRODUCTION

At the request of John Sindoni of Royal Main Properties, LLC, Scientific Consultant Services (SCS), Inc. performed an Archaeological Inventory Survey on 9.289-acres of land within Pulehu Nui Ahupua`a, Wailuku District, Island of Maui, Hawai`i [TMK: (2) 3-8-004:028] (Figures 1 and 2). The fee owner of the 9.289-acre parcel is Royal Main Properties, LLC. Fieldwork was conducted between November 17 and 19, 2005 by SCS archaeologists Jim Powell, B.A. and Guerin Tome, B.A., under the direction of the Principal Investigator Michael Dega, Ph.D. Archaeological Inventory Survey was performed to investigate the presence/ absence of archaeological features on the subject parcel, and if found, assess feature function, construction methods, associated cultural deposits, and site significance. In total, two sites were identified during this Inventory Survey. The sites have been designated as Site 50-50-09-5801 (WW II training site) and Site 50-50-09-5802 (pre-Contact agricultural/habitation complex).

GEOGRAPHIC SETTING

The 9.289-acre irregularly-shaped subject parcel is situated between *c*. 30 to 44 meters above mean sea level (amsl) along the leeward coast of southwest Maui. The north and western flanks of the project area are bordered by Hale Piilani Park [TMK (2) 3-8-004:031] and undeveloped land owned by Alexander and Baldwin (A & B), Inc. [TMK (2) 3-8-004:022]. The western flank is also bordered by additional Hale Piilani Subdivision house lots. At the time of this writing, Kaiwaihine and Hale Kai Streets (*i.e.*, a mergence of both streets) divided the project area into two sections: one small section (designated Area A; Figures 3 and 4) and one larger section (designated Area B; Figure 5). The southern flank of the project area is bordered by undeveloped land owned by Haleakala Ranch (TMK 2-2-002:016).

In Area B, natural features included undulating terrain with small protruding basalt (*a`a*) outcrops. The same side of the parcel contains a gentle slope (approximately 2–3 degrees) descending in a southeast-northwest direction. The western portion of the project area was also undulating, although slightly more level than the eastern portion of the project area. The portion of the project area arbitrarily labeled Area A had been utilized for the illegal abandonment of motorized vehicle (John Sindoni of Royal Main Properties, LLC, personal communication). This is the same location in which low lying vegetation was removed and replaced with basalt gravel. Additionally, motorized recreational vehicles (*i.e.*, motocross bikes) have altered the natural landscape to one of a present-day dusty wasteland (Figure 6).

Figure 1: United States Geological Survey (USGS) Map Showing Project Area Location.

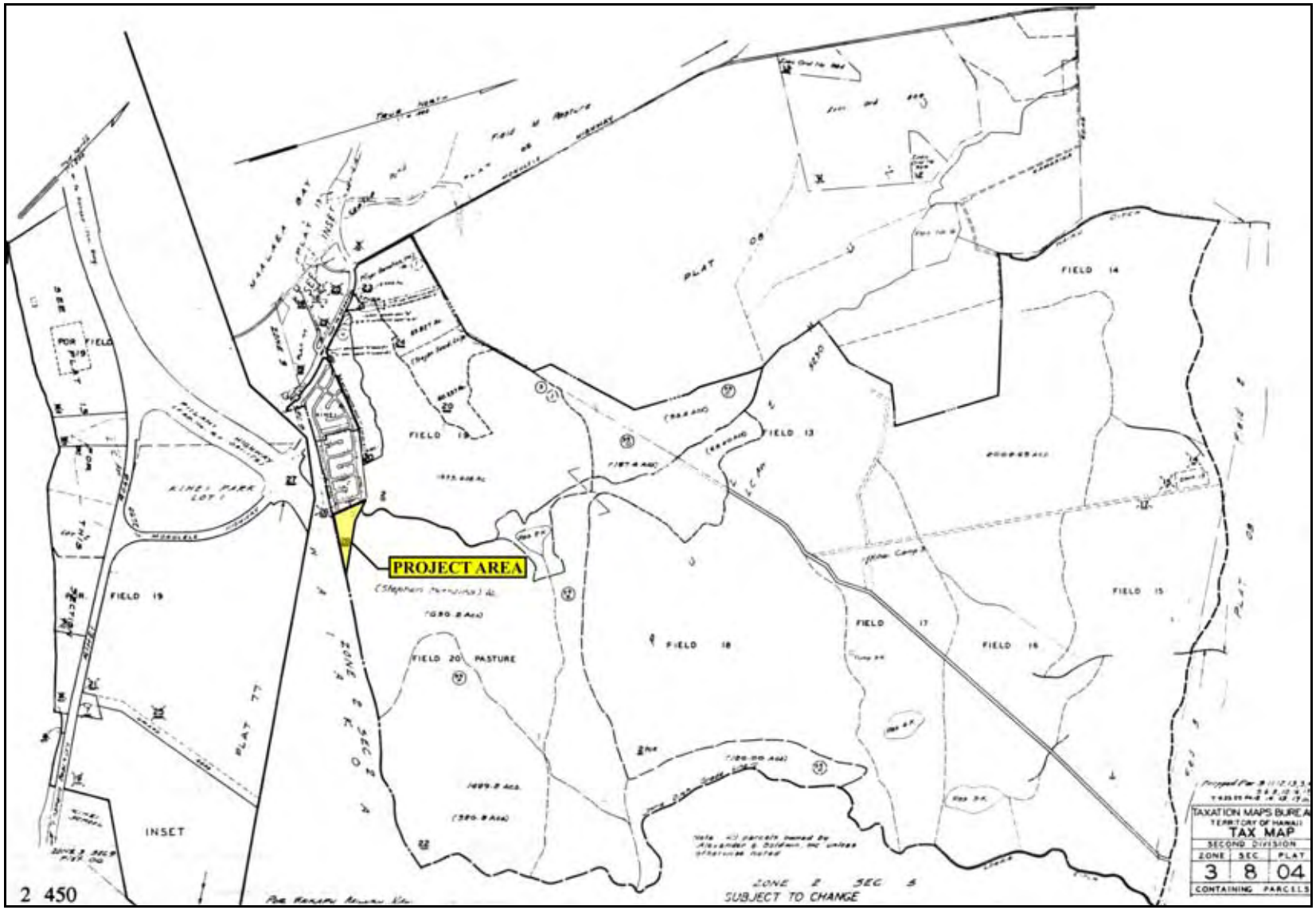

Figure 2: Tax Map Key [TMK (2) 3-8-004:028] Showing Project Area Location.

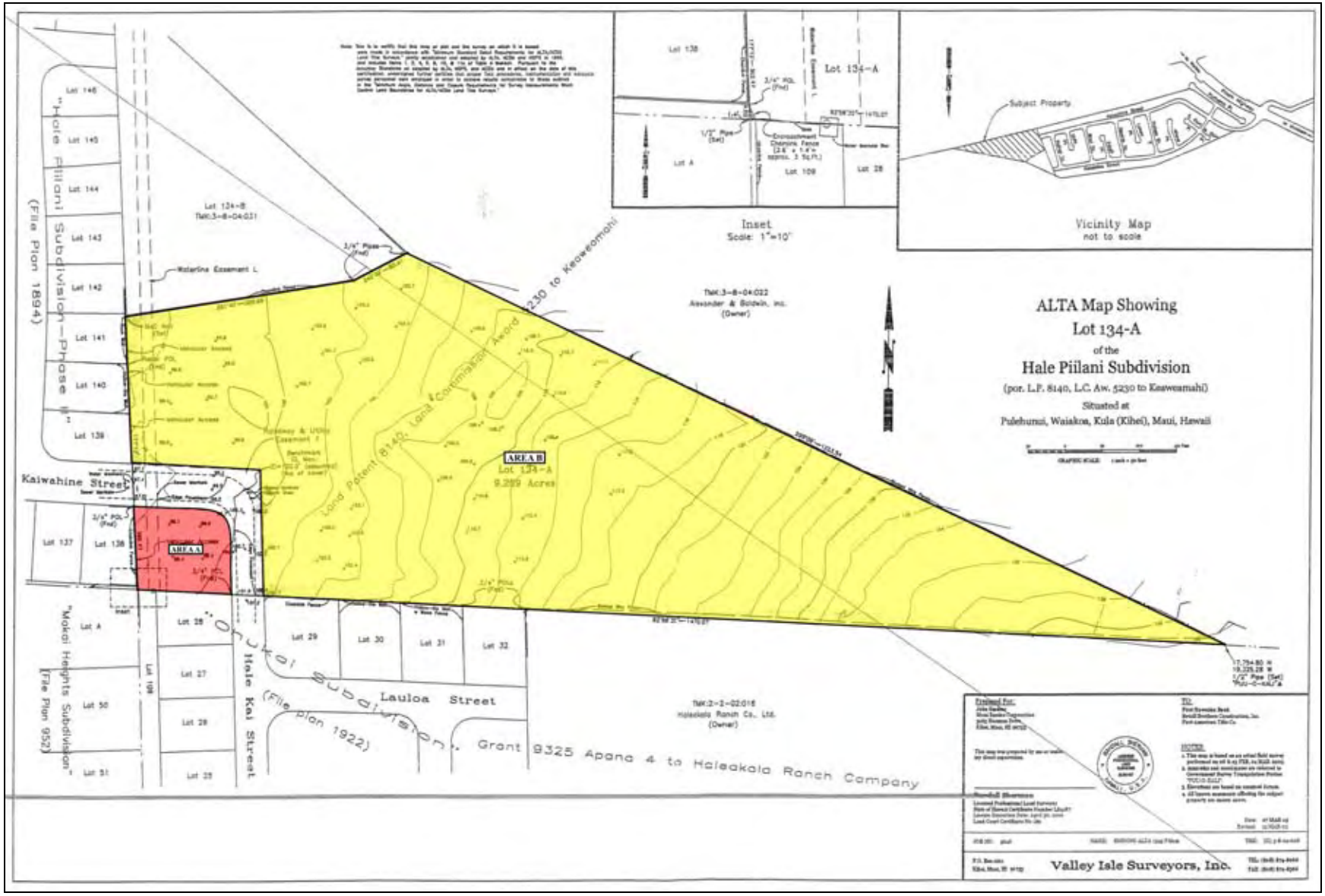

Figure 3: Project Area Map Showing Area A and Area B.

Figure 4: Photograph of Project Area A. View to North.

Figure 5: Photograph of Project Area B West Half. View to Northwest.

Figure 6: Photograph of Project Area B Showing Non-Authorized Modern Debris. View to East.

PROJECT AREA SOILS

Based on Foote *et al*. (1972:126–127), the project area is situated within the Waiakoa very stony silty clay loam (WgB) series and the Waiakoa extremely stony silty clay loam (WID2) series. The Waiakoa very stony silty clay loam occurs on 3 to7 percent slopes with permeability being moderate, slow runoff, and a slight erosional hazard. Erosion has increased multifold with recreational use of the area. Use of this soil in the past has primarily been limited to sugarcane, pasture, and wildlife habitat. Slightly similar is the Waiakoa extremely stony silty-clay loam which occurs on 3 to 25 percent slopes and is eroded, with medium runoff and severe erosional hazard. Stones cover approximately 3 to 15 percent of this soil surface. With the exception of sugarcane, this soil type has been utilized for pasture and wildlife.

Subsurface testing of the WID2 soils on which the two archaeological sites were identified in the project area revealed a single soil layer underlain by random protrusions of *a`a* outcrops. Outcrops of *a`a* were observed mainly in the eastern portion of Area B. Random, small *a`a* boulders were found scattered where undulating terrain existed.

PROJECT AREA VEGETATION

With the exception of few plant native species such as *`ilima* (*Sida fallax*) and *`uhaloa* (*Waltheria americana*), vegetation in the project area was generally composed of non-native

introductions. Although decomposing grasses dominated the vegetation regime, larger vegetation common to arid regions such as *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), and castor bean (*Ricinus communis*) were present. Sisal (*Agave sisalana*) and horseradish trees (*Moringa oleifera*) were observed near the project area's south boundary, adjacent to existing residential housing.

CLIMATE

The project area lies in the dry, arid region of Maui's southwest coast. Rainfall indicators, according to Price (1983:62), show that the project area receives no more than five inches per year, with accumulations occurring mostly during the months of December and January. Unlike lower, coastal elevations, higher elevations of Pulehu Nui Ahupua`a receive more precipitation due to fog drip and lower temperature climates. The frequency of the project area receiving upland wash is based on the amount of water accumulated upslope and the available water drainages created within or near the project area.

Given the lack of constant water resources within the project area, crops such as dryland sweet potato may have been the only feasible subsistence resource planted in the area prior to the advent of large-scale mechanical irrigation systems. All test units excavated during this project revealed no more than a single soil layer. This shallow layer could have potentially provided a minimal, but suitable, budding environment. Modern aeolian conditions of the project area suggest soils within the project area have been adversely affected. Upland, gravitational wash also may have contributed to massive soil movement through the project area environs.

TRADITIONAL AND HISTORIC SETTING

Pulehu Nui Ahupua`a is located on the southwestern side of Maui in the modern districts of both Wailuku and Makawao. Prior to being named the District of Makawao, the same district was traditionally known as Kula District. The project area would have been partially within the traditional District of Kula. As such, the project area's traditional and historic settings will be highlighted with events that occurred in the traditional District of Kula rather than in the modern District of Wailuku.

The project area is situated near the leeward coast that is located on the lower, western slope of Maui's largest volcano, Haleakala, the latter which rises to over 3,048 meters (10,000 ft) amsl. The coastal area, on which the project area lies, is currently referred to as "Kihei," which translates as "cape" or "cloak" in Hawaiian (Pukui *et al*. 1974:110).

TRADITIONAL TIMES

Oral documentation for pre-Contact activity exists for the district of Kula as a whole that document activities such as chiefly (*ali`i*) landings, battles, and catholic work practices such as fishing and planting (Sterling 1998). Documented oral accounts of pre-Contact activities and events occurring in the Kihei area, specifically naming Pulehu Nui Ahupua`a, are limited to events that occurred on a single, given period rather than long terms events (*e.g*., area used as a place of worship for an extended period of time). A. Fornander, in Sterling (253:1998), reported that the area of Kiheipukoa was the location "where peace was concluded and festive reunions took place of warlike encounters." The festive reunions took place once Alapainui, once *Moi* of Maui, found out that his nephew Kamehamehanui succeeded him. A separate story dates to 1776 when Kalani`opu`u landed his warring faction at Kiheipuko`a between Kealia and Kapa`ahu thinking that "the *Alapa* were to drink of the waters of Wailuku. The *Alapa* were those who excelled at being warriors. Unfortunately for Kalani`opu`u, his warriors lost when battling with forces of Kahekili at Wailuku.

HISTORIC TIMES

Although some accounts informally mention the possibility that Spanish traders may have known about the Hawaiian Islands two hundred years prior to the "discovery" by Captain James Cook on the H.M.S. Resolution, Cook was the first known Westerner to have recorded the Hawaiian Islands (Speakman Jr. 1978:19). When Cook "discovered" Maui in November 1778, he anchored near Kahului. Although attempting to travel to Maui's western end, he never travelled to the leeward side of East Maui where the project area lies. The first Western explorer credited with landing on Maui is Admiral Jean Francois Galaup, Compte de la Perouse of France. La Perouse, the name most used to recognize the French explorer, set foot in the area known today as La Perouse Bay, an area south of Makena.

From the early historic period, several industries became paramount in Kula: whaling, Irish potato cultivation, ranching, and sugar cane cultivation. Most of these endeavors transformed the upland landscape itself. The coastal areas were more impacted by commerce-related activities (*e.g.,* businesses, hostels, stores). Kolb *et al*. (68–69:1997) state that Kalepolepo (*i.e.,* Kihei) was an important provisioning area through the 1830s, when the area became "a hub of activity for all of Kula." From the 1840s to 1860s a whaling station was maintained in Kihei. According to Colin *et al.* (14:2000), in 1849 John Halstead constructed "The Koa House" at Kalepolepo in Kihei, one of several such buildings supporting the whaling industry in Kihei. The Koa House served as a store, a residence, and a gathering place for whalers.

Following Contact, one of the greatest historic events impacting the population of the Hawaiian Islands was the Great *Māhele* of 1848. Thought to have been created under pressure from foreigners, Kauikeaouli (Kamehameha III) enacted the Great *Māhele*, which altered the system of land transactions and legal land ownership processes for the entire population of the islands:

> By mid-century, the fledgling [Hawaiian] Kingdom undertook the single most significant inducement to cultural change, the Great *Māhele* or division of lands between the king, chiefs, and government, establishing land ownership on a Western-style, fee-simple basis. From this single act, an entire restructuring of the ancient social, economic, and political order followed [Kirch 1985:309].

The *Māhele* statute paved the way for the private ownership of land [awarded claims were called Land Commission Awards]. The present project area does not contain Land Commission Awards (LCAs). However, LCA 5230 is the closest to the project area and is shown on TMK (2) 3-8-04 to exist north of the project area on the plains of Pulehu Nui Ahupua`a (see Figure 2). LCA 5230 was awarded to Keaweamahi on September 28, 1853 with following Royal Patent numbers 8140 and 8252 being issued to the same individual on March 16, 1855 concluding a payment of $5.00 (Burgett and Spear 5:1997). On this LCA Keaweamahi claimed 5 *apana* (land portions), 7 *lo`i* (wet taro) and 2 *kula* (pastures). Saltwater-associated geography (*i.e.*, shore and dunes) was also claimed by Keaweamahi as part of LCA 5230.

Based on a map contained within Sterling (242:1998) in conjunction with the tax map keys, the ahupua`a of Pulehu Nui is shown to continue northeast upslope on the northwest side of Haleakala. LCA 5230 also extends into the upper portion of Pulehu Nui Ahupua`a. An overview of upland LCAs within the upland portion of Pulehu Nui Ahupua`a reveal that land at the higher elevations were utilized for sweet and Irish potatoes (Waihona `Aina 2005). LCA 9019:3, claimed by Helehua, located just below the modern Kula Highway and between Holopuni and Pulehu Roads, had pasture lands claimed. As a side note, Irish potatoes were also existent at the time of the claim (*i.e.*, the year 1848) although to pinpoint the location of such is difficult due to insufficient map sources. Above the Kula Highway, LCA 4567:4 claimed by Wahine in 1848, stated that Irish potatoes were present on his land and that sweet potatoes were also grown on his land, although not on the same piece of land (*ibid.*). Supplemental ethnographic research concerning upland LCA usage includes Bartholomew and Bailey (115:1994) who relay that “Hawaiians in higher elevations…. traditionally grew sweet potatoes.”

For an in-depth look of LCA usage in upland areas of adjacent *ahupua`a*, please see Kolb *et al.* 1997.

Based on the information provided by the Tax Map Key, it appears that LCA 5230 is quite extensive and extends over a large portion of the *ahupua`a*. It further indicates that LCA 5230 is the largest LCA awarded in Pulehuinui Ahupua`a. Thus, it is difficult to ascertain where particular activities were conducted (*e.g., lo`i, kula, apan*a) within the LCA.

In Sterling (254–257:1998) it was reported that the late Governor W. L. Moehonua was an "owner" of Pulehu Nui Ahupua`a and the boundaries of the *ahupua`a* were somewhat vague. Through the information provided by the Māhele, it was acknowledged that Keaweamahi previously owned land within the *ahupua`a*. Oral testimonies from multiple sources contribute to somewhat more specific but general boundaries of the *ahupua`a* and conclusions were found in favor of the late governor.

From the mid-19th Century to the early 20th Century, coastal activity remained concentrated at Kalepolepo, but by the 1870s whaling diminished and the potato industry moved to the Ulupalakua area (Colin *et al.* 26:2000). Coastal Kula became somewhat of a dusty, "dirty place" (Wilcox 1921). As a result of industry movement out of the Kihei area (for a time) or the vast expanses of land available, Haleakala Ranch utilized many coastal portions of Kula in the later 1800s.

Like the rest of Hawai`i (and the world) during the 1940s, Kihei was interrupted by the advent of World War II (WWII). The coast from Ma`alaea to Makena was used by United States military forces as training areas in preparation for amphibious assaults that were to be made in the Pacific war theater (Davis and Fortini 2004, Tome and Dega 2004). The main military service operating along the coastal region of the Wailuku and Makawao (Kula) Districts was the United States Marine Corps' 4th Marine Division, which used the coast during the latter part of 1944. The beautiful beaches of Kihei and Wailea were transformed with the construction of concrete military bunkers to simulate enemy positions expected during amphibious combat operations. A non-4th Marine Division military unit that also trained along the coastline was the underwater demolition teams, known as UDT. Comprised of Army and Navy personnel, these people were trained to rig and detonate explosives on various obstacles in the way of the U.S. amphibious assaults.

Following WWII, the Kihei coastline returned to its tranquil activities of ranching and the development of residential areas. During the 1960s, the Kihei stage was set for development of the area as a vacation haven for tourists and homebuyers which continues to the present day.

PREVIOUS ARCHAEOLOGY

Prior to the current archaeological investigation, the present project area had not been subject to archaeological evaluation. However, few archaeological projects were conducted near the current project area. Kennedy (1988) conducted a visual inspection of TMK (2) 3-8-004:029 that did not identify archaeological sites. The absence of sites was attributed to prior development of the area for a construction baseyard with an installation of a large concrete culvert. In 1991 Rotunno-Hazuka (1991) conducted an Archaeological Inventory Survey for the Kai Makani project that failed to locate any surface or subsurface archaeological sites due to extensive ground disturbance. A 1992 Archaeological Inventory Survey of the proposed location for the Kihei Gateway Complex led to the identification of a remnant, historic concrete bridge (State Site 50-50-09-31) crossing Waiakoa Stream. It was suggested that the bridge was probably related to a narrow gauge cane railroad that operated through the area and may have serviced Kihei Camp 1 (Sinoto and Pantaleo 1992). Between 1995 and 1999 an Inventory Survey (followed by two addendums) were conducted for the Puunene Bypass/ Mokulele Highway Improvements Corridor (TMK 3-8: 04, 05, 06, and 07; Burgett and Spear 1997; Chaffee *et al.* 1999). No additional archaeological sites were identified. However, one previously recorded site was relocated and identified as the Naval Air Station Puunene Dump Site (State Site 50-50-09-4164). Another archaeological study on TMK (2) 3-9-041:027, conducted just northwest of the project area did not encounter any archaeological sites via the excavation of nine stratigraphic trenches (Pestana and Dega 2002).

Archaeological studies in the greater Kihei area began in the early 20th Century by T. Thrum (1909), J. Stokes (1909–1916), and W. M. Walker (1931). These surveys included areas of leeward Maui and inventoried both coastal and upland sites of the Kula District. In the ahupua`a of Pulehu Nui Walker listed two sites identified as Haleokane Heiau and Nininiwai Heiau (see Sterling 1998:253).

Decades later, archaeological projects would document sites south of the current project area with the likelihood that those few sites endured the onslaught brought on by the agricultural industry when sugar cane and other cash crops flourished, especially in areas *mauka* of Piilani Highway. The bulk of the archaeological studies were conducted a few miles south of the

current project area within the main body of Kihei and are presented below for a quick look at the settlement pattern within the project area *ahupua`a*. For an in-depth discussion see Gosser *et al.* (1993) and Clark and Dixon (1992).

According to Kirch (1985), occupation and exploitation of Maui's leeward area began in the mid-thirteenth century and continued up to Western contact and beyond. There were no perennial streams and the climate was hot and dry with minimal rainfall (*e.g*., Wailea had a rainfall of 1.89 inches in 1959, Kirch 1971:62). Because of the environmental constraints, permanent occupation occurred late, after A.D. 1600, when the population had grown to such an extent it became necessary to utilize marginal areas. However, some permanent habitation sites have been identified as dating between A.D. 1280 and A.D. 1531 (Cordy 1981:199, Gosser *et al*. 1993:258–259).

The traditional activities in the Wailea (and possibly Kihei) area are thought to be related to sweet potato cultivation and the utilization of marine resources (Barrere 1975). The earliest sites were situated in the coastal region and were interpreted as *kauhale* (cluster of domestic features) and *heiau*. Artifacts representing fishing activities and large quantities of volcanic glass were recovered from the archaeological studies conducted in the area.

Several archaeologists suggested the inland zone was a "barren" zone based on environmental factors that cause the inland area to be marginally exploitable (Rosendahl 1972; Dobyns 1988). Construction of features in the inland region was less complex and sites were more randomly situated than along the coast (Gosser *et al*. 1993:18). This area was interpreted as having been primarily used for temporary habitation associated with horticultural activities (Kirch 1970; Dobyns 1988; Roe and Cleghorn 1990). Agricultural activities were represented by stone mounds that were probably used for sweet potato cultivation. Enclosures, C-shaped structures, hillside terracing, rock mounds were interpreted as representing temporary or seasonal habitation. Clearing mounds and boundary markers (*ahu*) were recorded in close proximity to each other and in the same ecological zone as the project area (Schilt and Dobyns 1980; Gosser *et al*. 1995:10). Some of the informal features, including walls and enclosures, may have been related to military activities during WWII or historic ranching practices (Kirch 1970; Clark 1974; Haun 1978).

An area of study, with extensive archaeological work, is the Wailea Land Company's 'Southern Acreage' golf course developments. Archaeological studies have been performed in this area by Kirch (1970, 1971), Barrera (1974), Cleghorn (1975), Davis and Bordner (1977),

Dobyns (1988), and Gosser and Cleghorn (1990; Gosser *et al*. 1993), resulting in the identification of C-shaped structures, terraces, mounds, modified outcrops, enclosures, walled pits, rock shelters, platforms, cache pits, alignments, burials, and historical habitation (Dang *et al*. 1993). For a more in depth discussion of the previous archaeology, see Gosser *et al*. 1993.

SETTLEMENT PATTERN

Numerous settlement models for the traditional district of Honua`ula (and its Kula extent such as the present project area) have been proposed by researchers such as Kirch (1970), Barrera (1974), Cleghorn (1975), Cordy (1977), Cordy and Athens (1988), and Gosser *et al*. (1993 and 1995). Parallels may be drawn between the studies above with the project area based physiographic and archaeological characteristics.

Cordy and Athens (1988) suggested that although the traditional district of Honua`ula seems to have had a fairly harsh environment; people settled in this district and coped successfully with the elements, both on the coast and inland. Early surveys indicated that the region between the coast and inland farming areas have been labeled the 'barren zone,' which was used for temporary or seasonal habitation and agriculture. Cordy and Athens agreed that major land use patterns, initially generated by archaeologists in the 1970s, indicated that inland areas where rainfall was adequate were primarily farming zone (1998). Permanent habitation and intensity of settlement correlated to rainfall amounts (Cordy and Athens 1988:23–24, 100–103; Gosser *et al*. 1993).

Prehistorically, crops in the inland areas were dryland taro, sweet potato, and banana (Barrera 1974; Cordy and Athens 1988:18). More relevant to the project area is Handy and Handy's description of environmental conditions on the leeward side of Haleakalā:

> The great bulk and altitude of Haleakalā makes its southern flank practically a water less desert, and the southeast and west flanks relatively dry, so that there were no *lo`i* (pond fields) cultivation at all. The arid country below the west and south slopes of Haleakalā, including Kula, Honua`ula, Kahikinui, and Kaupo, were dependent on sweet potato (Handy and Handy 1972: 488).

Irish potato became an important crop in the mid-1800s. Ranching became a significant enterprise in the uplands during historic times.

Based on a synthesis of previous archaeological work in the intermediate or barren zone of the Kula district where the project area is located, the landscape is expected to contain a few scattered temporary or seasonal habitations and associated dryland agricultural sites. Site density

in this area is likely very low. Farther inland in this region sites might include field shelters and special activity areas represented by small C-shaped structures, terraces, platforms, rock mounds, and caves. Construction of these features is expected to be less formal and more random than those along the coast (Gosser *et al*. 1993). Due to the presence of habitation features, human burials are always a concern. Historic-period features might include walls and enclosures that represent the ranching era.

METHODOLOGY

FIELD METHODOLOGY

Multiple field tasks were completed during the Archaeological Inventory Survey program. First, pedestrian survey was conducted in order to identify archaeological sites and assess project area geographical/physiographical features. Transect spacing of ten meter intervals was employed as surface visibility was high. Interval spacing of ten meters between SCS personnel was employed to insure adequate area coverage during the survey. Once archaeological sites were located, they were marked with biodegradable florescent pink flagging tape. Vegetation (*i.e.,* primarily decomposing grass) was manually removed from site features with grass knifes. During the pedestrian survey, results were complied on standard graphing paper as well as with digital photography. Each site was plotted on an overall project area plan view map supplemented by a handheld Garmin eTrex Legend global positioning system (GPS) unit that located each archaeological feature. The datum used for the GPS unit was NAD83. The accuracy of the GPS unit utilized for the project was recorded as well and is located in Appendix A of this report. True north compass orientation was also employed. All measurements were recorded in metric. Vegetation within the project area was identified using Whistler (1995).

Manually excavated test units (TU) were placed against feature architecture to investigate archaeological features for construction methods and locate any associated subsurface midden deposits. Arbitrary excavation levels within soil layers were utilized for further stratigraphic control within all test units. All soils were screened through 3-mm and 6-mm wire mesh. Soil stratigraphy encountered during excavation was documented utilizing metric graph paper and United States Department of Agriculture (USDA) Munsell soil color charts. If identified, portable archaeological materials were collected and recorded with applicable provenience and placed in plastic and paper bags for laboratory analysis.

LABORATORY METHODOLOGY

All field notes, digital photographs, and collected archaeological materials were curated at the SCS laboratory in Honolulu. Representative stratigraphic profiles have been drafted for presentation within this report. Representative plan view sketches showing location and morphology of identified sites/features/deposits were illustrated. All retrieved artifact and midden samples are cleaned, sorted, and analyzed. Marine gastropods and bivalves are identified using applicable references. Significant artifacts are scanned or photographed and classified for qualitative analysis. All metric measurements and weights are also recorded for quantitative analysis. Midden samples are minimally identified to the lowest possible taxonomic classification (*e.g.*, bivalve, gastropod mollusk, echinoderm, fish, bird, and mammal). All data are clearly recorded on standard laboratory forms that included numbers and weights (as appropriate) of each constituent category. Laboratory results are presented in Appendix B of this report.

INVENTORY SURVEY RESULTS

Archaeological Inventory Survey led to the identification of two archaeological sites composed of four surface features, both sites being located in Area B of the project area. These sites were situated on the slight sloping of the project area's undulating terrain while low areas near residential housing and public roads (*i.e.*, Kaiwahine and Hale Kai Streets) displayed landscape modifications totaling approximately 50 percent of the subject parcel (see Figures 5 and 6)(Figure 7). Land alterations were observed along the project area's north, east, and west perimeters and consisted of dirt roads created via motocross bike use and minor landscape modifications for beautification. The two documented archaeological sites consisted of C-shapes and a rock terrace structures. All features within each site were excavated and are described below.

SITE 50-50-09-5801 WORLD WAR TWO MILITARY SITE

Site -5801 was the first archaeological site identified during the current Archaeological Inventory Survey. The site encompasses an approximate area of 47.25 m² and consisted of two structural features designated as Features 1 and 2. The site was situated on a relatively level area on a mild (≈ 3 degree) southeast to northwest-trending slope at an elevation of approximately 46 m (150 ft.) near the project area's southern boundary (see Figure 5). Additionally, the project area's southern boundary was located approximately 43.5 meters south of this site. Features 1 and 2 were both C-shaped structures with corners. The ground surface of

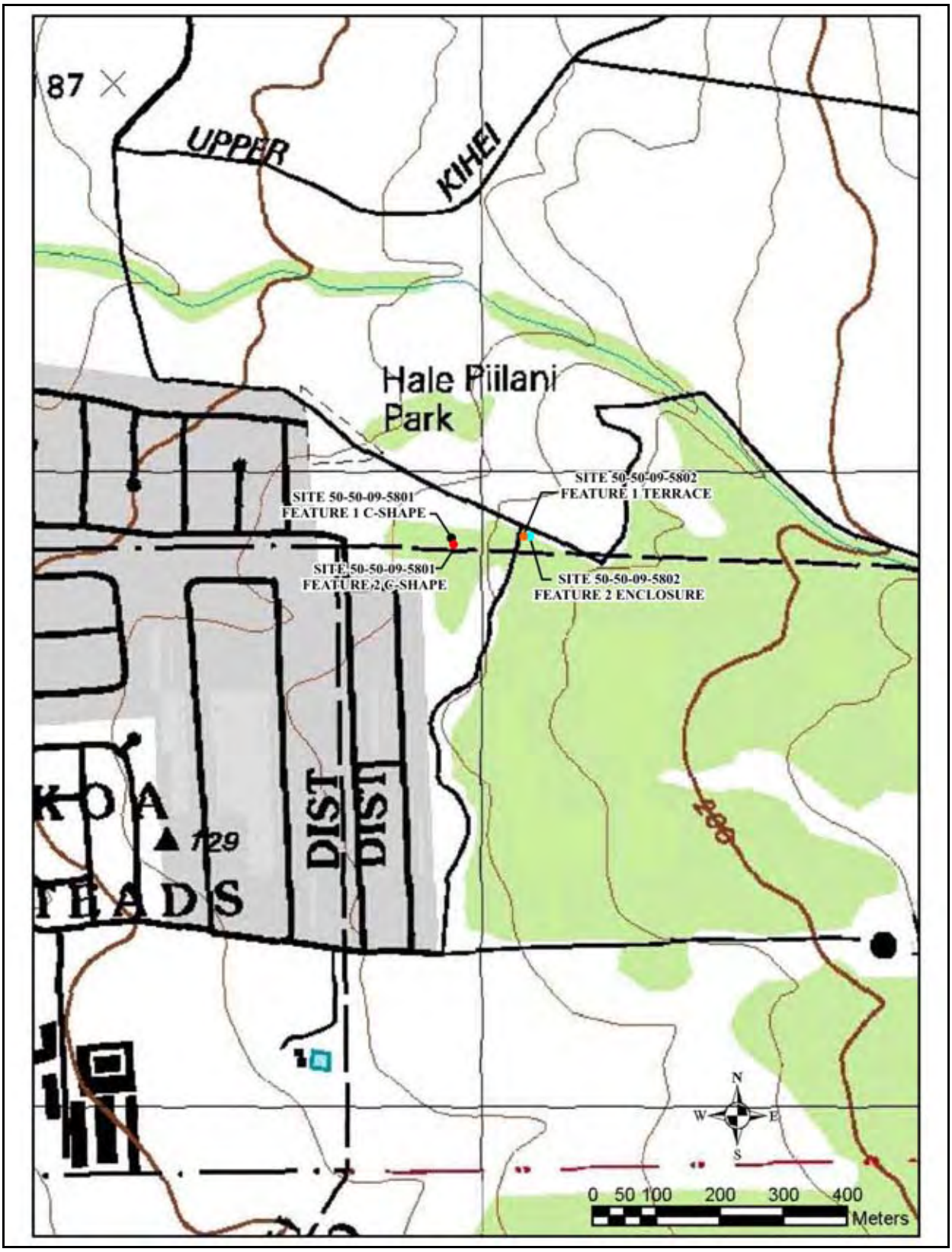

Figure 7: Topographic Map Showing Locations of Previously Non-Recorded Archaeological Sites.

Site -5801 was covered with heavy decomposing grass. Two test units (TU-1 and 2) were strategically placed within the confines of Site -5801 to evaluate the presence/ absence of associated cultural deposits and aid in feature function interpretations.

FEATURE 1

Feature 1 is a C-shaped structure that measured approximately 4.5 m by 3.5 m and was oriented on a southwest/ northeast axis at 230º/ 50º (true). The feature was constructed using dry-laid, sub-rounded rocks stacked two (maximum) courses high with small basalt *a`a* boulders (Figures 8 and 9). The highest point of the feature's architecture from the ground surface measured no more than 45 centimeters (cm). Portions of the feature's northeast corner had collapsed due to gravity and weathering. The feature's C-shaped opening faced north and toward the opening of the Feature 2 C-Shape. Excluding a modern aluminum soda can, no cultural materials suggesting a relative date of the feature was observed on or surrounding the feature. One test unit (TU-1) was placed against the interior of the feature's northwest corner to assess feature construction methods and locate subsurface archaeological deposits.

Figure 8: Photograph of Site 50-50-09-5801, Feature 1 C-Shape Pre-excavation. View to East.

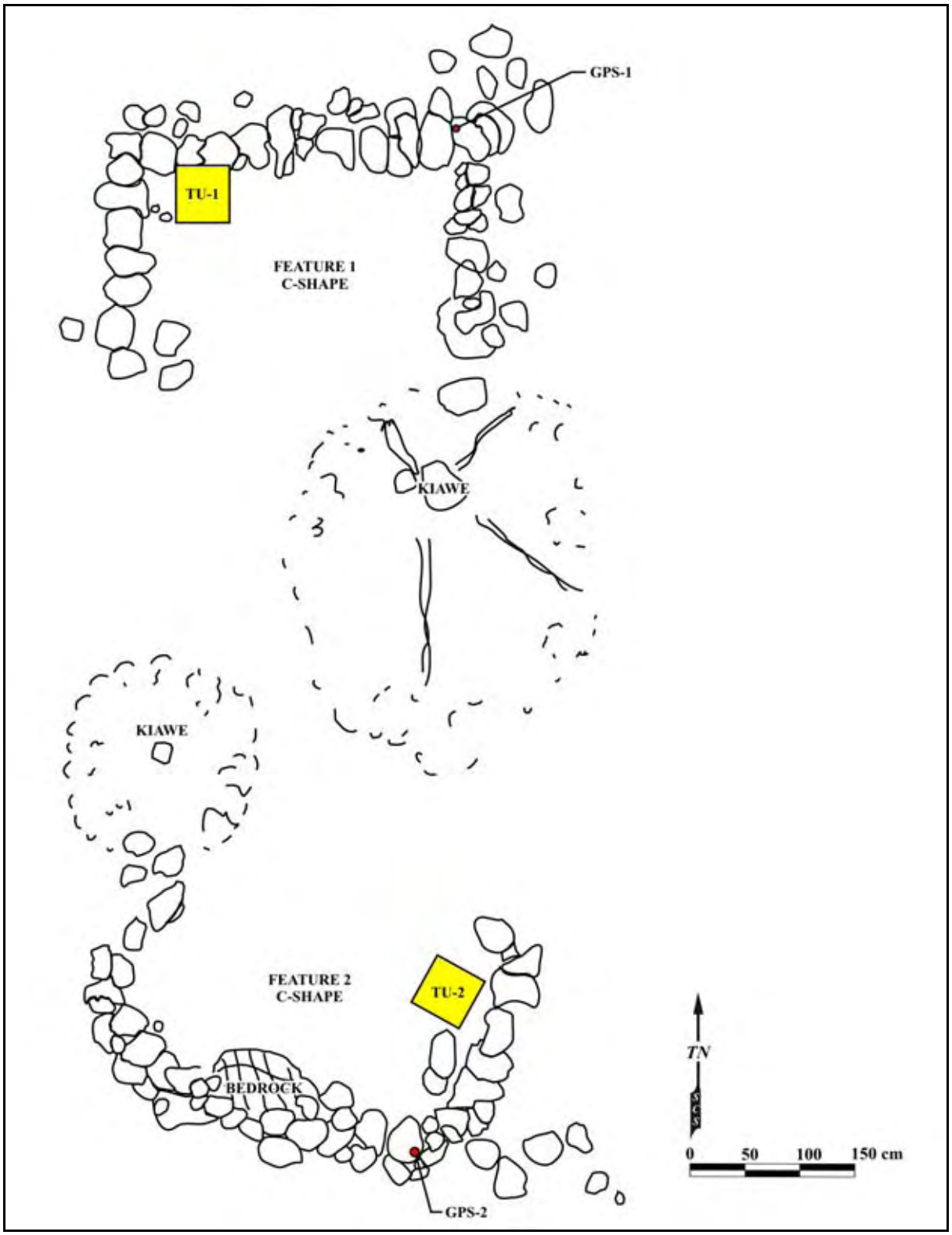

Figure 9: Site -5801, Features 1 and 2 C-Shapes Plan View Drawing Showing TU-1 and TU-2 Location.

Test Unit 1 (TU-1)

The excavation of TU-1 comprised an excavation area of 0.5 m by 0.5 m and revealed that the feature was readily constructed on a single soil layer (Layer I; Figures 10 and 11). Layer I/ level 1 (0–10 cmbs) was a compact, very fine granular structured, dark brown (7.5YR 3/4, dry) silt with vegetative roots (< 2 mm diameter). No cultural materials or carbon samples were covered and excavation terminated upon an arbitrary level change within the arbitrary soil level. Layer I/ level 2 (10–20 cmbs) was identical to the soil type and color to that of Layer I/ level 1 although with an added component of sub-rounded basalt pebbles that were less than 5 cm in diameter. This basalt pebble component composed approximately 5–10 percent of the Layer I/ level 2 matrix. Following a dearth of cultural material in Layer I/ level 2, excavation was terminated. No carbon samples were present. Observations of TU-1's Northwest wall stratigraphic profile suggest the feature's architecture was constructed on a single soil layer. Based on the results of excavation, its topographic location, and construction methods, the feature was interpreted as a temporary defensive position for the United States military training.

Figure 10: Photograph of Site -5801, Feature 1 C-Shape, TU-1 Post-excavation Northwest Wall Stratigraphic Profile. View to Northwest.

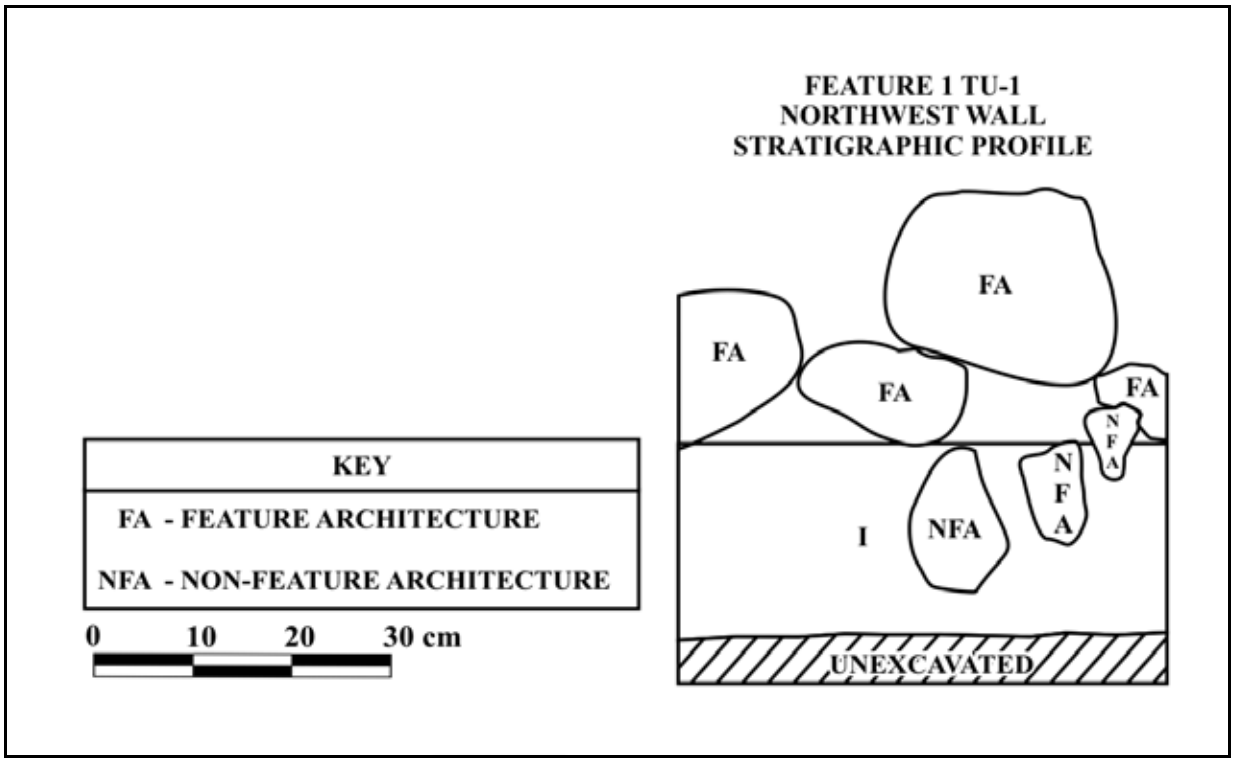

Figure 11: Site -5801, Feature 1 C-Shape, TU-1 Post-excavation Northwest Wall Stratigraphic Profile Drawing.

FEATURE 2

Feature 2 was a C-shape structure located approximately 5.5 m southeast of the Feature 1 C-shape (see Figures 9; and Figure 12) The topography on which the Feature 2 C-shape was situated mirrored that of the Feature 1 C-shape. The C-shaped structure's long axis was oriented east/ west at 86º/ 266º (true) with measurements approximated at 4.0 m long by 3.0 m wide. The feature was constructed using dry-laid, sub-rounded, small *a`a* boulders and cobbles. The Feature 2 C-shape architecture showed stepped construction (*i.e.*, 2 rocks side by side for the base of the feature architecture underlain by a single course of rock placed above the middle of the two base rocks). Piling of two-courses high existed on the feature's southern perimeter with single coursing on the feature's collapsed eastern and western tailings. The feature's C-shaped opening faced toward the southeast and toward the opening of the Feature 1 C-Shape. Heights of the feature's basalt rock structure ranged to no more than 50 cm above ground surface. Prior to excavation, the feature's interior surface displayed decomposing grass. No cultural materials were observed on or near the surface of the feature's confines. One test unit (TU-2) was placed against the northeast perimeter of Feature 2 C-shape to assess feature construction methods and locate subsurface archaeological deposits.

Figure 12: Photograph of Site -5801, Feature 2 C-Shape Pre-excavation. View to East.

Test Unit 2 (TU-2)

The excavation of TU-2 comprised an excavation area of 0.5 m by 0.5 m and revealed that the feature was hastily constructed on a single soil layer (Figures 13 and 14). Layer I/ level 1 (0–10 cmbs) was a compact, very fine granular structured, dark brown (7.5YR 3/4, dry) silt with vegetative roots (< 2 mm diameter). No cultural materials or carbon samples were recovered and excavation terminated upon an arbitrary level change within the single soil layer. Layer I/ level 2 (10–20 cmbs) was identical to the soil type and color to that of Layer I/ level 1 although with an added component of few, sub-rounded basalt cobbles that were approximately 12 cm in diameter. Following a dearth of cultural material in Layer I/ level 2, excavation was terminated. No cultural material was recovered from either arbitrary soil level. No carbon samples were present. Based on TU-2's east wall stratigraphic profile, the feature's architecture did not intrude into the soil. As excavation suggested in the Feature 1 C-Shape, the Feature 2 C-Shape was also interpreted as a temporary defensive position for the United States military.

Figure 13: Photograph of Site -5801, Feature 2 C-Shape, TU-2 Post-excavation East Wall Stratigraphic Profile. View to East.

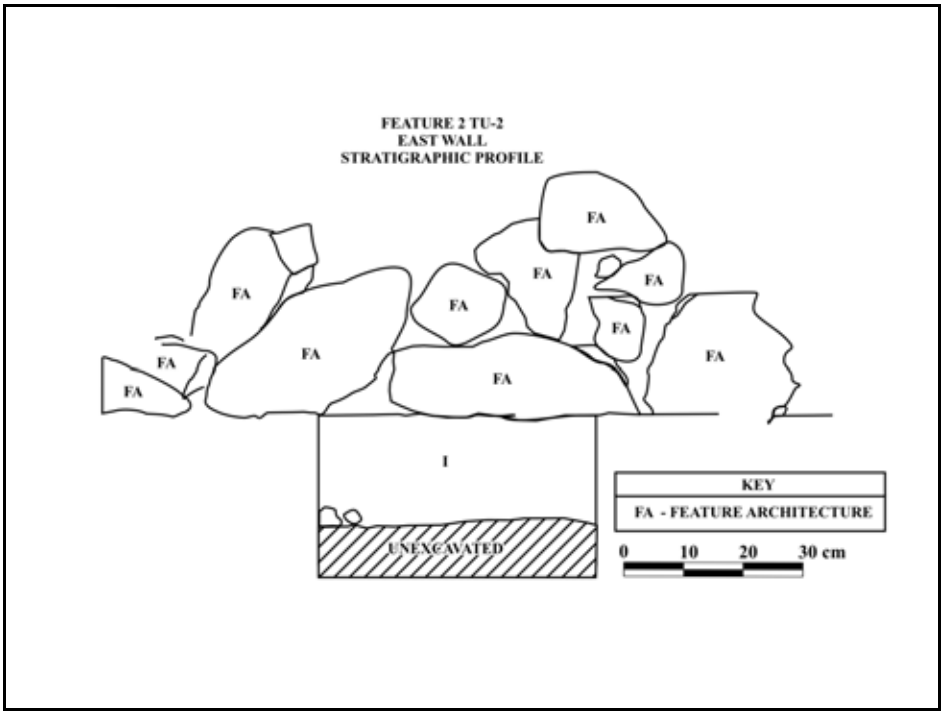

Figure 14: Site -5801, Feature 2 C-Shape, TU-2 Post-excavation East Wall Stratigraphic Profile Drawing.

SITE 50-50-09-5802 TRADITIONAL SITE

Site -5802 was the second archaeological site identified within the project area. The site encompassed an approximate area of 45.0 m² and consisted of two structural features labeled Features 1 and 2. The site was located on a mild (≈ 2 degree) southeast to northwest-trending slope near the project area's northern boundary (see Figure 7). Moreover, Site -5801 was located approximately 113.1 m at 264 degrees (true north) southwest of Site -5802 (Figure 15). Site -5802 is comprised of a terrace and an enclosure. The ground surface of Site -5802 was covered with heavy decomposing grass. Two test units (TU-1 and 2) were strategically placed within the features of Site -5802 to evaluate the presence/ absence of associated cultural deposits and aid in feature function interpretations.

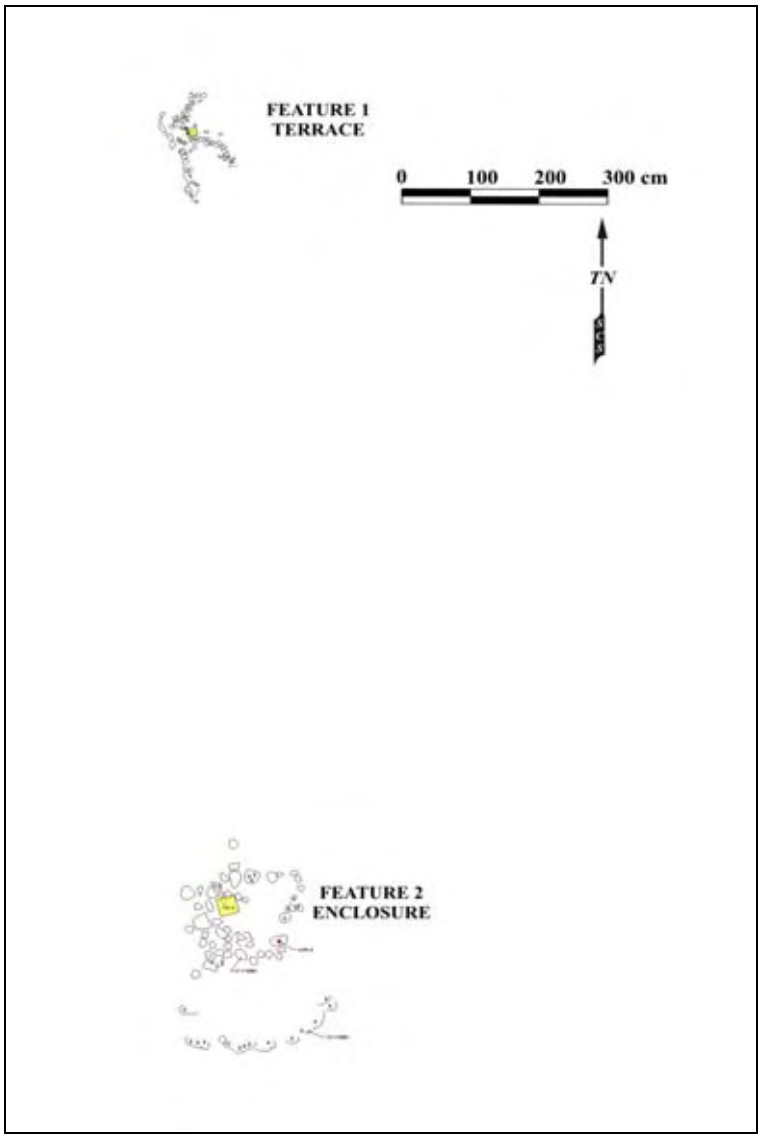

Figure 15: Site -5802, Feature 1 Terrace and Feature 2 Enclosure Plan View Drawing.

FEATURE 1

Feature 1 is a terrace measuring 7.0 m long by 4.5 m wide and was oriented in an east-west axis at 106º/ 286º (true) and paralleled the direction of the mild slope on which the site was situated (Figures 16 and 17). The feature was constructed employing dry-laid, sub-rounded, piled 2 course high (maximum), small *a`a* basalt boulders and cobbles. The piling of two courses high along the east half of the terrace with the west half comprising of a single course alignment and utilizing basalt outcrops.

Figure 16: Photograph of Site 50-50-09-5802, Feature 1 Terrace Pre-excavation. View to West.

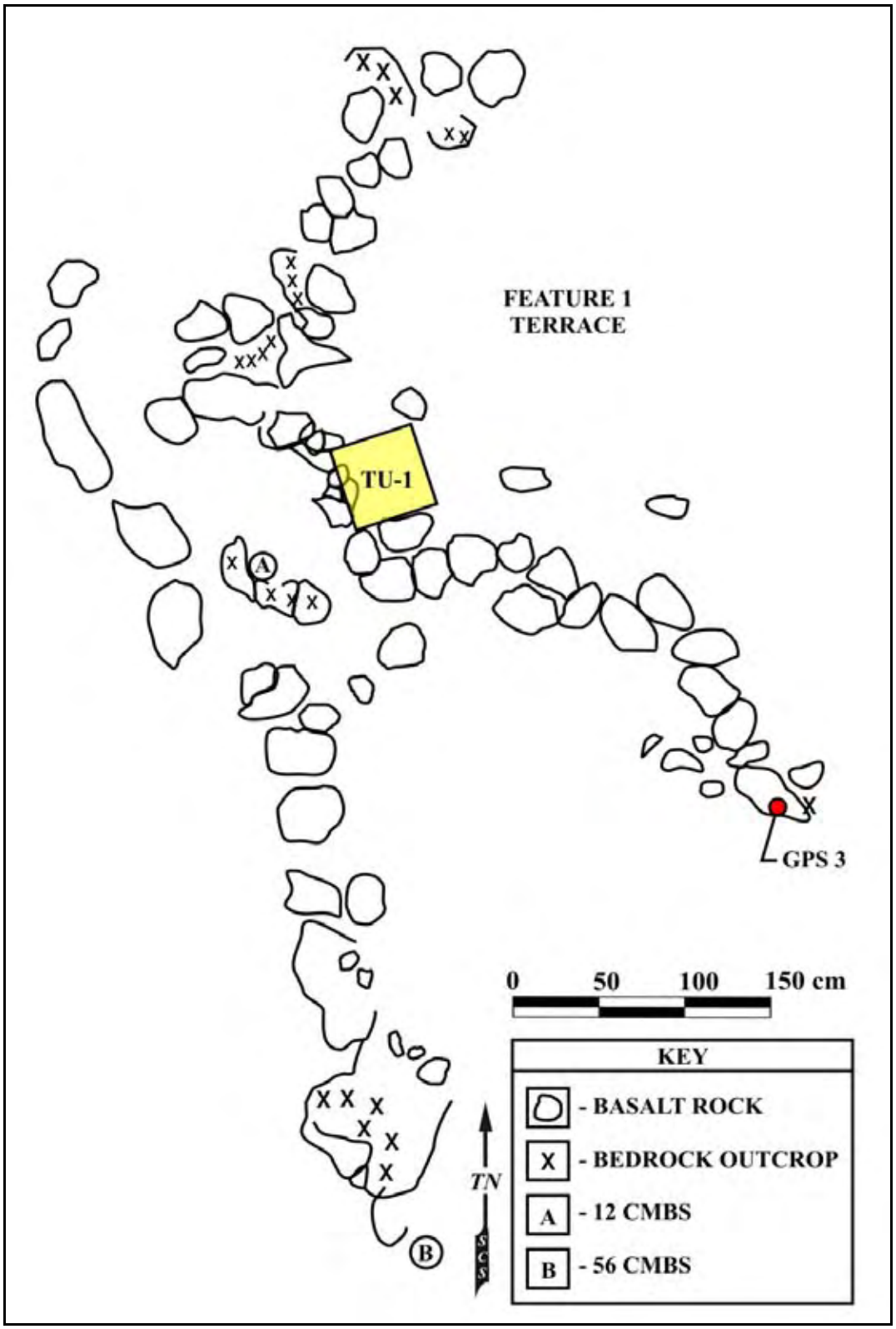

Figure 17: Site -5802, Feature 1 Terrace Plan View Drawing Showing TU-1 Location.

The feature's highest point above ground surface was 40 cm. Dense decomposing grass covered the feature and post-vegetation removal failed to locate surface cultural material on or surrounding the feature. One test unit (TU-1) was placed against the architecture of the feature's interior to assess feature construction methods and locate subsurface archaeological deposits.

Test Unit 1 (TU-1)

The excavation of TU-1 comprised an excavation area of 0.5 m by 0.5 m and revealed that the feature was constructed on a single soil layer (Figures 18 and 19). Layer I/ level 1 (0–8 cmbs) was a compact, very fine granular structured, dark brown (7.5YR 3/4, dry), silt with vegetative roots (< 2 mm diameter). No cultural materials were recovered and excavation terminated upon an arbitrary level change within the soil. Layer I/ level 2 (8–18 cmbs) was the same matrix as Layer I/ level 1 with an added cultural component of marine invertebrates (i.e., *Cypraea* sp.). Layer I/ level 2 was terminated upon an arbitrary level change within the soil. Layer I/ level 3 (18–24 cmbs) contained the same type of matrix as Layer I/ level 2 also with a cultural component of marine invertebrate material (*i.e., Cypraea* sp.). Unfortunately, no botanical specimens were observed associated with the marine invertebrate material or at anytime during the excavation. TU-1 excavation was terminated as the excavation area became too confined to further excavate. Observations of TU-1's North Wall suggest the Feature 1 Terrace was constructed during the formation of Layer I/ level 2 that also contained basalt outcrop. Based on the results of excavation, its topographic location, and construction methods of the Feature 1 Terrace, the feature was interpreted as a traditional Hawaiian structure.

FEATURE 2

Feature 2 was a square-shaped enclosure that measured 3.25 m long by 3.25 m wide and was oriented on an east-west axis at 101º/ 281º (true). The feature was constructed employing dry-laid, sub-rounded, piled *a`a* basalt boulders and cobbles (Figures 20 and 21). Piling of two courses high existed at the feature's northeast perimeter the feature's highest point above ground surface being 40 cm. Dense decomposing grass covered the feature and post-vegetation removal failed to locate surface cultural material on or surrounding the feature. One test unit (TU-2) was placed against the interior of the feature's northeastern perimeter to assess its construction methods and locate subsurface archaeological deposits.

Test Unit 2 (TU-2)

The excavation of TU-2 comprised an excavation area of 0.5 m by 0.5 m and suggested the feature was constructed within a single soil layer (Figures 22 and 23). Layer I/ level 1 (0–10 cmbs) was a compact, very fine granular structured, dark brown (7.5YR 3/4, dry) silt with vegetative roots (≈ 2 mm diameter). A few pieces of marine invertebrates (*i.e., Cypraea* sp.)

Figure 18: Photograph of Site -5802, Feature 1 Terrace, TU-1 Post-excavation West Wall Stratigraphic Profile. View to West.

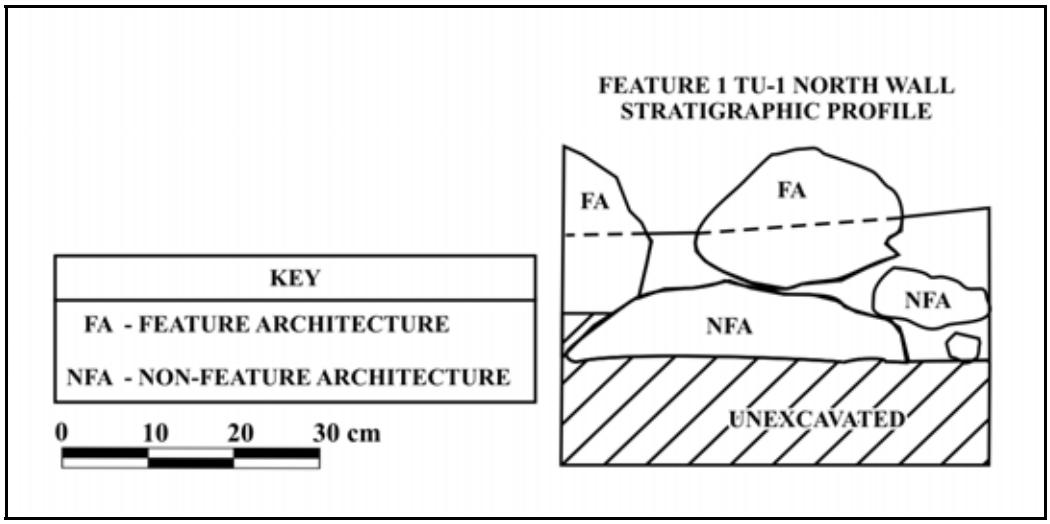

Figure 19: Site -5802, Feature 1 Terrace, TU-1 Post-excavation West Wall Stratigraphic Profile Drawing.

Figure 20: Photograph of Site -5802, Feature 2 Enclosure Pre-excavation. View to Southeast.

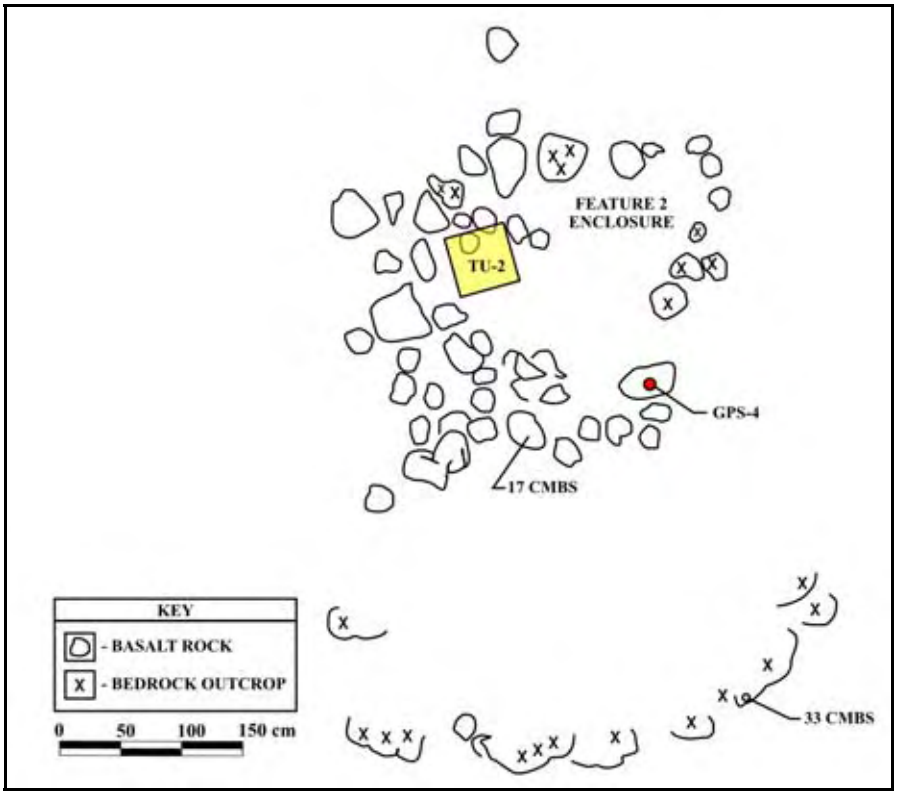

Figure 21: Site -5802, Feature 2 Enclosure Plan View Drawing Showing TU-2 Location.

Figure 22: Photograph of Site -5802, Feature 2 Enclosure, TU-2 Post-excavation East Wall Stratigraphic Profile. View to East.

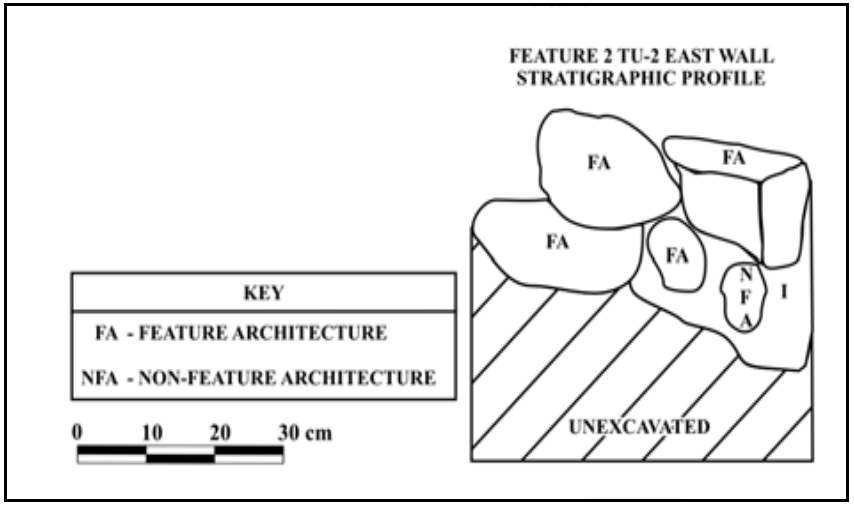

Figure 23: Site -5802, Feature 2 Enclosure, TU-2 Post-excavation East Wall Stratigraphic Profile Drawing.

were recovered. Layer I/ level 1 was terminated upon an arbitrary level change within the soil layer. Layer I/ level 2 (10–20 cmbs) was excavated in TU-2's south half as the excavation area became more confined due to basalt outcrops protruding south from TU-2's north half. Layer I/ level 2 was the same matrix as Layer I/ level 1 with an added lithic debitage component of two basalt flakes in addition to the marine invertebrate material (*i.e., Cypraea* sp.). Layer I/ level 2 was terminated upon an arbitrary level change within the soil layer. Layer I/ level 3 (20–30 cmbs) was the same type of matrix and Layers I/ levels 1 and 2 although only a single piece of marine invertebrate material (*i.e., Cypraea* sp.) was recovered. TU-2 excavation was terminated due to the shrinking excavation area. Observations of the TU-2 east wall stratigraphic profile suggests the feature was constructed during the formation of Layer I/ level 2. At no time during the excavation were botanical specimens observed. Based on the results of excavation, its topographic location, and construction methods of the Feature 1 Terrace, the feature was interpreted as a traditional Hawaiian structure.

DISCUSSION AND CONCLUSION

Two archaeological sites containing four structural features were identified on a 9.289-acre parcel in North Kihei [TMK: (2) 3-8-004:028]. State Site No. 50-50-09-5801 is interpreted as having been constructed and utilized during the 1940s when the United States Marine Corps' 4th Marine Division used the area for mock amphibious training assaults. State Site No. 50-50-09-5802 is interpreted as having been constructed and utilized during pre-Contact times. The interpretation of both sites is based on topographic locations, excavation results, and construction methods.

The topographic location of Site 50-50-09-5801 on a relatively level area; suggesting its utilization occurred during times when constant rainfall was not expected to occur. Had constant rainfall occurred, the structural features of the site may have been subjected to ponding, an action that would not have been favorable to individuals occupying/utilizing the feature. No cultural debris relating to the utilization of the feature during the suspected time period (*i.e.*, 1940s) was observed on the site's surface or during subsurface testing. Neither subsurface testing nor feature construction methods suggest that traditional prehistoric occupation had occurred. Although traditional settlement patterns suggest that temporary or seasonal habitations would exist with associated dry-land agriculture, the absence of such agricultural features within the confines of the site aids to support the notion that this site was not constructed or utilized during prehistoric times. The features could have served as temporary rest areas but again, subsurface testing relayed no supportive information. In terms of how features related to each other in terms

of space within the site, the open direction of the rectangular C-shaped Feature 1 suggested association with the rectangular C-shaped Feature 2. This was not only reminiscent of traditional type prehistoric habitation structures but also for military defensive positions where communicability and visual requirements are essential in a combat environment.

Altogether, Site -5801 was constructed utilizing available, portable, resources in the area. The structural complexity of the features within Site -5801 was non-existent and they were constructed expediently on a single soil layer based on stratigraphic profiles in both test units placed against the features' architecture. Negative results in locating associated subsurface cultural deposits gained from excavation within the features, combined with feature morphology and the absence of agricultural sites suggest United States Marines created these features during training exercises.

Site -5802 is unlike the military Site -5801 in many aspects. First, although both sites are constructed of small *a`a* boulders and basalt cobbles, Site -5802 integrates the natural basalt outcrops. Second, the topographic location of Site -5802 was better situated as one of its features (*i.e.,* the Feature 1 Terrace) allowed the collection of water to occur and drain if an excess was present. Located on a mild (≈ 2 degree) southeast to northwest slope, Features 1 (terrace) and 2 (enclosure; located downslope of Feature 1) were positioned most likely for dry-land agricultural purposes such as research has shown in the barren zone of the southwestern Kula District (see Gosser *et al.* 1993).

Further supporting Site -5802 as being a traditional Hawaiian site is the fact that only traditional-based subsistence material (*i.e.,* the marine invertebrates) was recovered in both test units within the site supplemented by basalt debitage found in the excavation of the Feature 2 enclosure. The stratigraphic profiles of both test units in Site -5802 revealed that the structures were constructed sometime during the formation Layer I/ level 2 (*i.e.,* 18–20 cm below the current soil surface). Marine invertebrate material was recovered from below the feature architecture and that the presence of the marine invertebrates at near the termination of excavation suggests the features were subjected to a fairly decent amount of soil deposition (*i.e.,* a minimum of 8 cm for the Feature 1 Terrace). Marine invertebrate material, nonetheless, was recovered from all arbitrary levels of TU-2 with a lithic component found in Layer I/ level 2. The presence of cultural material within Layer I/ level 1 suggests that the Feature 2 enclosure perimeters had prevented mass accumulation of soil washed from upslope where the terrace was situated. One possibility of the absence of botanical (*i.e.,* charred and non-charred) material in TU-1 located in the Feature 1 Terrace could be that such materials were subjected to the high acidity of the soil. Various other explanations exist though. Another possibility may be that

botanical materials were never introduced to the feature although the topographic location of the Feature 1 Terrace suggests that the feature's function was intended for agricultural pursuits. Based on information gleaned from its topographic location, excavation results (*i.e.*, the marine invertebrates collected), and the construction methods, Site -5802 was interpreted as a traditional Hawaiian site.

SIGNIFICANCE ASSESSMENTS AND RECOMMENDATIONS

The two archaeological sites identified on TMK (2) 3-8-004:028 have been interpreted as a WWII military site (Site 50-50-09-5801) and a traditional Hawaiian site (Site 50-50-09-5802). Both interpretations were based on topographic locations, excavation results, and construction methods. As such, Site -5801 is interpreted to have been a result of WWII and its evaluation is significant under Criteria D, listed under 36 Code of Federal Regulations (CFR) 60.4: specifically that these structures have yielded information important in prehistory and history of Hawai`i. Site -5802 is evaluated as being significant under Criterion D in that the site has yielded information important to the prehistory and history of Hawai`i. However, both sites lack integrity and are not particularly exemplary enough of the time or place in question to warrant *in situ* preservation. The survey data collected and documented over the course of the current project is considered sufficient to mitigate potential adverse impacts. No further archaeological investigations are recommended on the subject parcel.

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APPENDIX A: GLOBAL POSITIONING SYSTEM LOCI FOR STATE SITES 50-50-09-5801 AND -5802

State Site Number	SCS Temporary Site Number	Number of Features	Form/ Shape	Function	TMK	GPS Coordinates (UTM; NAD83)	Subject to Criterion	Archaeological Work Conducted
50-50-09-5801	T-1	2	Feature 1: Rectangular C-Shape	Feature 1: Military Defensive Position	(Maui) 3-8-04:028	0765939 2299903 (5 m Accuracy)	D; have yielded	Mapping, Description, Excavation
			Feature 2: Rectangular C-Shape	Feature 2: Military Defensive Position	(Maui) 3-8-04:028	0765943 2299894 (7 m Accuracy)	D; have yielded	Mapping, Description, Excavation
50-50-09-5802	T-2	2	Feature 1: Linear	Feature 1: Terrace	(Maui) 3-8-04:028	0766062 2299906 (8 m Accuracy)	D; have yielded	Mapping, Description, Excavation
			Feature 2: Semi-circular C-Shape	Feature 1: Traditional Habitation	(Maui) 3-8-04:028	0766052 2299906 (6 m Accuracy)	D; have yielded	Mapping, Description, Excavation

APPENDIX B: MIDDEN ANALYSIS

SCS PROJECT 634 KAIWAIHINE SUBDIVISION MIDDEN INVENTORY STATE SITE 50-50-09-5802								
Field Bag	**Feature**	**Unit**	**Layer**	**Depth**	**Collected Material**	**Measurements**	**Count**	**Remarks**
1	2	TU-2	I/1	0–10 cmbs	Invertebrates	1.3 g	-	*Cypraea* sp.
2	2	TU-2	I/2	10–20 cmbs	Invertebrates	10.4 g	-	*Cypraea* sp.
2	2	TU-2	I/2	10–20 cmbs	Basalt Debitage	-	2	One primary flake; 1 non-diagnostic flake
3	2	TU-2	I/3	20–30 cmbs	Invertebrates	0.3 g	-	*Cypraea* sp.
4	1	TU-1	I/2	8–18 cmbs	Invertebrates	0.6 g	-	*Cypraea* sp.
5	1	TU-1	I/3	18–24 cmbs	Invertebrates	0.2 g	-	*Cypraea* sp.

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APPENDIX C

PRELIMINARY ENGINEERING REPORT

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PRELIMINARY ENGINEERING REPORT

FOR

KAIWAHINE VILLAGE
Kihei, Maui, Hawaii

T.M.K.: (2) 3-8-004: 028

Prepared for:

John Sindoni
Royal Main Properties, LLC
3163 Hoomua Drive
Kihei, Hawaii 96753

STACY A. OTOMO
LICENSED PROFESSIONAL ENGINEER
No. 5115-C
HAWAII, U.S.A.

Prepared by:

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July 2010

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3.2 DRAINAGE

3.3 SEWER

3.4 WATER

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PRELIMINARY ENGINEERING REPORT
FOR
KAIWAHINE VILLAGE
T.M.K.: (2) 3-8-004: 028

1.0 INTRODUCTION

The purpose of this report is to provide information on the existing infrastructure which will be servicing the proposed project. It will also evaluate the adequacy of the existing infrastructure and anticipated improvements which may be required for the proposed project.

The subject parcel is identified as T.M.K.: (2) 3-8-004: 028. It is also Lot 134-A of the Hale Piilani Subdivision, which encompasses an area of 9.289 acres.

The project site is bordered by agricultural lands to the north and east, vacant undeveloped land and the Ohukai Subdivision to the south, and the Hale Piilani Subdivision to the west. The development plan includes 15 multi-family buildings creating 120 units. Associated improvements include grading, paved roadways, concrete curbs, gutters and sidewalks; water system, drainage system, sewer system and landscaping.

2.0 EXISTING INFRASTRUCTURE

2.1 ROADWAYS

Mokulele Highway is the primary roadway linking Central Maui and South Maui. It is a four-lane highway with a north-south orientation which is owned and maintained by the State.

Piilani Highway is the primary roadway linking Kihei, Wailea and Makena to other areas on Maui. Piilani Highway is a four-lane highway undivided highway with a north-south orientation, which is also owned and maintained by the State.

South Kihei Road is a two-lane roadway which parallels Piilani Highway along the coastline and serves most of the commercial and residential communities.

Kaiwahine Street, located to the west of the subject property, is an east-west collector road which connects Piilani Highway and the western boundary of the subject property. Ohukai Road is another County-owned east-west roadway which connects South Kihei Road to Piilani Highway and other residential and commercial properties to the east of Piilani Highway. Hale Kai Street is a two-lane, north-south roadway which connects Kaiwahine Street and Ohukai Road.

Access to the project site will be through the extension of Kaiwahine Street and Hale Kai Street. There are existing traffic signals at both the Kaiwahine

Street and Ohukai Road intersections with Piilani Highway.

2.2 DRAINAGE

The project site is presently undeveloped. The existing ground slopes from 142 feet above mean sea level at the eastern tip of the parcel to 98 feet above mean sea level at the western boundary, averaging approximately 2.9%

According to the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972)," prepared by the United States Department of Agriculture Soil Conservation Service, the soil within the project site is classified as Waiakoa extremely stony silty clay loam (WID2). Waiakoa extremely stony silty clay loam is characterized as having medium runoff and a severe erosion hazard.

According to Panel Number 150003 0580E of the Flood Insurance Rate Map, September 25, 2009, prepared by the United States Federal Emergency Management Agency, the subject parcel is situated in Flood Zone X. Flood Zone X represents areas outside the 0.2% annual chance floodplain.

It is estimated that the existing 50-year storm runoff from the project site is 6.13 cfs. There are no drainage facilities on the parcel. Presently, onsite runoff sheet flows in an east to west direction toward the Hale Piilani Subdivision-Phase II. The drainage system for the Hale Piilani Subdivision traverses along Kaiwahine Street, across Piilani Highway, along Uwapo Road, and outlets at the rock pier near the former Suda Store.

2.3 SEWER

There are existing sewerlines along Kaiwahine Street with sewer manholes in the subject property. An 8-inch sewerline is located along Kaiwahine Street which transports wastewater to South Kihei Road. Wastewater from North Kihei is transported to a sewer pump station located in Kalama Park. Wastewater collected from the Kihei area is transported to the Kihei Wastewater Treatment Plant located above Piilani Highway and south of the Elleair Golf Course.

2.4 WATER

The 36-inch Central Maui transmission line runs within the property along the western boundary. A 2.0 million gallon concrete water tank to east of the project site provides storage for the area at an elevation of 220 feet. The source for the water system is the Mokuhau wells located in Happy Valley.

Domestic water and fire flow for the proposed project will be provided by the County’s water system. There are existing 8" waterlines on Kaiwahine Street and Hale Kai Street.

2.5 ELECTRIC, TELEPHONE AND CABLE TV

There are existing underground electrical, telephone and cable TV distribution systems in the Hale Piilani Subdivision and existing overhead electrical, telephone and cable TV distribution systems within the Ohukai Subdivision.

3.0 ANTICIPATED INFRASTRUCTURE IMPROVEMENTS

3.1 ROADWAYS

Access to the subject project will be from the extension of Kaiwahine Street and Hale Kai Street. The roadway within the project, which will be the extension of Kaiwahine Street, will consist of a 56-feet right-of-way, 24 feet to 36 feet of pavement, concrete curbs, gutters and sidewalks. Five driveways will be created to access the parking areas from the proposed roadway.

The July 15, 2010 traffic impact assessment prepared by Phillip Rowell and Associates concluded the following:

- Project generated traffic represents approximately 4.2% to 7.3% of peak hour traffic growth. The remaining growth is the result of background traffic growth and traffic generated by other development projects.
- Project generated traffic will represent 2.0% or less of the total approach volume at the study intersections between 2010 and 2015.
- The intersection of Piilani Highway at Ohukai Street will operate at Level-of-Service D during both the morning and afternoon peak hour, without and with project generated traffic.
- At the intersection of Piilani Highway and Kaiwahine Street & Uwapo Road, all lane groups, as well as the overall intersection, will operate at Level-of-Service C, during both peak hours, without and with project generated traffic.
- The intersection of Piilani Highway at North Kihei Road will operated at Level-of-Service C during both peak periods, without and with project generated traffic.

3.2 DRAINAGE

After the development of the proposed project, it is estimated that the 50-year storm runoff will be 17.28 cfs, a net increase of 11.15 cfs over existing conditions. An onsite drainage system consisting of curb and grated inlet catch basins, drain manholes, drainlines, and perforated drainlines will be constructed as part of the project improvements.

Runoff captured by the catch basins will be conveyed to an underground

perforated drainage system and/or an onsite detention basin. It is anticipated that the perforated drainage system will be located along the rear boundary of the lots and along the western boundary of the site.

The drainage system will be sized to accommodate the increase in runoff generated by the development for a 50-year, 1-hour storm. The drainage design criteria will also be to minimize any alterations to the natural pattern of the existing onsite surface runoff. This is in accordance with the County's drainage standards.

3.3 SEWER

The proposed 120 units will generate approximately 76,500 gallons of wastewater per day. The onsite sewerage collection system will be designed to accommodate this flow. The existing collection and transmission systems, pumping facilities and treatment plant have the capacity to handle the anticipated wastewater generated by the subdivision.

The onsite sewer system shall consist of a gravity flow system which will connect to the existing 8-inch sewerline along Kaiwahine Street.

According to the Wastewater Reclamation Division, County of Maui, the subject subdivision is located within the Kihei Assessment Area 3. At the present time, the County is assessing sewer fees of $1,743.00 per multi-family unit for the collection system upgrade and $1,185.75 per multi-family unit for the treatment plant facility expansion.

3.4 WATER

Water for the subdivision will be provided from the County water system. Based on the March 25, 2010 letter from Jeffrey Eng, Director, Department of Water Supply, the owners will work with the Department to determine the off-site improvements required to properly service this project. The water system improvements will be designed and constructed in accordance with DWS standards and requirements. It will also be dedicated to the Department of Water Supply upon completion and approval by the department.

In accordance with the Department of Water Supply's Domestic Consumption Guidelines for a multi-family residential development, the average daily demand for the 120 units is approximately 67,200 gallons per day. Fire flow demand for the residential district is 2,000 gallons per minute for a 2-hour duration. Fire hydrants will be installed with a maximum spacing of 250 feet.

3.5 ELECTRIC, TELEPHONE AND CABLE TV

The project will connect to the existing overhead utilities along Hale Kai Street and the underground utilities along Kaiwahine Street. The onsite electrical, telephone and cable TV distribution systems in the subject project will be installed underground. Street lights will be installed along the proposed Kaiwahine Street extension at intervals to be determined by the electrical engineer.

REFERENCES

A. 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.

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

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

D. Flood Insurance Rate Maps of the County of Maui, September 2009.

E. Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui, prepared by the Department of Public Works and Waste Management, County of Maui, 1995.

F. Water System Standards, Department of Water Supply, County of Maui, 2002.

G. Traffic Impact Analysis Report for Kaiwahine , prepared by Phillip Rowell, 2010.

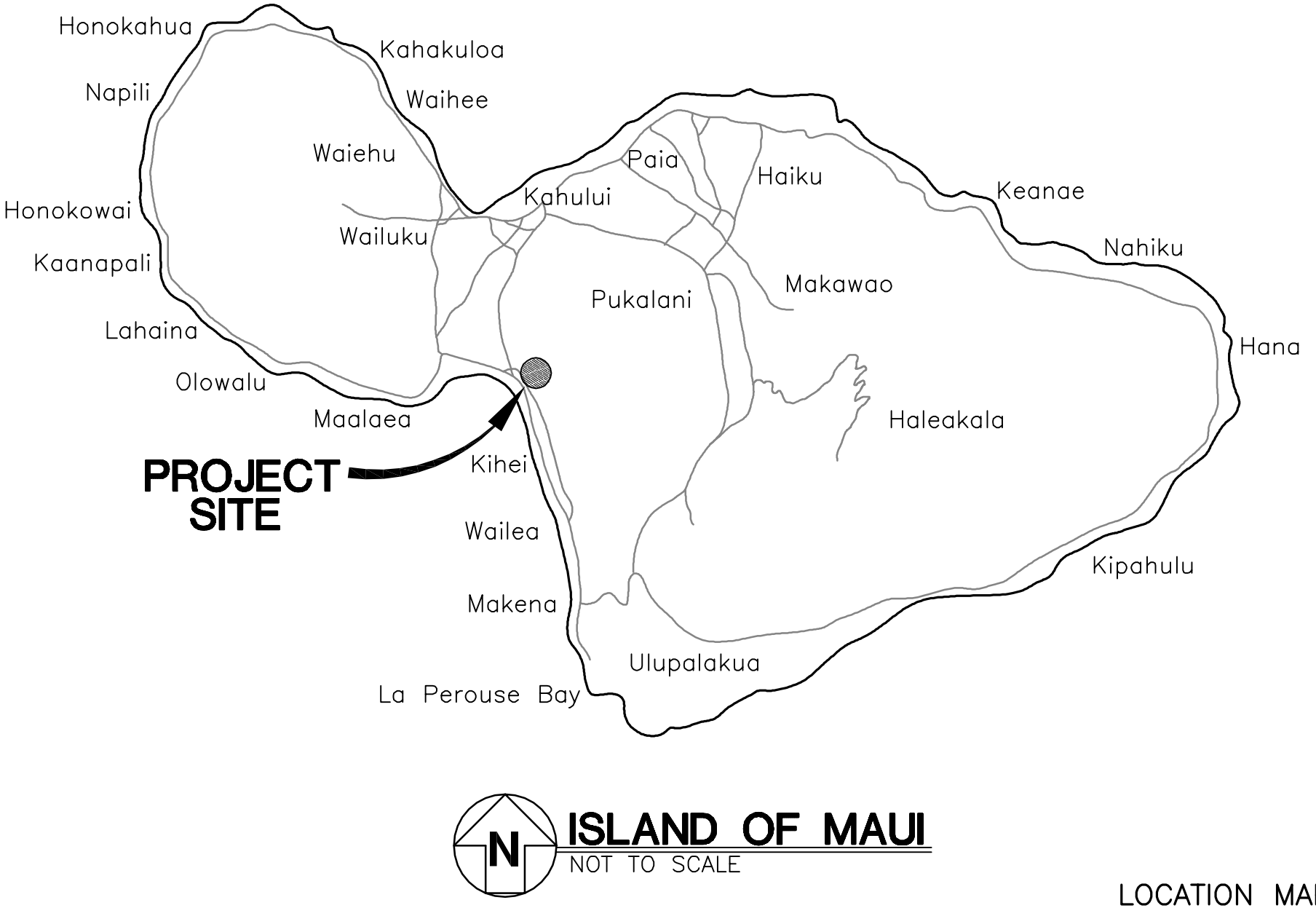
EXHIBITS

1 Location Map

2 Vicinity Map

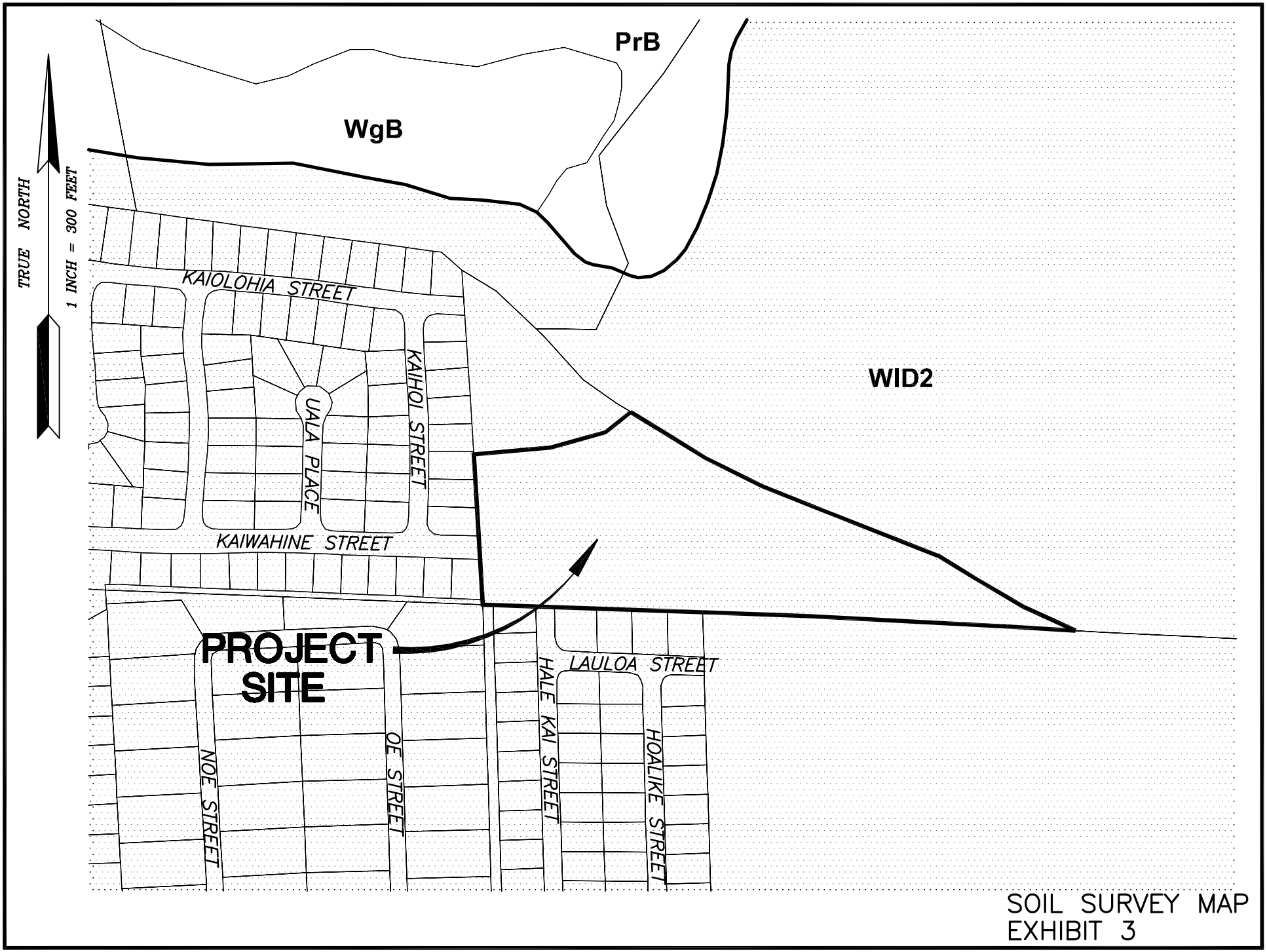
3 Soil Survey Map

4 Flood Insurance Rate Map

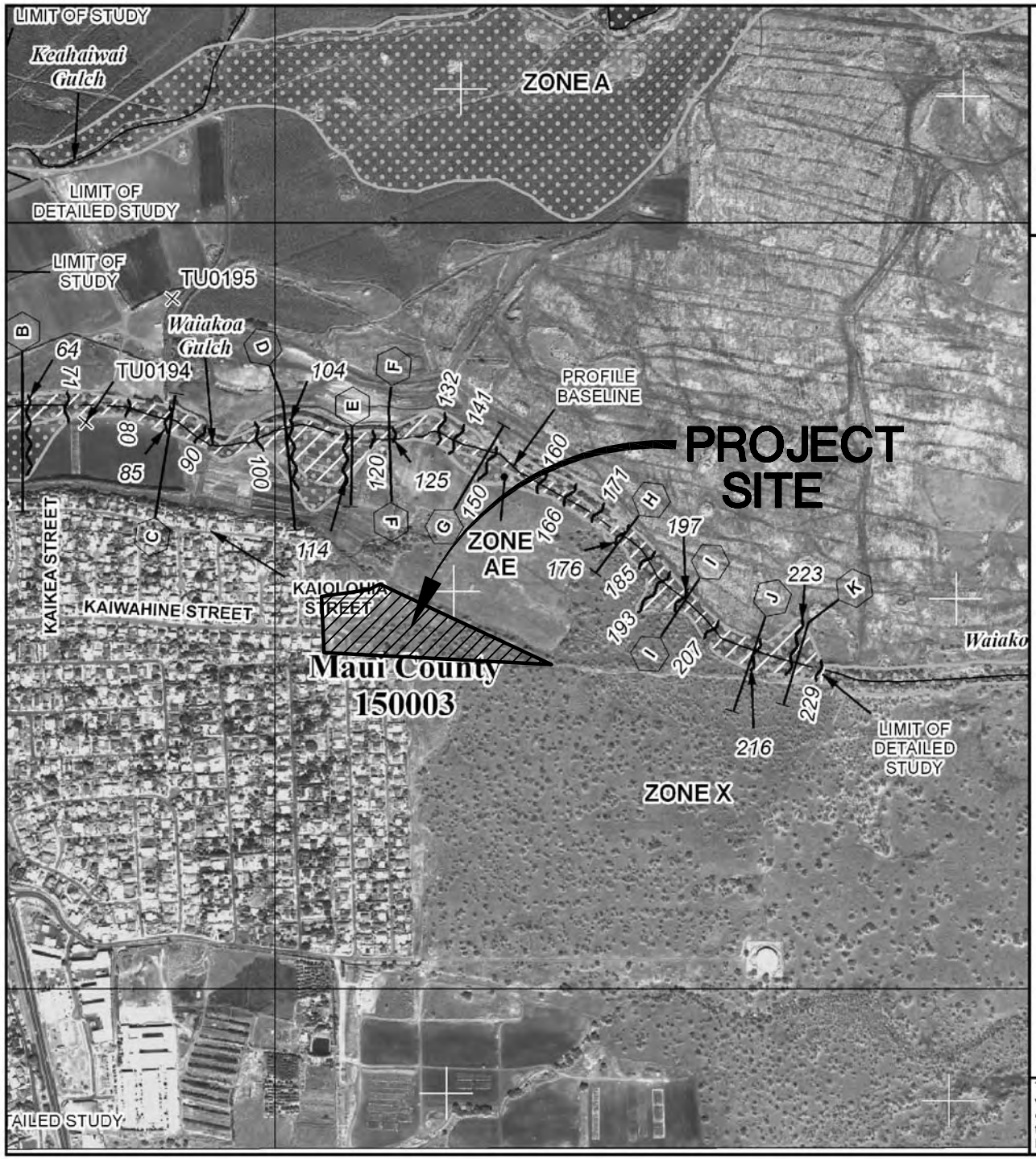


LOCATION MAP
EXHIBIT 1

VICINITY MAP
EXHIBIT 2



SOIL SURVEY MAP
EXHIBIT 3



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METE

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0580E

FIRM

FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

PANEL 580 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MAUI COUNTY	150003	0580	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 1500030580E

MAP REVISED SEPTEMBER 25, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPENDIX A
HYDROLOGIC CALCULATIONS

HYDROLOGIC CALCULATIONS

Purpose: Determine the increase in surface runoff from the development of the proposed project based on a 50-year storm.

A. Determine the Runoff Coefficient (C):

PAVED AREAS:

Infiltration (Negligible)	=	0.20
Relief (Flat)	=	0.00
Vegetal Cover (None)	=	0.07
Development Type (Pavement)	=	0.55
C	=	0.82

ROOF AREAS:

Infiltration (Negligible)	=	0.20
Relief (Steep)	=	0.08
Vegetal Cover (None)	=	0.07
Development Type (Roof)	=	0.55
C	=	0.90

EXISTING/LANDSCAPE CONDITION:

Infiltration (Medium)	=	0.07
Relief (Flat)	=	0.00
Vegetal Cover (High)	=	0.00
Development Type (Open)	=	0.15
C	=	0.22

EXISTING CONDITION:

Open Area = 9.29 Acres
C = 0.22

DEVELOPED CONDITIONS:

Paved Area = 2.36 Acres
Roof Area = 2.38 acres
Landscape Area = 4.55
WEIGHTED C = 0.55

B. Determine the 50-year 1-hour rainfall:

i_{50} = 2.2 inches

Adjust for time of concentration to compute Rainfall Intensity (I):

Existing Condition:

T_c = 30 minutes

I = 3.00 inches/hour

Developed Condition:

T_c = 23 minutes

I = 3.38 inches/hour

C. Drainage Area (A) = 9.29 Acres

D. Compute the 50-year storm runoff volume (Q):

Q = CIA

Existing Conditions:

Q = (0.22)(3.00)(9.29)

= 6.13 cfs

Developed Conditions:

Q = (0.55)(3.38)(9.29)

= 17.28 cfs

The increase in runoff due to the proposed development is 17.28 - 6.13 = 11.15 cfs.

Hydrograph Plot

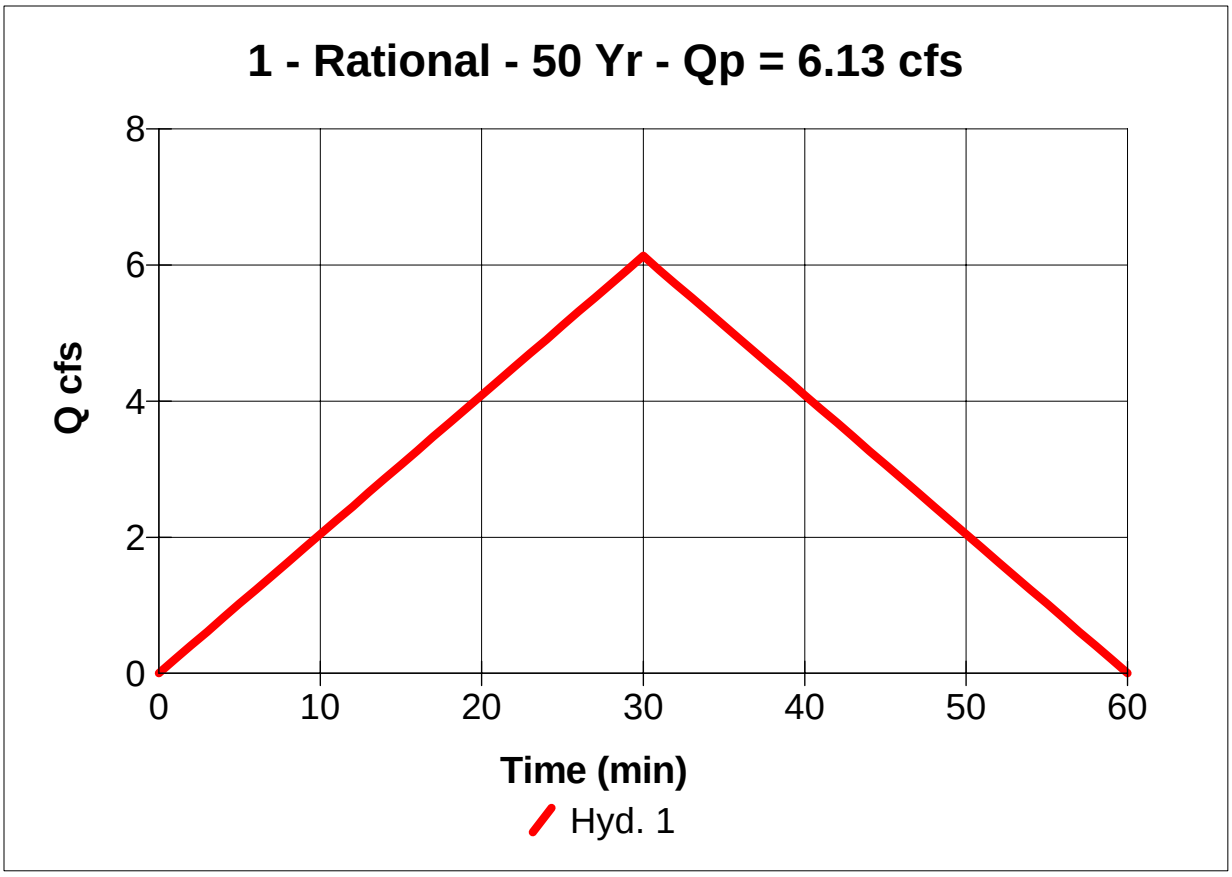
English

Hyd. No. 1

PRE

Hydrograph type	= Rational	Peak discharge	= 6.13 cfs
Storm frequency	= 50 yrs	Time interval	= 1 min
Drainage area	= 9.3 ac	Runoff coeff.	= 0.22
Intensity	= 3.00 in	Time of conc. (Tc)	= 30 min
I-D-F Curve	= 2-2.IDF	Reced. limb factor	= 1

Total Volume = 11,037 cuft



Hydrograph Plot

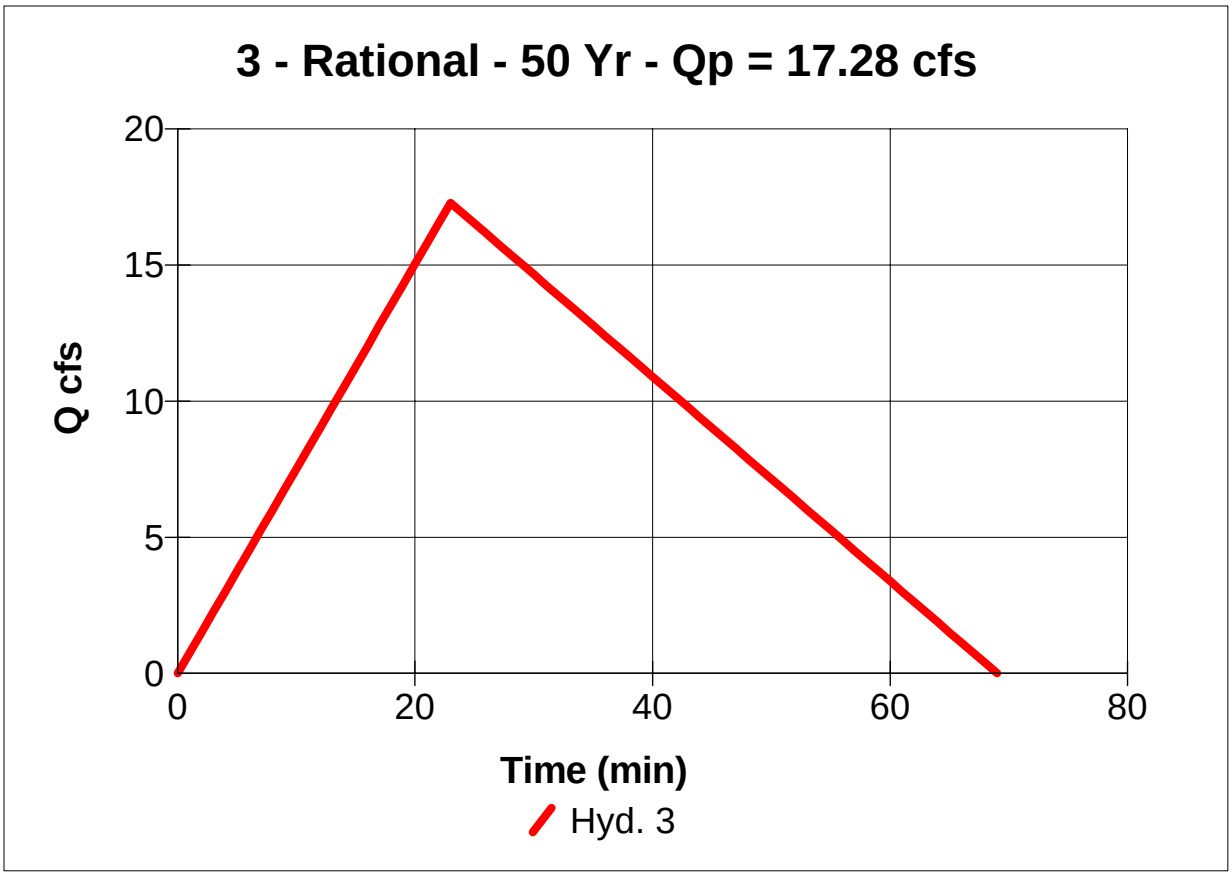
English

Hyd. No. 3

POST

Hydrograph type	= Rational	Peak discharge	= 17.28 cfs
Storm frequency	= 50 yrs	Time interval	= 1 min
Drainage area	= 9.3 ac	Runoff coeff.	= 0.55
Intensity	= 3.38 in	Time of conc. (Tc)	= 23 min
I-D-F Curve	= 2-2.IDF	Reced. limb factor	= 2

Total Volume = 35,773 cuft



APPENDIX B
WATER DEMAND CALCULATIONS

WATER DEMAND CALCULATIONS

Project Data:

120 Multi-family units (9.289 acres)

Per 2002 Water System Standards:

Consumption Guidelines:

Multi-Family Residential = 560 gallons/unit or 5,000 gallons/acre

Average Daily Demand (ADD) =

Multi-Family Residential = 560 x 120 units = 67,200 gallons

or

= 5,000 x 9.289 acres = 45,445 gallons

ADD = 67,200 gpd

Max. Daily Demand (1.5 x ADD) = 1.5 x 67,200 = 100,800 gpd

Max. Fire Flow = 2,000 gpm (Multi-family)

APPENDIX C
WASTEWATER CALCULATIONS

WASTEWATER CALCULATIONS

Per the 2000 Wastewater Flow Standards:

Wastewater Contribution for the multi-family project = 255 gallons/day/unit
Occupancy = 2.5 persons unit

Contribution = (120 units) x (255 gallons/day /unit) x (2.5 persons/unit)
= 76,500 gallons per day

APPENDIX D

PART 50 AND 58 COMPLIANCE PROCEDURES

WITH HTF ENVIRONMENTAL PROVISIONS 24 CFR §93.301(F)(1)

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Environmental Provision and Resource	Yes/ No	Environmental Review Record
Historic Preservation Consultation with interested parties such as the State Historic Preservation Officers, federally recognized Indian tribes/Tribal Historic Preservation Officers (THPOs); and Native Hawaiian Organizations. AND If the project is NOT listed or eligible for listing in the National Register of Historic Places individually or as part of an historic district. http://www.nps.gov/nr/research/ OR If the project IS listed or eligible to be listed on the National Register of Historic Places, individually or as part of an historic district, and work DOES NOT include demolition and MEETS the Secretary of Interior's Standards for Rehabilitation – including the Standards related to new construction. https://www.nps.gov/tps/standards/four-treatments/treatment-rehabilitation.htm Archaeological Resources If archaeological resources or human remains are discovered on the project site during construction, consult with affected tribes and/or descendant communities and comply with the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001–3013), State law and/or local ordinance (e.g., State unmarked burial law).	YES	Document the consultation process. AND Document that the project is not listed or eligible to be listed on the National Register of Historic Places. OR Document how the work meets the Secretary of Interior's Standards for Rehabilitation. Document all consultation correspondence with the affected tribe and/or descendant communities, and how compliance with the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001–3013), State law and/or local ordinance (e.g., State unmarked burial law) has been met.
Farmlands The project will NOT convert unique, prime or significant (state or local) farmland to an urban use - http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	YES	A map from the Web Soil Survey showing that the project site is not a unique, prime or statewide or locally significant agricultural property.

Environmental Provision and Resource	Yes/ No	Environmental Review Record
Airport Zones The project is NOT located within a Runway Protection Zone (RPZ) of a civilian airport or the clear zone or Accident Potential Zone (APZ) of a military airfield. https://www.epa.gov/nepa/nepassist	YES	A map showing the site is not within 15,000 feet of a military airport or within 2,500 feet of a civilian airport. If within 15,000 feet of a military airport, a map showing the site is not within a designated APZ or a letter from the airport operator stating so. If within 2,500 feet of a civilian airport, a map showing the site is not within a designated RPZ or a letter from the airport operator stating so.
Floodplains The project is NOT located in the Floodway, Coastal High Hazard Area or 100-year or 500-year floodplain on the latest FEMA floodmap (including preliminary maps and Advisory Base Flood Elevations). https://msc.fema.gov/portal OR 100-year floodplain - If the project site is within the 100-year floodplain, an 8-step Process and required notifications are required. Any structure located within the 100-year floodplain WILL BE elevated to at least the BFE or floodproofed to one foot above the BFE. Elevated and floodproofed buildings must adhere to National Flood Insurance Program standards, and the project MUST NOT BE a Critical Action. OR Floodway – The project IS a functionally dependent use. OR Coastal High Hazard Area – The project IS reconstruction following destruction caused by a disaster and is designed for location in a coastal high hazard area consistent with the FEMA	YES	FEMA FIRM or other latest-available data from FEMA showing the project location is not within a floodplain. OR Document the 8-step Process and required notifications. Provide the FIRM or latest-available FEMA data and document that the structure will be elevated at least the BFE or floodproofed to one foot above the BFE, that elevated and floodproofed buildings adhere to National Flood Insurance Program standards, and that the project is a not a Critical Action. OR If the project site is within a Floodway, provide the FIRM or latest-available FEMA data and document that the structure is a functionally dependent use. OR If the project site is within a Coastal High Hazard Area, provide the FIRM or latest-available FEMA data and document that the structure is reconstruction following destruction caused by a disaster and is

Environmental Provision and Resource	Yes/ No	Environmental Review Record
National Flood Insurance Program requirements for V Zones OR 500-year floodplain – The project is NOT a Critical Action.		designed for location in a coastal high hazard area consistent with the FEMA National Flood Insurance Program requirements for V Zones, and that the structure is not a Critical Action. OR If the project site is within the 500-year floodplain provide the FIRM or latest-available FEMA data and document that the structure is not a Critical Action.
Wetlands The project will NOT adversely impact a wetland. The project will NOT drain, dredge, channelize, fill, dike, impound, or perform grading activities in wetlands. http://www.fws.gov/wetlands/Data/Mapper.html	YES	A map showing the project is not located in a jurisdictional or non-jurisdictional wetland.
Contamination The project is FREE of hazardous materials, contamination, toxic chemicals and gases, and radioactive substances, where a hazard could affect the health and safety of occupants or conflict with the intended use of the property. AND The project IS NOT located within 0.25 miles of a Superfund or CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) site or other contaminated site reported to Federal, State, or local authorities without a statement in writing from the U.S. Environmental Protection Agency (EPA) or the appropriate State agency that there is no hazard that could affect the health and safety of the occupants or conflict with the intended use of the property. Note: The CERCLIS Public Access Database has been retired. The EPA is	YES	Document that the project is free of hazardous materials, contamination, toxic chemicals and gases, and radioactive substances, where a hazard could affect the health and safety of occupants or conflict with the intended use of the property. Document that the project is not located within 0.25 miles of a Superfund or CERCLIS site or other contaminated site reported to Federal, State, or local authorities without a statement in writing from the EPA or the appropriate State agency that there is no hazard that could affect the health and safety of the occupants or conflict with the intended use of the property. Multifamily properties (4 or more units) - a Phase I ESA–ASTM is required. If the Phase I ESA identifies RECs, a Phase II ESA–ASTM will be required. If the Phase II indicates the presence of hazardous substances or petroleum products above applicable local, state, tribal or federal (LSTF) screening levels, coordination with the relevant LSTF oversight agency will be

Environmental Provision and Resource	Yes/ No	Environmental Review Record
transitioning to the Superfund Enterprise Management System, or SEMS. SEMS includes the same data fields and content as CERCLIS. https://www.hudexchange.info/environmental-review/site-contamination/		required to complete the remediation process and obtain a determination that no further action is required. Development of more than four single family structures in the same location, such as subdivision development, should be evaluated as multifamily Single family properties - projects must avoid sites located within 0.25 miles of a Superfund or CERCLIS site or other contaminated site reported to Federal, State, or local authorities without a statement in writing from the EPA or the appropriate State agency that there is no hazard that could affect the health and safety of the occupants or conflict with the intended use of the property. In addition to the government records search, the screening process for single family does include a site visit. When the screening process raises concerns related to site contamination, it may be appropriate to contract with an environmental professional for preparation of a Phase I, testing and sampling, or other investigation.
Noise External noise level is LESS THAN 65 dB. OR External noise level is between 65 dB and less than 75 dB. Mitigation measures result in an interior standard of 45 dB. OR External noise level is 75 dB or greater. There are NO noise sensitive outdoor uses (e.g., picnic areas, tot lots, balconies, or patios) and mitigation measures to the building shell achieve the 45 dB interior standard. https://www.hudexchange.info/programs/environmental-review/noise-abatement-and-control/	YES	Document the external noise level. OR Document the external noise level, and the mitigation measures taken to meet the interior noise level standard of no more than 45 dB. OR Document the exterior noise level, and the mitigation measures taken to meet the interior noise level standard of no more than 45 dB. Also document that there are no outside noise sensitive uses involved in the project.

Environmental Provision and Resource	Yes/ No	Environmental Review Record
Safe Drinking Water The project is CONSTRUCTED WITH lead-free pipes, solder, and flux. https://www.epa.gov/dwreginfo	YES	Document that the project only uses lead-free pipes, solder, and flux (architectural plans, building specifications, and certification by qualified professional).

If any of the answers to the worksheet above are "No" the project cannot be funded through the Housing Trust Fund. However, it is possible that the project can be funded using other HUD funds.[6]

[6] 93.301(f)(3) Acquisition projects environmental requirements. (i)(A) Existing housing that is acquired with HTF funds, and has been newly constructed or rehabilitated less than 12 months before the commitment of HTF funds must meet the property standards at paragraph (f)(1) of this section. (B) All other existing housing that is acquired with HTF assistance must meet the property standards requirements of paragraph (f)(2) of this section. (ii) If under paragraph (f)(3)(i)(A) or paragraph (B) of this section, the property does not meet these standards, with the exception of the noise standards in paragraph (f)(2) of this section, HTF funds cannot be used to acquire the property. (4) Manufactured housing environmental requirements. Manufactured housing is subject to the environmental standards in paragraph (f)(1) of this section for new construction or paragraph (f)(2) of this section for rehabilitation, as applicable. If an existing property does not meet these standards, HTF funds cannot be used to acquire the property unless it is rehabilitated to meet the standards in paragraph (f)(2), as applicable, with the exception of noise standards in paragraph (f)(2)(x).

LINDA LINGLE
GOVERNOR OF HAWAII

634

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
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KAPOLEI, HAWAII 96707

May 22, 2006

Dr. Michael Dega
Scientific Consultant Services, Inc.
711 Kapiolani Boulevard. Suite 975
Honolulu, Hawai'i 96813

LOG NO: 2006.1325
DOC NO: 0605MK04
Archaeology

Dear Dr. Dega:

SUBJECT: Chapter 6E-42 Historic Preservation Review –
Archaeological Inventory Survey of a 9.289 Acre Property in North Kihei
Pulehu Nui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:028

Thank you for the opportunity to review this report which our staff received on February 22, 2006 (Tome and Dega 2006, *An Archaeological Inventory Survey of a 9.289-Acre Property in North Kihei, Pulehu Nui Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK (2) 3-8-004:028]*...Scientific Consultant Services, Inc. ms).

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The historical information provided summarizes the history of the post-Contact period land uses. The summary of previous archaeological work in the area provides a baseline for the current work. The subject parcel has been partially modified by illegal dumping and modern ranching activities.

The survey has adequately covered the project area documenting two (2) historic properties. SIHP 50-50-09-5801 consists of a World War II related site and included two (2) crude C-shapes. Test excavations did not yield cultural materials. The second historic property, SIHP 50-50-09-5802, consists of a traditional Hawaiian agricultural site with small amounts of habitation related materials (invertebrates).

We concur that both sites are significant under Criterion "D" for their informational content. The sites have been acceptably documented, and the information potential has been exhausted. Potential adverse impacts have been mitigated. We agree that no further archaeological work is warranted on the subject parcel.

We find this report to be acceptable. The historic preservation review process is concluded. Development of the project areas will have "no effect" on significant historic sites. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall of the State Historic Preservation Division, Maui Section, at (808) 243-5169 as soon as possible to resolve these concerns.

Aloha,

Melanie Chinen, Administrator
State Historic Preservation Division

MK:kf

c: Bert Ratte, DPWEM, County of Maui
Michael Foley, Director, Dept. of Planning, 250 S. High Street, Wailuku, HI 96793

~~Draft~~Final Environmental Impact Statement

PROPOSED KIHEI RESIDENTIAL PROJECT

(TMK Nos. 3-8-004:002 (por.), 022 (por.), and 030 (por.))

Prepared for:

A&B Properties, Inc.

Accepting Authority:

State of Hawai`i,
Land Use Commission

~~September 2007~~May 2008

MUNEKIYO & HIRAGA, INC.

Cultural Impact Assessment for an Approximately 100-Acre Parcel Pūlehu Nui Ahupua'a, Wailuku District, Maui Island TMK: (2) 3-8-004:002 por., 022 por., and 030

Prepared for
A & B Properties, Inc.

Prepared by

Tanya L. Lee-Greig

and

Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai'i, Inc.

Wailuku, Hawai'i

(Job Code: PULE 2)

June 2006

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Management Summary

Reference	Cultural Impact Assessment for an Approximately 100-Acre Parcel Pūlehu Nui Ahupua'a, Wailuku District, Maui Island TMK: (2) 3-8-004:002 por., 022 por., and 030 (Lee-Greig and Hammatt 2006)
Date	May 2006 DRAFT
Project Number (s)	Cultural Surveys Hawai'i Inc. (CSH) Job Code: PULE 2
Project Location	North of Pi'ilani Highway and east of Mokulele Highway, Pūlehu Nui Ahupua'a, Wailuku District, Maui Island TMK: (2) 3-8-004:002 por., 022 por., and 030. This area is depicted on the 1998 Puu o Kali and Maalaea 7.5-minute USGS topographic quadrangles
Land Jurisdiction	Private: A & B Properties
Agencies	Hawaii State Department of Health: Office of Environmental Quality Control (OEQC)
Project Description	A & B Properties is contemplating the possibility of future land use applications that would allow residential expansion into the project area. At a minimum, this would include the grading, dwelling construction, and street and utility installation activity commonly associated with residential development.
Project Acreage	Approximately 93-Acres
Area of Potential Effect (APE)	The project APE included an approximate seven acre section of Waiakoa Gulch located outside and adjacent to the 93-acre project area. The entire approximate 100-acre APE was considered for this investigation.
Regulatory Context	The project may require compliance with the State of Hawai'i environmental review process [Hawai'i Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project's effect on traditional cultural practices. At the request of A & B Properties (A&B), CSH undertook this cultural impact assessment to provide information pertinent to the assessment of the proposed project's cultural impacts. This document is intended to support the project's state environmental review and provides documentation of the project's consultation efforts per the Office of Environmental Quality Control (OEQC) *Guidelines for Assessing Cultural Impacts*.
Consultation Effort	Hawaiian organizations, agencies and community members were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and the vicinity. The organizations consulted included the Office of Hawaiian Affairs (OHA), the Maui/Lana'i Island Burial Council, and Hui Malama I Nā Kūpuna O Hawai'i Nei. Tanya Lee-Greig M.A. conducted the consultation effort under the general supervision of Hallett H. Hammatt, Ph.D. (principal investigator).

Findings	While limited traditional Hawaiian habitation, agriculture, and riverine resource exploitation may have occurred within the project area, decades of continuous historic and modern agriculture and ranch activities both within the project area and upstream of the project area have heavily modified the stream flow and landscape and consequently left no evidence of traditional cultural practices within the project area. Based on the information gathered during this assessment, residential expansion into the lands comprising the project area will have minimal impact upon Native Hawaiian cultural resources within the immediate vicinity. It should be noted however, that there are both traditional cultural concerns as well as safety concerns regarding Waiakoa Gulch. Periodic flooding of the gulch was mentioned by Mrs. Kalanikau as a safety and drainage control concern. Additional concern was raised over the potential for increased run-off from the development into the gulch and the potential negative affect that any increased sedimentation and/or water run-off might have on the coastal and off-shore fishing grounds. The impacts of such run-off on the marine resources and fishing practices are unknown at the moment and may require further study or environmental monitoring. Moreover, while the history of land modification within the current project area following Western contact is well documented, the probability for subsurface cultural deposits and human burials within the project area should not be underestimated. If any significant cultural deposits or human skeletal remains are encountered, the State Historic Preservation Division (SHPD/DLNR) should be contacted in accordance with Section 6E-46.6 Hawaii Revised Statutes and Chapter 13-300.

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Section 1 Introduction

1.1 Project Background

At the request of Mr. Daniel Yasui of A&B Properties (A&B), Cultural Surveys Hawai'i, Inc. (CSH) conducted a cultural impact assessment of an approximate 100-acre area in Pūlehu Nui Ahupua'a, Wailuku District, Maui Island (TMK: [2] 3-8-004:002 por., 022 por., and 030). (Figure 1 and Figure 2) The project area is bound by corn and sugar cane fields to the north and east, Pi'ilani Highway to the west, and the Hale Pi'ilani Residential Subdivision to the south. A&B is contemplating the possibility of filing future land use applications that would allow residential expansion into the project area. At a minimum, residential expansion would include the grading, dwelling construction, and street and utility installation that is commonly associated with residential development. The project may require compliance with the State of Hawai'i environmental review process [Hawai'i Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project's effect on traditional cultural practices. CSH undertook this cultural impact assessment to provide pertinent information regarding any impacts that the proposed project may have on traditional cultural practices. This document is intended to fulfill the cultural impact assessment requirement for the State of Hawaii environmental review and provides documentation of the project's consultation efforts per the Office of Environmental Quality Control (OEQC) *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control 1997).

The area under consideration for future residential expansion consists of approximately 93-acres. However, the area of potential effect (APE) for the project under consideration includes an approximate seven acre section of Waiakoa Gulch located outside and adjacent to the 93-acre project area (Figure 3). The entire approximate 100-acre APE, hereafter referred to as the "project area", was considered and evaluated for potential impacts to traditional cultural practices.

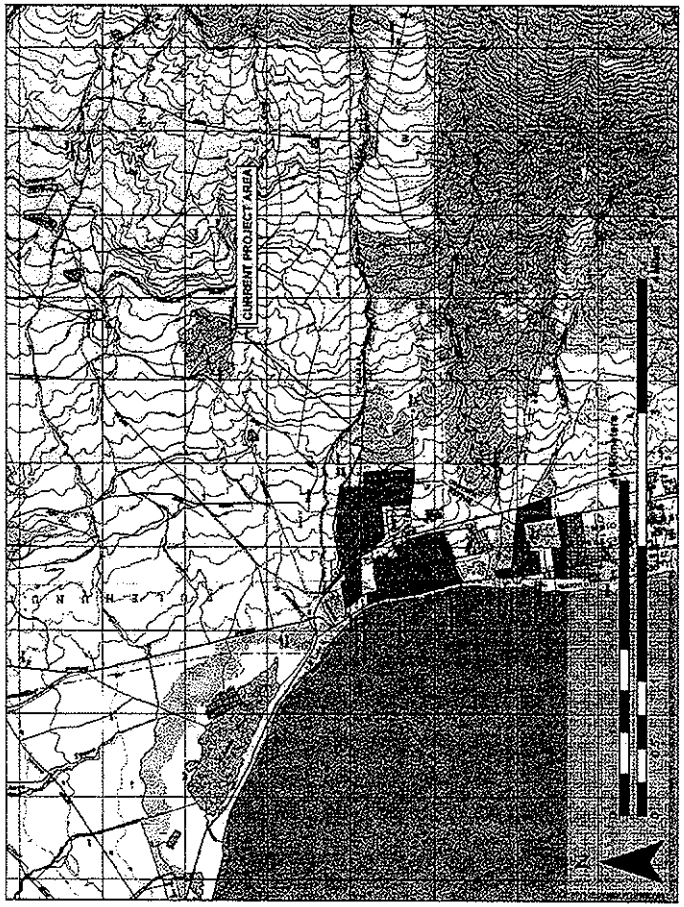


Figure 1. A portion of the 1998 Puu o Kali and Maalaea 7.5-minute USGS topographic quadrangles, project area in red

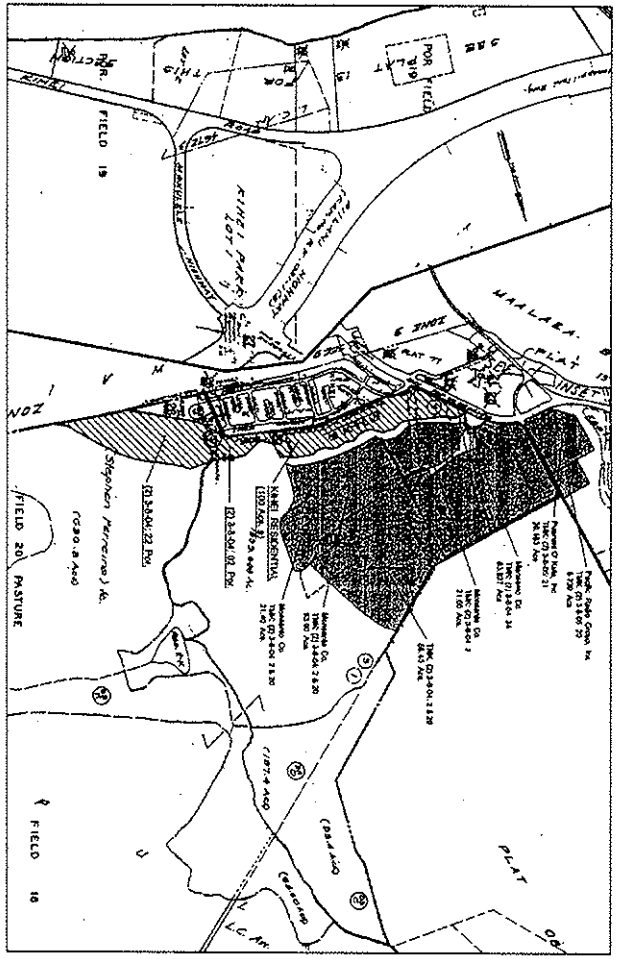


Figure 2. Portion of TMK (2) 3-8-004 showing project area in cross hatch (project area map courtesy of Mr. Daniel Yasui – A & B Properties)

1.2 Scope of Work

The following scope of work was adhered to for the preparation of this cultural impact assessment:

1. Examination of historical documents, Land Commission Awards, historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record.
2. A review of the existing archaeological information pertaining to the sites on the property as they may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices and beliefs associated with the parcel and identify present uses, if appropriate.
3. Conduct both formal and informal interviews with persons knowledgeable about the historic and traditional practices in the project area and region.
4. Preparation of the following report on items 1-3 summarizing the information gathered related to traditional practices and land use. This report will assess the impact of the proposed action on the cultural practices identified.

1.3 Environmental Setting

1.3.1 Natural Environment

The general soils within the project area are of the Waiakoa-Keahua-Molokai association. This soil association is found on low uplands and consists of deep to nearly level well-drained soils (Foote et al 1972:12). More specifically, the soils within the project area are of the Alae Series, Waiakoa Series, and Pūlehu Series (Figure 4).

The Alae Series consists of excessively drained soils on alluvial fans. Alae sandy loam (AaB), found in the northwestern corner of the project area, occurs on smooth alluvial fans where permeability is rapid, runoff is slow and the erosion hazard is slight (Foote et al. 26). At the time of the US Department of Agriculture (USDA) soil survey, AaB type soils were commonly used for sugarcane and pasture with small acreages used for truck crops.

The Waiakoa Soil Series consists of well drained, gently sloping to moderately steep soils located on the upland areas. The upper part of the Waiakoa Series is influenced by volcanic ash and developed from material weathered from basic igneous rock. Waiakoa very stony silty clay loam (WgB), found in the central portion of the project area, is generally smooth and found on low uplands. The permeability of WgB soil is moderate with slow runoff and a slight erosion hazard (Foote et al. 1972:126). Waikoa extremely stony silty clay loam (WID2), found along the southern boundary and eastern most portion of the project area, is like WgB soils except that it is eroded and stones cover three to 15 percent of the surface. Runoff of WID2 soils is medium and the erosion hazard is severe (Foote et al. 1972:127). At the time of the USDA soil survey, WgB soils were commonly used for sugarcane, pasture, and wildlife habitat and WID2 soil was used for pasture and wildlife habitat.

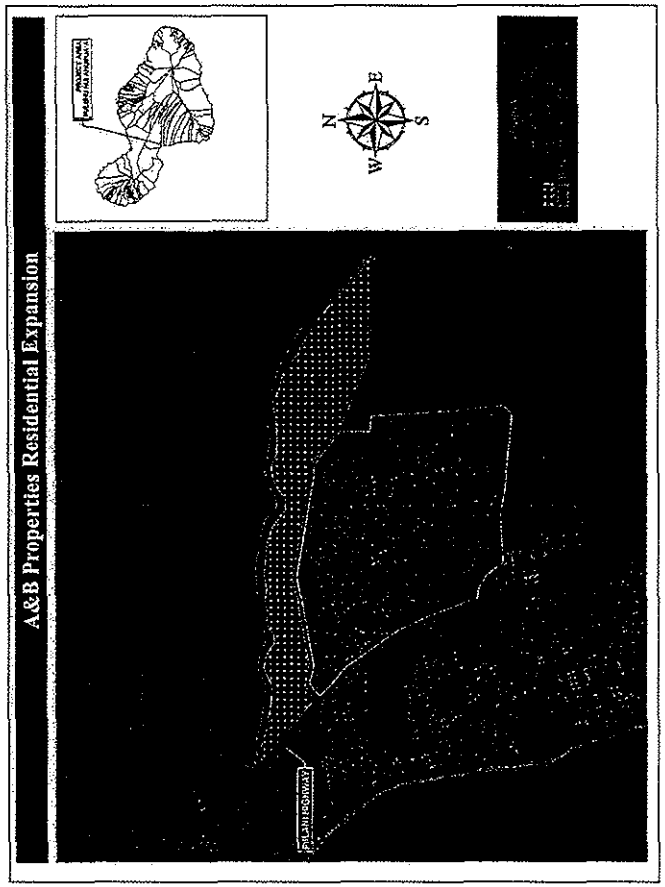


Figure 3. Aerial photograph depicting project APE (photo courtesy of Mr. Daniel Yasui – A & B Properties

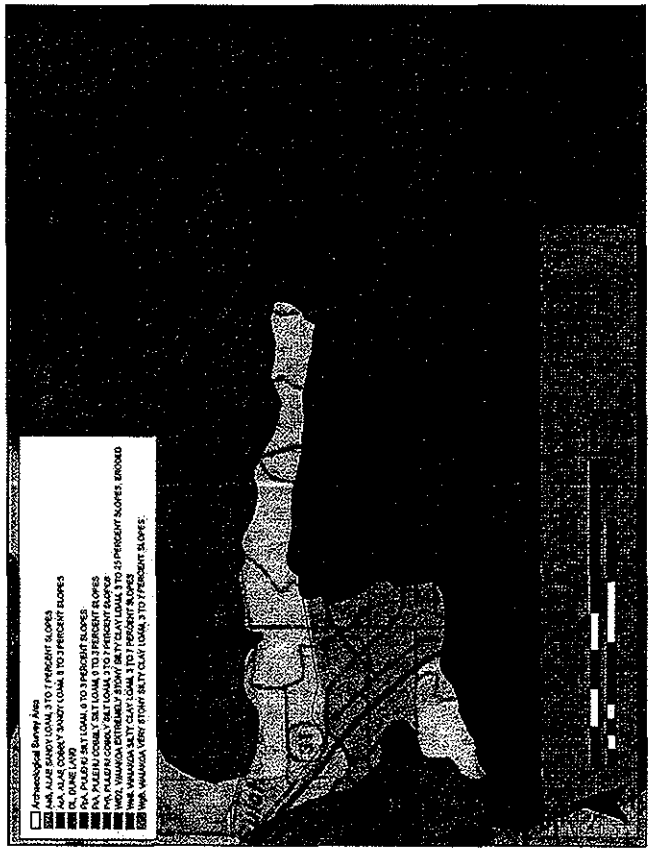


Figure 4. A portion of the 1998 Puu o Kali and Maalaea 7.5-minute USGS topographic quadrangles, showing the project area relative to the local soil series (U.S. Department of Agriculture, Natural Resources Conservation Service 2001)

The Pūlehu Soil Series consists of well-drained soils on alluvial fans, stream terraces, and basins and are developed in alluvium washed from basic igneous rock (Foote et al 1997: 115). Pūlehu cobbly silt loam (PrB), found along the northern boundary of the project area, is similar to Pūlehu clay loam (PsA) where run off is slow with a slight erosion hazard. The available water capacity is approximately 1.4 inches per foot in the surface layer and subsoil. The only difference between PrB soils and PsA soil is that the texture is silt loam and the surface layer is cobbly. (Foote et al. 1972:116). At the time of the USDA soil survey, PrB soil was used for sugarcane with small acreages used for pasture

Rainfall accumulation within 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 and Schroeder 1998). This pattern of rainfall and low annual precipitation rate once sustained a lowland, dry shrubland and grassland native ecosystem (Pratt and Gon III 1998). The landscape of the project area, however, has been heavily modified by historic sugar cultivation, as well as, modern corn and truck crop cultivation (Figure 5, Figure 6, and Figure 7). The vegetation along the sides of Waiakoa Gulch currently consists of moderately dense *kiawe* (*Prosopis pallida*) and *koa haole* (*Leucaena leucocephala*) with knee to waist high grasses in the gulch bottom. Thin stands of *kiawe* and *koa haole* trees, knee to waist-high buffelgrass (*Cenchrus ciliaris*) and other alien grass species, interspersed with sparse occurrences of *'ilima* (*Sida fallax)* and *'uhaloa* (*Waltheria indica*), could be found throughout the un-cultivated eastern portion of the project area.

1.3.2 Built Environment

The built environment within the project area consisted of farm sheds and a single post and pier structure in the truck farms section. The surrounding vicinity consisted of the Hale Pi'ilani residential subdivision to the south and the four-lane Pi'ilani Highway and Waiakoa Bridge to the west (see Figure 3).

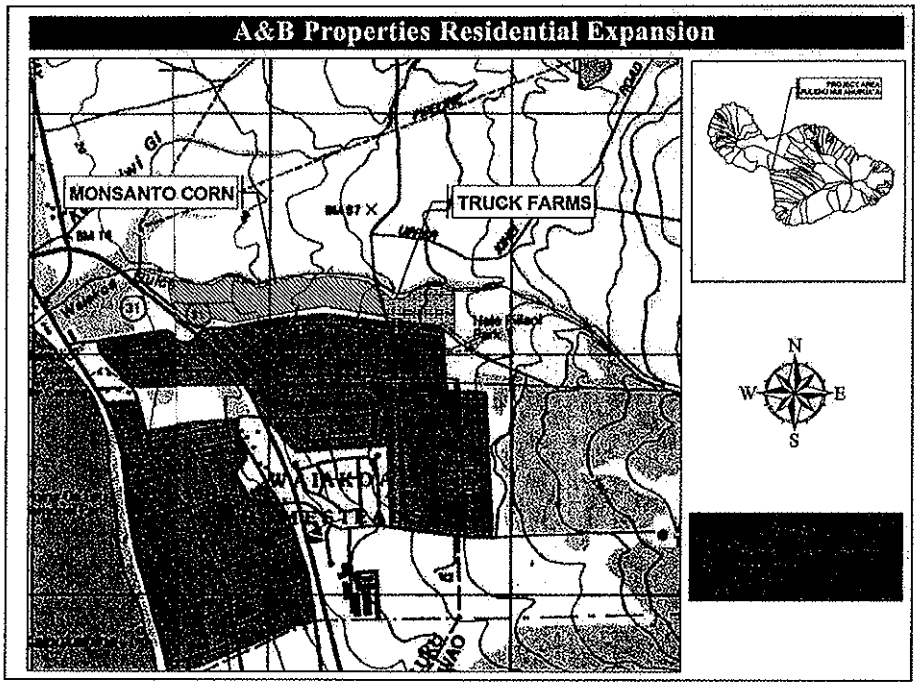


Figure 5. A portion of the 1998 Puu o Kali and Maalaca 7.5-minute USGS topographic quadrangles, showing the proposed residential expansion area and approximate areas currently under cultivation

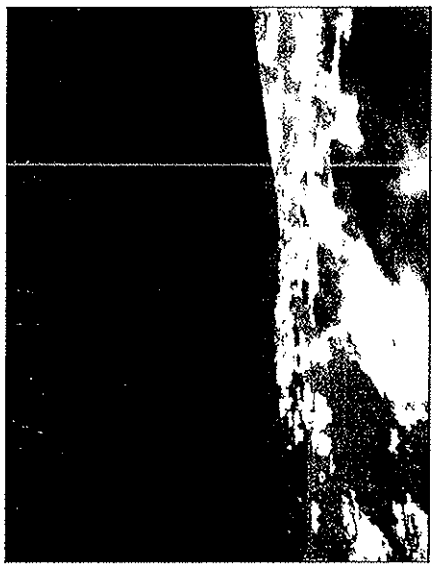


Figure 6. Overall view of uncultivated portion of project area, view to east

Figure 7. Truck farming area, Hale Pi'ilani Residential Subdivision in the background, view to east

Section 2 Methods

Numerous published and unpublished accounts, surveys, reports, maps and photographs found in public and private collections pertaining to Pūlehu Nui and the project area were investigated by Cultural Surveys Hawai'i Inc. Historical documents, maps and existing archaeological information pertaining to the sites in the vicinity of this project were researched at the State Historic Preservation Division library, the Hawai'i State Archives, the Bailey House Museum, and Cultural Surveys Hawai'i Library. The office of Hawaiian Affairs, Maui/Lāna'i Islands Burial Council (M/LIBC), and members of other community organizations were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the study area and the surrounding vicinity. The names for potential community contacts were also provided from the researcher's familiarity of the families who were connected to the area. Some of the prospective community contacts were not available to be interviewed as part of this project. A discussion of the consultation process can be found in the following section on Section 5 Community Consultations. Please refer to Section 5 for a complete list of individuals and organizations contacted.

Section 3 Traditional and Historic Background

The division of Maui's lands into political districts occurred during the rule of Kaka'alaneo, under the direction of his *kahuna*, Kalaiha'ōhi'a (Beckwith 1970:383). This division resulted in twelve districts or *moku* during traditional times: Honua'ula, Kahikinui, Kaupō, Kīpahulu, Hana, Ko'olau, Hāmākua Loa, Hāmākua Poko, Ka'anapali, Lahaina, and Kula. The current project area is located on the leeward flank of Haleakalā in the *moku* of Kula and *ahupua'a* of Pūlehu Nui (Figure 8) at a place commonly known as Kīhei.

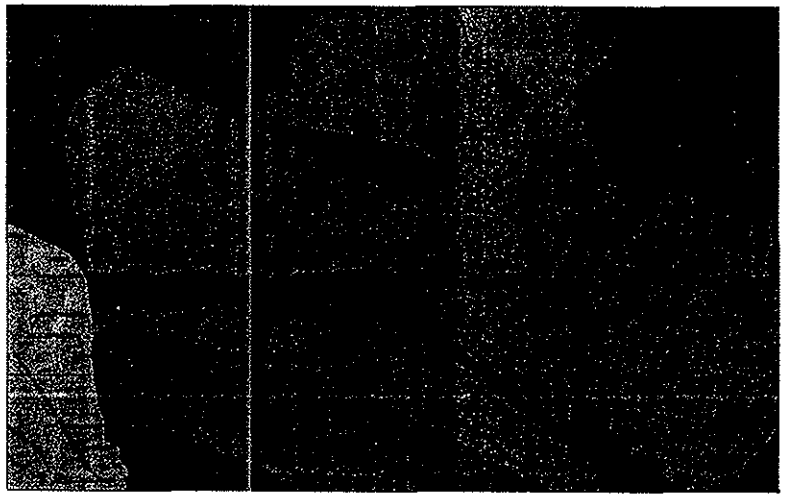


Figure 8. A portion of the F.S Dodge map (1885) showing Pūlehu Nui Ahupua'a in relation to the traditional *moku* of Kula (crown lands in yellow, government lands in green)

3.1 Traditional and Historical Background

3.1.1 Mythological Accounts

While the mythological and traditional accounts of the Kīhei area are relatively scarce, an analysis of the place name meanings 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):

Kula (*moku*) literally translated as "plain"; always an arid region (Handy in Sterling 1995:242)

Pūlehu Nui (*ahupua'a*)	large *pūlehu* where *pūlehu* is literally translated as "broiled"; an alternative meaning is related to the coastal resources of the *ahupua'a* where the large cowry or *lehu* (*Cypraea spp.*) can be found off shore where the direct translation is *pū* (shell) *lehu* (cowry) *nui* (large) (Kimokeo Kapahulehua, personal communication)
Kīhei	literally "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)
Keālia	literally "salt encrustation"; a pond near Kīhei and major salt pan location (Sterling 1998:95)
Kale'ia	literally "the abundance", possibly in reference to the resources available from the fishponds and offshore fishing grounds
Kalepolepo	literally "the dirt"
Ka'ie'ie	"a plaything for floating in the rapids", ancient name of Kalepolepo (Sterling 1998:252)
Kaopala	literally "the rubbish"; dividing line between Pūlehu Nui and Waikapu
Waiakoa	literally "water (used) by warrior"; the name of the gulch that serves as the northern boundary of the project area
Keāhuaiwi	literally "the bone pile"; the name of a gulch immediately adjacent to and north of Waiakoa Gulch
Kalaepohaku	"the stony promontory"
Pohaku Ki'i	or Pohaki'iki'i "tilted stone"; a resting place for travelers
Alakoa	"soldiers street"
Kohemalamalama	"the vagina"; also the ancient name for Kaho'olawe

The above place names, together with the environmental data, suggest that the lands of and surrounding coastal Pūlehu Nui were fairly dry and barren in an agricultural sense but 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 and 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 exploitation. The relative scarcity of recorded coastal place names, however, may be an indication of a smaller population that was widely spread out across the leeward coastal line. The vicinity surrounding the current project

area was also a site of conflict between the Hawai'i Island chief Kalaniopu'u and Maui Island chief Kahekili and is perhaps the origins for such place names as "Waiakoa" and "Keāhuaiwi".

3.1.2 Traditional Accounts

The earliest account concerning Kīhei and Hawaiian politics is given by Kamakau (1961) 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. [1961:70]

Other accounts involve the continuing conflict between Kahekili of Maui Island and Kalani'opu'u of Hawai'i Island during the late 18th century. Following a losing battle at Kaupō in 1775, Kalani'opu'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. When Kaluli Heiau was completed Kaleopu'upu' said to Kahekili:

> This is the house of your god; open the sluice gate that the fish may enter. [Kamakau 1961: 85].

In the year 1776, the army of Kalani'opu'u landed at Keoneo'o'io with their war canoes extending to Makena at Honua'ula and proceeded to ravage the countryside. Kalani'opu'u landed with additional forces at Kīhepūko'a from 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]

In the Battle of Kakanilua, the forces of Kahekili descended on and destroyed the soldiers of Kalani'opu'u, slaying the Alapa (elite soldiers of Kalani'opu'u) on the sand hills at the southeast of Kalua, an *ahupua'a* or land division near Wailuku. Only two men escaped to Kīheipuko'a to tell Kalani'opu'u the news of their defeat. After a second day of warfare, Kalani'opu'u sued for peace and was granted such by Kahekili and his messengers at Kīheipuko'a (Kamakau 1961:88-89).

3.1.3 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 on-shore 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 (1938:313) 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.

We believe that Kuykendall's observation was most likely 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), located approximately one mile to the south of the current project area. 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 1800's appears to be supported by Kolb and others (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.

In 1820, the whaling industry was introduced in Hawai'i. Although the whaling trade centered on Lahaina, 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. amsl). During this time period sugar cultivation and ranching were established in the Kula region. Sugar was present prior to 1846, with six sugar producers operating on the slopes of Haleakalā (Wong Smith in Brown et al. 1989:C-7). As Wong Smith points out (Brown et al. 1989: C-6), ranching was present in the area prior to the 1840s. Much of the produce, sugar and livestock moved down the Kalepolepo and Kekuawaha'ula'ula Trails to the landing at Kalepolepo, just south and east 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. 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 and moved to Ulupalakua (Janion 1977:25-31).

3.1.4 Mid- to late-1800s

The most significant change in land-use patterns and allocation came with The Great Mahele 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 Mahele, all of the lands in the Kingdom of Hawai'i were divided between *mō'ī* (king), *ali'i* and *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 March 8, 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 (Table 1). A portion of the 1880 Monsarrat and Dodge map of Kula shows that the area in which the current project area lies was awarded to Keaweamahi as a part of LCA 5230 (Figure 9) and supporting testimony given to the land commissioners indicate that the land of Pūlehu (Pūlehu Nui) was given to Keaweamahi by the King in 1843 and never disputed (Waihona 'Aina 2000). 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 (Waihona 'Aina 2000). As indicated in Table 1, the majority of the lands that were awarded were *kula* lands used for potato cultivation (both sweet potato and Irish potato)and primarily located along the upper elevations of the *ahupua'a*. Only one land claim, made by Kapono (LCA 9018), made mention of fishing rights and access to a *loko*. Land commission claim # 9018 was not awarded.

Table 1. Land Commission Awards Within Pūlehu Nui Ahupua'a

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0327B	7691	Preveer, John	Apana	6.03
9671	2202	Kekahuna	2 kula, 1 Irish potato	5.78
9019	6330	Helehua	3 kula	9.08
4672	6560	Poonui	6 kula, 3 sweet potato plots, 1 Irish potato	4.09
9672	5190	Napoko	2 kula, 3 Irish potato	12.56
9673	6329	Lonoaea	2 kula	4.06
8866	5168	Kaniho and Pakeau	2 kula, 1 house lot, 1 mala of Irish potatoes	14.9
4567	7484, 7896	Wahine	11 kula, 10 sweet potato	7896
5230	8140	Keaweamahi	ahupua'a	1668.78

In 1879, following the initial division of lands during the Mahele, the western boundary of Pūlehu Nui was disputed by the owners of adjacent lands in Waikapu. 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 Kalaepohaku. The eastern boundary line that was being claimed for Waikapu, 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* (Figure 9). The line carried along this *kahawai* to Pohaki'iki'i, a rock that was a resting place, 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 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)

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 Land Commission Awards and who had received awards had replaced them with grants. Lower Kula consisted primarily of pastureland for ranching (Wong Smith in Donham 1990b:B-6). Kennedy (1992:7) notes that at this point *kiawe* was imported to feed cattle and provide wood.

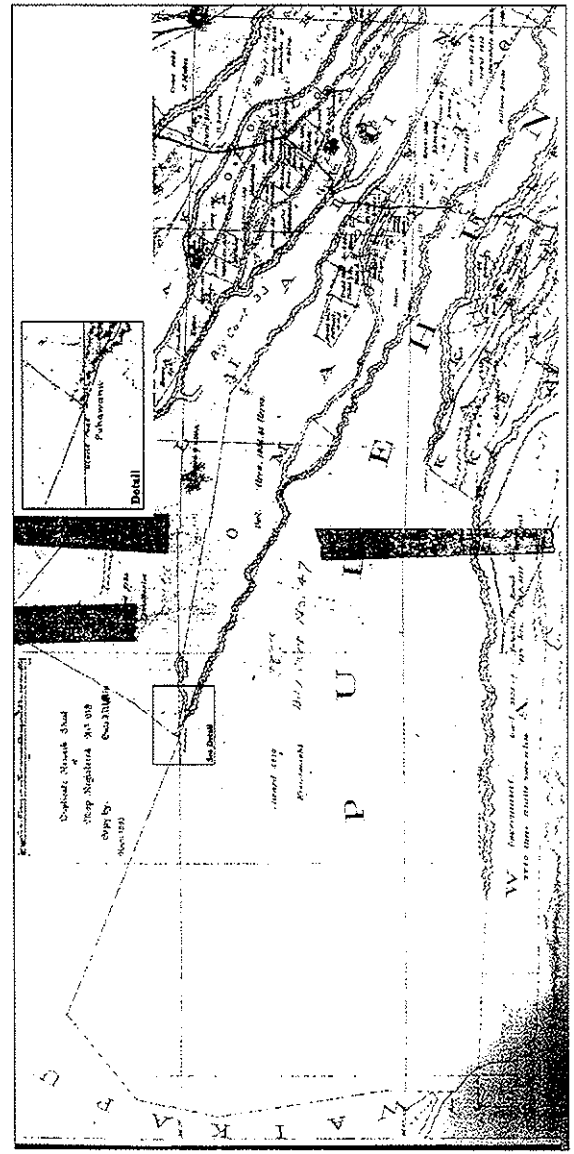


Figure 9. A portion of the M.D. Monsarrat and F.S. Dodge Map of Kula (1880) showing final western boundary of Pūlehu Nui. Note the detail inset and the possibility that the "stone post" as noted on the map refers to Pohaki 'iki'i, the stone resting place, that was mentioned in the Native Testimony

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 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 filed 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).

Sugar would soon fill the void and in 1898 the Kīhei Plantation Company (KPC) was founded. The KPC began sugar operations in Kīhei and the plain above.

3.1.5 Early to Mid-1900s

The Kihei Plantation Company, Ltd. 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 Kīhei Plantation Company begins with the annexation of the Hawaiian Islands by the United States in 1898. With annexation came political stability for Hawai'i. 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.

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.

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.

3.1.5.1 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 (Conde 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." 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 (Conde 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).

The laying of the railroad and the cultivation of the sugar cane was performed primarily by Japanese field labor (Figure 10). 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 and south of the current project area (Figure 11).

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.

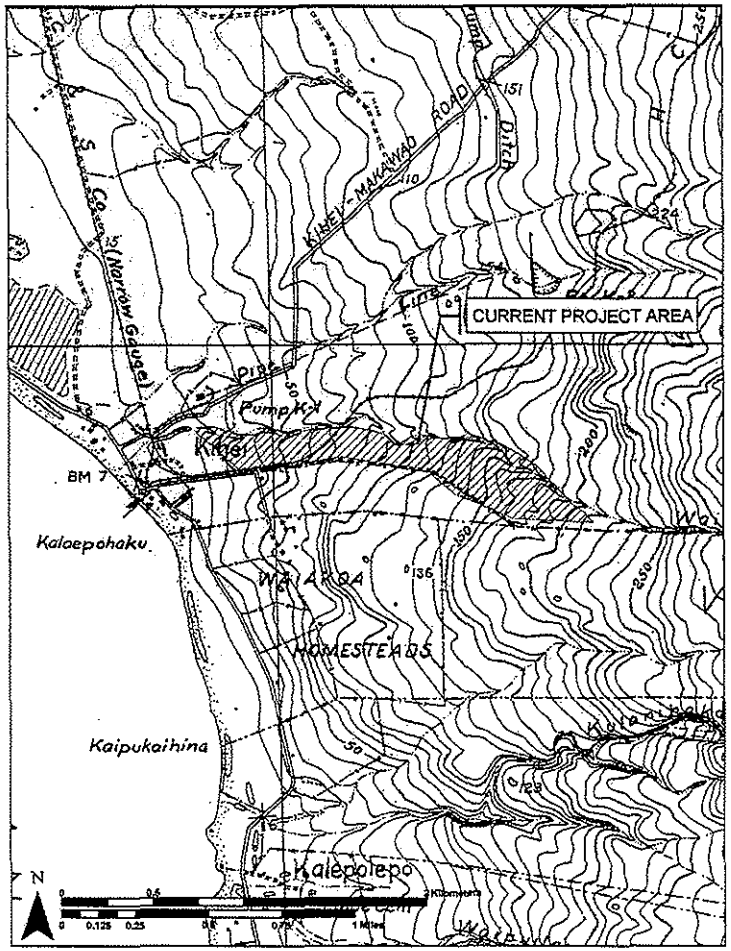


Figure 10. A portion of the 1922 USGS Map, Kihei Quadrangle showing location of current project area in relation to the railroad to Kīhei

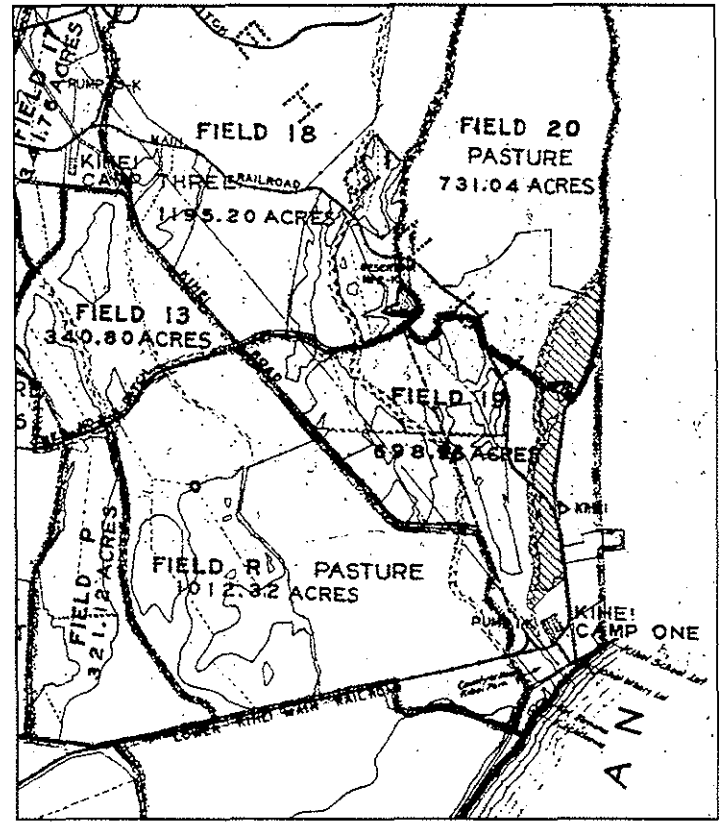


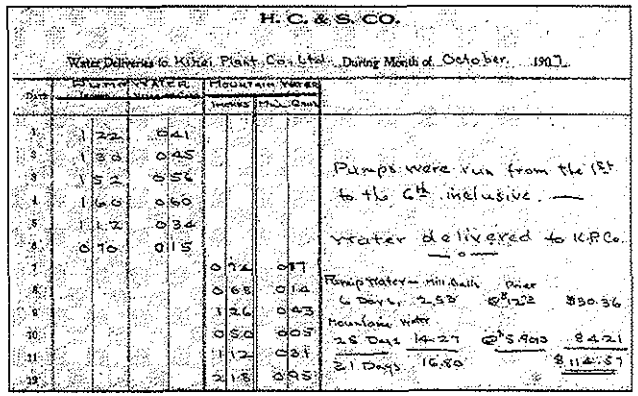
Figure 11. Portion of H.I. Shoemaker map (1910) showing Kīhei sugar cane field and employee camp distribution in relation to the project area (shown in red cross hatch)[1]

[1] Map was georeferenced using ARCView 8.1, Affine transformation, and known points from the 1998 USGS topographic map of the Puu O Kali quadrangle

3.1.5.2 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, both from wells and from the East Maui water shed. 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 2/9^{ths} of the capacity from the enterprise (See Figure 12) (Dean 1950).


H. C. & S. CO.

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

Date	Hours	Water Gauge	Mountain Water Inches	Mountain Water Gauge	
1	1 22	0 41			
2	1 30	0 45			
3	1 52	0 56			
4	1 60	0 60			
5	1 12	0 34			
6	0 70	0 15			
7			0 72	0 17	Pumps were run from the 1st to the 6th inclusive. —
8			0 68	0 14	Water delivered to K.P.Co. — o —
9			1 26	0 43	Pump water — Hours Gauge Price 6 Days 2.58 @$12.22 $30.36
10			0 50	0 05	Mountain water
11			1 12	0 31	25 Days 14.27 @$5.903 84.21
12			2 18	0 95	21 Days 16.80 $114.57

Figure 12. A portion of an accounting statement for water delivered to the Kihei Plantation Company in 1907.

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 (Conde 1973).

In 1908, the lands of the Kihei Plantation Company were divided up between five new major business entities of HC&S. The Kahului Railroad, which had already been absorbed by HC&S, acquired the rail lines to Kīhei and the rolling stock of the plantation. 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. The current project area currently overlies what were formerly cane field 19 and pasture field 20 (see Figure 11). Sugar operations continued in North Kīhei until circa 1968, when HC&S leased lands to a corn research farm.

3.1.6 Modern Land Use

In 1968, Trojan Seed Company established a corn research farm at Kīhei that included the area comprising the present project area. Trojan Seed evolved through ownership by Pfizer Genetics and DeKalb Corn to the present Monsanto Global Seeds business focusing on the development of round-up resistant corn seed. Modern land use of the project area currently includes the seed corn operation run through Monsanto Global Seeds and truck crop cultivation on the portion of the area was formerly a part of Field 19 (see Figure 11).

Section 4 Archaeological Research

The majority of archaeological reconnaissance and inventory surveys in the North Kīhei area (Figure 13 and Table 2) have produced relatively little significant information in the way of archaeological data. While this may be due in large measure to changes on the land associated with sugar cane cultivation, ranching, and military use, as well as resort and housing construction, it still seems inescapable that there are only few areas in the Hawaiian Islands abutting sandy beaches that have less in the way of documented Hawaiian cultural deposits than Kīhei. While only a few projects in areas back from the coast have identified both pre-contact and post-contact agricultural features (Donham 1989 and 1990; Chaffee et al. 1997; Kennedy 1987, Cordy 1977), enclosures and deposits with a posited pre-contact and post-contact habitation function (Cox 1976; Cordy 1977; Donham 1990; Fredericksen et al. 1993 and 1994; and Fredericksen and Fredericksen 1995, McDermott et al. 2000 and 2001), pre-contact burials (Kennedy 1990) and military sites (Fredericksen et al. 1994; Tomanari-Tuggle et al. 2000), a number of archaeological studies have identified no archaeological sites at all (Hill 2005; Hommon 1981; Borthwick et al. 2002; .Burgett and Spear 1997; Chaffee 1999; Burgett et al 1998; Kennedy 1986 and b, 1988 a and b, and 1989).

During a large scale archaeological reconnaissance and salvage project for the then proposed Pi'ilani Highway road corridor, located directly east and adjacent to the current project area, Cox (1976) identified a total of six archaeological sites from Pūlehu Nui to Kama'ole Ahupua'a. The archaeological findings included one miscellaneous alignment (-0220), two historic house complexes (-0221 and -0222), an *ahu* (-0219), and two pre-contact temporary shelter sites (-0223 and -0224). Subsequent work by Cordy (1977) identified a total of 32 additional single component and multi-component archaeological sites within the same road corridor. Including the Cox study, 23 archaeological sites were identified as pre-contact sites representing temporary habitation (n=13), agriculture (n=6), and aquaculture (n=2). Only two out of the twenty-three sites identified as pre-contact was of an indeterminate function. The remaining 15 archaeological sites were determined to be of the historic era and representative of railroad and transportation remnants (n=6), ranching (n=3), water control (n=1), and habitation (n=1). Four wall features that were identified as historic were also recorded but function could not be determined.

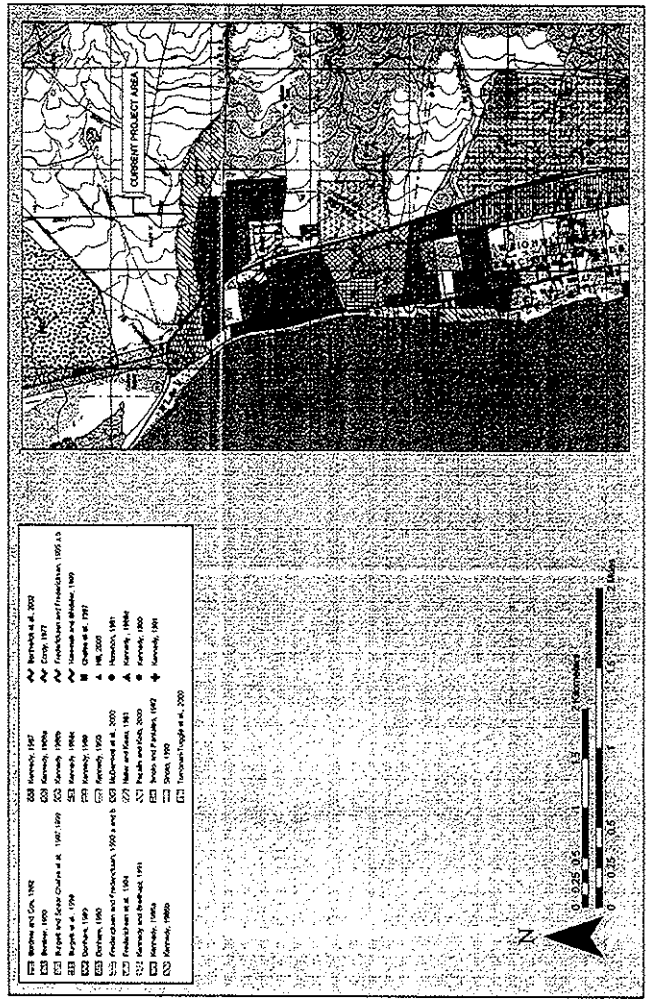


Figure 13 A portion of the 1998 Puu o Kali and Maalaea 7.5-minute USGS topographic quadrangles, showing the project area relative to areas of previous archaeology

Table 2. Summary of Previous Archaeology of the North Kīhei Vicinity

Year	Author	Location	Type of Study	Findings
1931	W. Walker	Entire Island	Reconnaissance	three *heiau* in the uplands of Pūlehu Nui
1973	W. Kikuchi	State-wide fishpond survey	Fishpond survey	Notes 3 fishponds in the Kalepolepo area
1976	D. Cox	Pūlehu nui to Kama'ole	Surface Survey	Identified 6 sites
1977	R. Cordy	Pūlehu nui to Paeahu	Reconnaissance	Identified 38 sites: 30 in Waiohuli, 0 in Ka'ono'ulu and 8 in Kēōkea
1981	R. Hommon	Coastal Waiakoa	Reconnaissance	No archaeological findings
1982	R. Bordner & D. Cox	Coastal Waiohuli & Kēōkea	Reconnaissance	Reports 9 sites
1986a	J. Kennedy	Waiohuli	Reconnaissance	No findings
1986b	J. Kennedy	Coastal Waiohuli	Reconnaissance	No archaeological sites were found
1987	J. Kennedy	Coastal Pūlehu Nui	Inventory Survey	Stacked rock wall, series of rock alignments, 2 ahu, one possible upright, and one earthen mound
1988a	J. Kennedy	Coastal Ka'ono'ulu	Reconnaissance	No archaeological findings
1988b	J. Kennedy	Coastal Waiohuli	Reconnaissance	No archaeological Findings
1988c	J. Kennedy	Coastal Waiohuli	Reconnaissance	No archaeological Findings
1989	T. Donham	Waiohuli	Inventory Survey	Identified 4 sites in a portion of the Miura 1982 study area and recommended data recovery
1989	W. Fredericksen et al.	Coastal Kama'ole	Inventory Survey	No archaeological findings
1989	J. Kennedy	Coastal Waiohuli	Subsurface Testing	No archaeological findings
1990a	T. Donham	Coastal Waiohuli	Data Recovery	Site 2475 was excavated
1990b	T. Donham	Coastal Kēōkea	Inventory survey	Part of Miura 1982 study area. 16 sites were identified
1990a	W. Fredericksen & D. Fredericksen	Coastal Kēōkea	Monitoring	No archaeological findings
1990b	W. Fredericksen & D. Fredericksen	Coastal Kēōkea	Survey & Monitoring	No archaeological findings
1990	J. Kennedy	Coastal Waiakoa	Survey	No archaeological findings
1990	A. Sinoto	Coastal Waiakoa	Survey & Testing	No archaeological findings (other than 2 pieces of midden)
1991	J. Kennedy & M. Breithaupt	Coastal Kēōkea	Inventory survey	No archaeological findings

Year	Author	Location	Type of Study	Findings
1992	J. Kennedy	Coastal Kama'ole	Inventory survey	Identified 4 sites including a permanent pre-contact habitation/religious site
1992	J. Kennedy et al.	Coastal Kama'ole	Inventory survey wt Subsurface Testing	Identified 4 sites all believed to be historic; two military and 2 ranching
1992	Sinoto & Pantaleo	Coastal Pūlehu Nui	Inventory Survey	No archaeological findings other than a bridge foundation (site -3131)
1993	D. Fredericksen et al.	Coastal Waiohuli	Inventory Survey/Data Recovery	A rock shelter excavation yielded lithic artifacts, midden and a date of A.D. 1560 to 1800
1994	E. Fredericksen et al.	Ka'ono'ulu, *mauka* of Pi'ilani Highway	Inventory Survey	21 sites were identified, some military and some pre-contact
1994	W. Fredericksen et al.	Coastal Waiohuli	Inventory Survey	22 backhoe test trenches were excavated but there were no significant archaeological findings
1995a	E. Fredericksen & D. Fredericksen	Waiohuli	Inventory Survey	one rock shelter site was identified as a pre-contact temporary habitation site
1995b	E. Fredericksen & D. Fredericksen	Waiohuli	Data Recovery	Four carbon dates were obtained suggesting late pre-contact use.
1997	Chaffee et al.	Waiohuli (120' elevation)	Archaeological Inventory Survey	3 sites were identified, all interpreted as agricultural
2000	Pepalis, J. & Michael J. Kolb	Waiohuli	Archaeological Excavations	Found evidence of a stream-fed pond near Kalepolepo Church
2000	McDermott, Shideler, and Hammatt	Waiohuli, adjacent to the Kalepolepo Church	Additional Archaeological Inventory Survey (Backhoe Testing)	Document Site 50-50-09-4981, former inland pond that contains evidence of early occupation at coastal Kīhei--approximately A. D. 600-900. An elaboration on Pepalis and Kolb's work, described below.
2000	Tomonari-Tuggle et al.	Pūlehu Nui	Archaeological Inventory Survey	Documented four multi-component archaeological complexes (50-50-09-4164 [NAS Puunene], -4801 [post-war ranching], 4803 [sugar plantation], and -4800 [sugar plantation])
2001	M. McDermott	Waiohuli Kīhei	MA Thesis	Historical ecological study of Kīhei utilizing pollen, soil, and ^{14}C analysis as evidence to document an early habitation sequence for coastal Kīhei

Date	Author	Ahupua'a	Type of Study	Findings
2002	Pepalis and Kolb	Waiohuli Ahupua'a	Sub-Surface Testing	Documented highly stratified cultural deposits of an inland pond.

Bordner (1980) conducted an archaeological investigation directly south and adjacent to the present project area and identified primarily historic era properties. Bordner's study area covered the residential subdivision currently known as the Hale Pi'ilani Subdivision located *mauka* or west of the Pi'ilani Highway, as well as, a section *makai* or east of the Pi'ilani Highway that was later developed into the Kihei Villages Condominium Complex. During the course of the inventory survey, Bordner relocated SIHP #'s -0219, -0220, and -0221, originally identified by Cox (1976), as well as six new historic properties within the *mauka* section of the study area. The six new sites consisted of historic era *ahu*, two remnant alignments of an indeterminate age, a historic stacked stone wall and an elongate basalt mount with an upright slab of an indeterminate age. Bordner reports no surface findings in the *makai* portion of the project area. In 1987, Kennedy revisited the *makai* portion of the Bordner project area in anticipation of the Kihei Villages development and identified six new early Hawaiian pre-contact era archaeological sites. These sites consisted of a stacked *ahupua'a* boundary wall approximately 300m long, two rock mounds, one upright, a series of low parallel rock alignments attributed to sweet potato agriculture, and one large mound or dune with possible burials.

Sinoto and Pantaleo (1992) conducted an archaeological inventory survey of approximately 38.5 acres east of the present project area near the former location of Kihei Camp One. Only one historic property, the remains of concrete footings from a bridge crossing Waiakoa Gulch, was recorded. Due to the considerable ground disturbances, which included several bulldozing events, Sinoto and Pantaleo did not undertake a subsurface testing program.

Tomonari-Tuggle and others (2000) conducted an intensive archaeological inventory survey of the area that encompassed the former location of Naval Air Station (NAS) Pu'unene north of the present project area. This inventory survey resulted in the recordation a total of four multi-component archaeological complexes (50-50-09-4164, -4801, 4803, and 4800), as well as one single component site noted as the Kīhei Railroad Bed (SIHP # -4802). SIHP # -4164 consists of 165 features, all of which are associated with NAS Pu'unene. SIHP numbers -4800 and -4803 were representative of the sugar plantation use of the central isthmus and consisted of seven plantation era features for the former site number and remnants of the Haiku ditch and reservoir (n=5) for the latter. Historic properties reflecting post-war ranching activities (SIHP # -4801) were also recorded during the course of this inventory survey.

Xamanek Researches (E. Fredericksen et al. 1994) conducted an inventory survey in Ka'ono'ulu Ahupua'a at a similar elevation as the current project area. A total of 21 archaeological features reflecting pre-contact use of the area, as well as, post-contact military and ranch use were recorded. The pre-contact or Early Hawaiian archaeological features included five stone piles possibly representing agricultural use, five surface scatters representing pre-contact temporary habitation and one petroglyph. Military use of the area is represented by five stone cairns, three alignments, and one enclosure. A single feature, interpreted as an erosion containment area, was recorded in association with ranching activities.

Further south of the project area, Chaffee and others (1997) identified three historic properties that were interpreted as agricultural features. Donham (1989, 1990b) identified 16 sites, including nine terraces, seven enclosures, four C-shapes, four rock piles, two platforms, an alignment, and a modified outcrop. Most features were interpreted as agricultural features, while a few were considered temporary habitations. Donham concluded that these agricultural and habitation features likely indicated a more extensive use of the "transitional" or barren zone than some settlement models suggested. Donham's (1989, 1990) work took place within a portion of the Bordner and Cox (1982) project boundaries and found similar archaeological features.

The inventory surveys for the then proposed "Pi'ilani Residential Community - Phases I and II" (Bordner and Cox 1982; Donham 1989, 1990b) identified only rock alignments and no further research was conducted related to the proposed phased subdivision. A single site (50-50-10-2475) near Pi'ilani Highway, and Līpoa Street was subjected to data recovery (Donham 1990a) and interpreted as an agricultural terrace complex. Following this data recovery, no further research was recommended and the commercial and residential subdivision was subsequently constructed.

The chronological timeline for settlement of the Kīhei area however, is still being debated. Based on the results of studies conducted by McDermott and others (2000) and McDermott (2001), habitation in the coastal areas may date to as early as A.D. 600-900. Without a doubt, coastal habitation along with more populous inland/upland settlement was firmly established by A. D. 1400-1500. The majority of permanent habitation would have been in the uplands, concentrated in the well-watered and fertile agricultural areas. Coastal permanent habitations were likely less numerous and centered around the ceremonial structures and fish ponds at Kalepolepo that are thought to date to the 1500s (Kolb et al. 1997:66).

Until recently, the few available radiocarbon dates from the Kīhei area were consistent in their rather broad, late pre-contact age determinations, most commonly post A.D. 1500 (E. Fredericksen and D. Fredericksen 1995b; W. Fredericksen 1994; D. Fredericksen et al. 1993). This indicates that the more intensive use of the Kīhei area was associated with later a pre-contact development that corresponded with the expansion of upland permanent habitation, ceremonial constructions, and agricultural clearing after A.D. 1400-1500 (Kolb et al. 1997:281-282).

Evidence of earlier coastal habitation in the Kīhei area, however, has recently come to light at excavations adjacent to the site of the Kalepolepo Church. The recent excavations described by McDermott and others (2000) and McDermott (2001), in conjunction with those of Pepalis and Kolb (2002), provide evidence in the form of charcoal concentrations, midden deposits, 14C dates, and palynomorph identification, that indicates settlement in the vicinity of an inland pond feature as early as c. A. D. 600-900.

The most recent work conducted within the project area consisted of an archaeological inventory survey that was performed in conjunction with this cultural impact assessment. Two historic properties (SIHP 50-50-09-5744 and -5745) and a scatter of cultural materials (CSH-3) of questionable origin and antiquity were documented during the pedestrian survey of the un-cultivated portions of the project area. Both the well site (SIHP -5745) and the surface scatter of cultural materials (Temporary Field Number: CSH-3) were located in the easternmost portion of the project area while the historic bridge and flume spans the width of Waiakoa Gulch on the

northern boundary of the project area. In the present project area, evidence of pre-contact habitation and agricultural use were absent. This paucity of pre-contact archaeological sites could be attributed to two factors: 1. that the project area is located in what is known as the transitional/barren zone of the pre-contact settlement and therefore site density was expected to be low; and 2. the lands in and surrounding the current project area have undergone heavy landscape modifications by historic sugar cultivation and ranching operations effectively eliminating surficial pre-contact archaeological sites. Lack of pre-contact Hawaiian historic properties notwithstanding, the inventory survey documented historic plantation-era railroad and water control features and confirmed the history of early plantation modification within the project area. Both historic era properties were likely originally associated with the Kihei Plantation Company and the early sugar venture in the North Kīhei area.

4.1 Background Summary and Settlement Pattern

Previous archaeological studies have led to archaeological site interpretation based on the division of the settlement pattern for Maui into three zones: 1. coastal; 2. barren or transitional; and 3. inland (Cordy 1977; Walton 1972; Cox 1976). The coastal zone for this portion of Maui is a ¼ mile wide band running along the shoreline. The inland zoned begins approximately five to seven miles from the shore and is characterized by larger rainfall accumulation and lusher vegetation. The transitional or barren zone is classified as the area between the edge of the coastal zone and beginning of the inland zone and characterized by brush/scrub vegetation and low annual rainfall accumulation.

Based on available archaeological evidence and interpretations, the following settlement pattern and site type expectability is proposed. Temporary habitations related to marine exploitation, such as stacked-stone enclosures, and possibly smaller ceremonial structures, such as stacked-stone fishing shrines, may have been scattered along the coastline. It is likely that human burials would have been interred in the coastal sand dunes where present and immediately back from the coast. *Mauka-makai* trails would have connected the coastal settlement with the *mauka* permanent habitation and the coastal or *alanui* trails would have connected different coastal habitation areas between Mākena and Kīhei (Kolb et al. 1997:33). The upland area, with a more substantial water supply and good soil, would have sustained a larger population where subsistence would have revolved around dry-land agriculture. High occurrences of agricultural fields and larger structures and cultural deposits representing permanent habitation would be expected. As would be expected in area that are densely populated, larger *heiau* or ceremonial structures would occur in the inland region. Finally, the barren or intermediate zone, where the current project area lies, is broad in this portion of Maui. Inventory surveys of portions of this transitional/barren zone of Waiohuli and Kaono'ulu Ahupua'a have found pre-contact remnants of dispersed, low-intensity, dry-land agricultural features, such as mounds and alignments, as well as temporary habitations (Chaffee et al. 1997; Donham 1990; Miura 1982).

Given that the project area is located in the transitional or barren settlement zone for this area of Maui, it is postulated that pre-contact archaeological sites representing temporary habitation or campsites may have been located within the project area, in addition to mounds and/or small terraces related to small scale agriculture. After further review of the historic literature and the

occurrence of historic agriculture in the immediate vicinity of the project area, historic properties associated with early plantation infrastructure (e.g. water control features and transportation features) as well as ranch activities (e.g. animal husbandry walls or corrals) were also probable.

Section 5 Community Consultations

The following table presents the results of the community consultations that were conducted with columns for name, affiliation, contact information, knowledge of the area and comments.

Table 3. Preliminary Results of Community Consultations

Name	Affiliation	Contacted	Personal Knowledge	Comments
Mr. Charles Maxwell	*Kupuna*, Chair M/LIBC, President - Hui Mālama I Na Kupuna,	Y	–	Declined to comment
Ms. Hōkūlani Holt-Padilla	Master Kumu Hula, Maui Arts and Cultural Center – Director of Cultural Programs	Y	Y	Gave comments and background information; see Section 6
Mr. Stan Solamillo	Maui County Cultural Resources Commission	Y	N	No comments; Called to inform that he was passing the information on to people working on the fishpond reconstruction in North Kīhei. Referred to Mr. Kimokeo Kapahulehua
Mr. Leslie Kuloloio	*Kupuna*, Hui Alanui O Makena, Councilmember for the M/LIBC	Y	Y	Gave comments see Section 6
Mr. Kimokeo Kapulehua	President of 'Ao'ao O Nā Loko I'a O Maui, a non-profit organization overseeing the restoration of Ko'ie'ie Loko o I'a at Kalepolepo, Resident of North Kīhei	Y	Y	Shared comments and background information as well as the contact information for Mrs. Paula Kalanikau, formally interviewed on April 17, 2006, (see Section 6 and Appendix A)

† Key:
Y=Yes
N=No
A=Attempted (at least 3 attempts were made to contact individual, with no response)
S=Some knowledge of project area
D=Declined to comment
U=Unable to contact, i.e., no phone or forwarding address, phone number unknown

Name	Affiliation	Contacted	Personal Knowledge	Comments
Ms. Thelma Shimaoka	Maui Island Community Resources Coordinator, Office of Hawaiian Affairs (OHA)	Y	N	Deferred to Mr. Lance Foster
Mr. Lance Foster	Director of Native Hawaiian Rights, OHA	Y	N	Forwarded information to Mr. Clyde Namu'o.
Mr. Clyde Namu'o	OHA – Administrator	Y	N	Referred to Ms. Thelma Shimaoka; Requested that in if the project moves forward and any significant cultural deposits or human skeletal remains were encountered, that work stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) be contacted per Section 6E-46.6 Hawaii Revised Statues and Chapter 13-300.
Ms. Sunny Greer	SHPD – Culture and History Branch	N	--	Sent letter of inquiry
Dr. Melissa Kirkendall	SHPD – Maui Island Archaeologist	N	--	Sent letter of inquiry
Ms. Vanessa Medeiros	Department of Hawaiian Homelands	N		Sent letter of inquiry
Mr. Ki'ope Raymond	Maui Community College, Hawaiian Studies	N		Sent letter of inquiry
	Maui Historical Society	N		Sent letter of inquiry
	Central Maui Hawaiian Civic Club	U		No forwarding address
Aunty Paula Kalanikau	*Kupuna*, long-term resident of Kīhei	Y	Y	Formal interview conducted on April 17 (see Section 6 and Appendix A), shared contact information for Mrs. Bonnie Herbert (Akina)
Mrs. Bonnie Herbert (Akina)	Noted family in the Kīhei area	A		
Mrs. Ann Kenolio	Noted family in the Kīhei area	Y	N	Deferred to Ms. Hōkūlani Holt-Padilla, shared contact information for Mr. David Kenolio and Mr. Kimo Kenolio

Name	Affiliation	Contacted	Received Comments	Comments
Mr. David Kenolio	*Kupuna*, noted family in the Kīhei area currently residing on O'ahu	Y	S	Deferred to his cousin Kimo Kenolio.
Mr. Kimo Kenolio	*Kupuna*, noted family in the Kīhei area currently residing on O'ahu	Y	S	Gave comments and background information; see Section 6

Section 6 Summaries of Informal and Formal Kama'āina Interviews

6.1 Informal Interviews

6.1.1 Ms. Hōkūlani Holt-Padilla

An informal telephone interview was conducted with Ms. Holt-Padilla on April 3, 2006. Ms. Holt-Padilla noted that Kīheipūko'a is situated immediately *makai* of the project area near the mouth of Waiakoa Gulch and reaffirmed the importance of this location during the Battle of Kakanilua as the landing place of Kalaniopu'u and his elite warrior troops. While Ms Holt-Padilla asserts that the advancement of Kalaniopu'u's troops toward Wailuku and Iao Valley likely took a more northerly route, by way of Waikapū, it is possible that the troops may have made camp in the area *makai* of and into the westernmost extent of the current project area. During the interview, Ms. Holt-Padilla also pointed out the proximity of Waiakoa Gulch in relation to the current project area and noted that prior to Western-contact and the advent of water diversion to support the historic ranching and agriculture industries, the waters likely flowed with some regularity and supported some form of agriculture and habitation in the lower reaches of the *ahupua'a*. She further states, however, that the history of intensive historic agriculture within the project area would have eliminated any archaeological signature of these activities, in the form of architecture or cultural material deposits, from the landscape.

6.1.2 Mr. Leslie Kuloloio

Mr. Leslie Kuloloio was contacted on April 8, 2006. While Mr. Kuloloio noted that historic properties reflecting pre-contact temporary habitation and *kula* agriculture occurs at elevations similar to the current project area in *ahupua'a* further south (e.g. Keokea Ahupua'a and Kama'ole Ahupua'a), he also noted that if present within the project area during pre-contact times, any remnant of the traditional agricultural activities within the project area would have likely been plowed under or cleared during the intensive historic and modern era cultivation of the project area. When asked about traditional cultural practices within the project area, Mr. Kuloloio indicated that there were not any extant traditional Hawaiian cultural practices within the project area.

6.1.3 Mr. Kimo Kenolio

Mr. Kimo Kenolio, of the Kenolio Ohana, one of the noted fishing families of Kīhei, was initially contacted by telephone on March 30, 2006. Mr. Kenolio noted that the area *makai* of the project area was primarily inhabited by plantation people and commonly known as Japanese Camp or Kihei Camp 1. With regards to Native Hawaiian traditional practices, he recalled that the Hawaiian families in the area behind and next to Japanese Camp grew dry-land taro areas and that the Kīhei area in general was noted for fishing, particularly *weke* and *'akule*, and *limu* or seaweed collection. As far as the lands that comprise the project area, Mr. Kenolio could not recall any specific traditional practices in the area but felt that anymore development in the Kīhei area would affect the area in general and would like to see the landscape remain as it is.

6.2 Formal Interviews

6.2.1 Mr. Leonard Kimokeo Kapahulehua

Mr. Kimokeo Kapahulehua was born in 1947 on the island of Kaua'i. His first trip to Maui in 1963 was associated with canoe paddling and in 1970 he moved to Maui permanently. Since 1980, Mr. Kapahulehua has been a resident of Kīhei and active with canoe paddling and traditional Hawaiian cultural practices in the South Maui area. As president of 'Ao'ao O Nā Loko I'a O Maui, a non-profit organization overseeing the restoration of Ko'ie'ie Loko o I'a, the fishpond at Kalepolepo, Mr. Kapahulehua is actively involved with fishpond restoration and cultural education. In addition to his work with fishpond restoration, Mr. Kapahulehua has worked with USDA Fish and Wildlife Service to re-vegetate the native plants in Kealia park and the sand dunes in the surrounding vicinity, as well as, the area near Pu'u O Kali (see Appendix A for the full text of the interview).

When asked about the traditional Hawaiian cultural practices within the project area, Mr. Kapahulehua mentioned that there is:

> Nothing from our time. We don't have real (native) plants up there except the wild plants. You know the *uhaloa*[3], the *'ilima*[4] tree, the *pōpolo*[5] maybe. Everything *mauka* (inland) of the highway, in that area, since the plantation ...pretty much the machine would have wiped out everything. There's really no cultural thing. The only cultural thing about the whole area would be the (location of the project area within the) *ahupua'a*, meaning that the water would have come from *mauka* to *makai* (seaward). There's evidence (of) our water coming from *mauka* to *makai* so you talking about the Waiakoa Stream is right there by Suda Store right?
>
> That would be the only aspect that would have had any cultural significance. As an example, when that stream was flowing naturally, because of its connection to the ocean, we would have *hihīwai*[6] you know the freshwater *'opihi* (limpet). We would have, what do they call that, the *'ōpae lōlō*[7]. The *'ōpae lōlō* is *'ōpae* but the *'ōpae lōlō* is the freshwater one but transparent...we would have (had) all of that down there (in the project area).

[3] Or *hialoa*, *Waltheria indica*, common to dry zones. Used as a gargle for sore throat. (Abbot 1992: 101)

[4] *Sida fallax*. Used in *lei* making for personal adornment. (Abbott 1992: 127)

[5] Or glossy nightshade, *Solanum americanum*. Regarded as one of the visible embodiments of the god Kāne. Used for disorders of the respiratory tact, skin eruptions, and cuts.

[6] *Neritina granosa*, common in mid and lower stream sections (Department of Land and Natural Resources, Division of Aquatic Resources 2006)

[7] *Penaeus marginatus*, brackish-water shrimp or prawn (Pukui and Elbert 1986: 291)

When asked about the stories and knowledge that the kūpuna shared with him for coastal Pūlehu Nui and how that might tie in to land use within the project area Mr. Kapahulehua indicated the following:

> Fishing village. You get all the *'apa papa* (reef), fishing was the main thing for all our south shores. Being that it was calm and everything else down in that area. *Kūpuna* talked about all the fish that they could get in from area.
>
> You know sharing different resources, which was pretty much a flourishing thing for them on the south shore. So our south shores were pretty active. It's not so active now because we don't have all the resources we used to have. But we do have remnants out there (in the ocean) for *loli*[8], the *'ina*[9], the *ha'uke'uke*[10], the *wana*[11], the *he'e*[12] ... this one of the best *he'e* grounds. Just recently, about a year ago people started to find the *he'e* stones out in the channels, I guess we getting bigger storms so things are coming out. They found nine of them. You know what I mean? So this is a great *'ōpelu*[13] ground, *halalū*[14] ground, today is still a great *'ōpelu* ground if you know where. And it's really easy to do just go out there with your canoe, run your line, *palu* (chum) the water, and they come in and you get a hundred pound *'ōpelu*.
>
> So this is a good *'ō'io*[15] ground. I think one person you should interview is the Akina, because that's their fishing grounds. But I do know that this is a *halalū* ground, *'ōpelu* ground, *akule*[16] ground, *'ō'io* ground and *he'e*. Of course our south shores would have been the place where they lay their turtle eggs, there's evidence that the turtle used to come lay their eggs over there. Not only the green turtle, but the hawksbill turtle. So I think if anything that would be any cultural connection would be the usage of the south shore by our *kūpuna*.

While overlooking the project area and relating the context of the place or project area to the ahupua'a of Pūlehu Nui Mr. Kapahulehua hypothesized that:

> (T)hey (the traditional inhabitants of the area) would have been by Waiakoa Stream but (it wouldn't have been) a big population area. The ocean would have

[8] *Holothuria* spp, sea slug or sea cucumber (Pukui and Elbert 1986:211)

[9] *Echinometa* spp, a small sea-urchin (Pukui and Elbert 1986:100)

[10] *Colobocentrotus atratus*, sea-urchin, teeth were used in medicine (Pukui andElbert 1986:60)

[11] *Echinothrix diadema* or *Diadema paucispinum*, variety of sea-urchin (Pukui and Elbert 1986:382)

[12] *Polypus* sp., an octopus commonly known as squid (Pukui and Elbert 1986:63)

[13] *Decapterus pinnulatus* and *D. maruadsi*, a type of mackerel (Pukui and Elbert 1986:292)

[14] Young *akule* fish (see footnote 16)

[15] *Albula vulpes*, lady fish or bone fish (Pukui and Elbert 1986:280)

[16] *Trachurops crumenopthalmus*, big-yed or goggle-eyed scad fish (Pukui and Elbert 1986:16)

been the area that they would be in. I would think that the *ahupua'a* would be the same with every *ahupua'a*, the Hawaiians call it Ko'olau, the wet area, and this would be the Kona area, the dry area. So being that this was the dry area, you would be restricted to more ocean stuff than you would be on the land stuff.

I can just tell you that it would have been almost minimal stuff on the land, unless they were doing like we talking about sweet potato and things like that. So everything would have been down to the ocean and I don't think the village would have gone so far up (by the project area). Would have been close where they would have to bring the canoes back and forth, the fishing canoes. We have fishing *ko'a*, *heiau*, along the shoreline by the library yeah? By Kīhei library, but we don't have any *ko'a* down here. I'm pretty sure the wind was gnarly enough for them, not to really be a place that they want to spiritually connect with... Maybe before, this would have but not now. (W)e don't have any *heiau* over here, we don't have *ahu*, we don't have any village that's standing, if it was, it was before, not now. And the plants that we have is really more this way (wild, indicating the wild plants in fallow fields), because of the plantation, you know the only plants that are growing out here right now is wild plants that is not really their area yeah (introduced species)?

As an example, the next area (*ahupua'a* further south) we have *wiliwili*[17] forest yeah? We have no *wiliwili* forest here and the only other thing that we would have up here would be *naio*[18], but we don't have any *naio* here, *'akoko*[19], no more, no more *nehe*[20], *'āwikiwika*[21], if we have, we have only wild ones. I wish there was a village ... and I'm pretty sure at one time was but as far as today, if there was an impact and as far as usage, we don't use it for sweet potato, we don't use it for *kalo* (taro), we don't use it for banana, we don't use it for breadfruit. It's not that we didn't have the opportunity, there's evidence (that those things could have grown), get banana trees over there (in the truck crop area).

While driving up to and returning from the project area Mr. Kapahulehua reiterated that while development of the area would not directly impact traditional Hawaiian cultural practices within the project area, he did express some concern over increased run-off into Waiakoa Gulch and the potential negative effects that it may have on the coastal fishing grounds.

[17] *Erythrina sandwicensis*, a native leguminous tree (Pukui and Elbert 1986:385), charcoal from the branches were used for making paint for canoes, the branches themselves were used for the *'iako* or booms of the outrigger canoe (Abbott 1992: 81-82); seeds of the *wiliwili* were used for *lei* making (Abbott 1992:125); traditional Hawaiian long boards (*olo*) were also cut from lightwood *wiliwili* (Abbott 1992:129)

[18] *Myoporum sandwicense*, sandalwood tree (Pukui and Elbert 1986:259), large branches or trunks were used for *hale* (house) posts while smaller diameter branches were used for thatching poles (Abott 1992:67)

[19] *Euphorbia spp.*, an endemic shrub and tree chewed for debility (Pukui and Elbert 1986:15)

[20] *Lipochaeta spp*, native shrub and herb in the daisy family (Pukui and Elbert 1986:264)

[21] *Canavalia galeata*, vines were used for temporary fish traps (Abbott 1992:84, 139)

6.2.2 Mrs. Paula Kalanikau

Originally from the island of Hawai'i, Mrs. Kalanikau moved to the Kīhei area in 1965 and built her home with her husband on lands that were inherited from her father-in-law and known as the Kalanikau Estates. During this time period, Mrs. Kalanikau worked for the post office part-time and for Suda Store (near the traditional place known as Kīheipūko'a at the mouth of Waiakoa Gulch) part-time while taking care of her family. Her husband, Moki Kalanikau was a founding member of Kīhei Canoe Club in 1973.

Ms. Kalanikau noted that the Kīhei area in general was a dry and barren place:

This was all *kiawes*[22] around us, all *kiawes*, across was all *kiawes*, over there all *kiawes*, ... there was nobody! And well I take it this, the corner on my left side here, the Souzas were living here yeah, the *mauka* side (toward the mountain) over there where there's the subdivision now, the Vares' were there, but the Vares' house was built far back where I don't see anybody except the yard. The Souza was fenced in with bushes where I they can't see me or I can't see them. And all of these houses never existed ... all *kiawe*, up until the (present Pi'ilani) highway, even *mauka*.

Although the area was dry, Mrs. Kalanikau did mention that garden agriculture was successful in this arid region:

(M)y parents would come over from the Big Island and help us with the *'āina* you know *mahi 'ai* (farming) planting in the back and stuff. We had *'uala*, potato, sweet potato, we have *mai'a* so we have banana and Daddy had some herbal medicine back there which he told me not to remove and I still have only one, it's the *uhaloa*[23], but the rest, I think with the years gone, and with the different terrain, the weather, I had a hard time maintaining some of them.

When asked about the traditional cultural practices of the area, Mrs. Kalanikau stated:

When I came here in '65 I didn't know too many people except the Akina's, yeah the Akina's were practicing the fishing traditions and charcoal. Do you remember before, that's why now...no more *kiawes no ho'i* but before Francis, brother Francis, he was working the charcoal business before.

Mrs. Kalanikau went on to describe how every now and then the fishermen would get together and *hukilau* (or do communal fishing with *lau* or ropes) in front of Suda Store, as well as describe the mango farms of the Hashimoto family and the cucumber and tomato farm of the Managdan family in the area of the Tesoro gas station off of Pi'ilani Highway an Ohukai Road. During a brief field visit to the project area Ms. Kalanikau remarked on how the soil looked like it was a good place for agriculture. When conducting the interview follow up, Mrs. Kalanikau

[22] *Prosopis pallida*, invasive tree species native to Peru (Pukui and Elbert 1986:146)

[23] Or *hialoa*, *Waltheria indica*, common to dry zones. Used as a gargle for sore throat. (Abbot 1992: 101)

mentioned that up until the mid-1970's Waiakoa Gulch would flood intermittently during the seasonal southern exposure storms and expressed some concern for safety and flood control.

Section 7 Traditional Cultural Landscape of Pūlehu Nui Ahupua'a and the Project Area

Discussions of specific aspects of traditional Hawaiian culture as they may relate to the project area are presented below. The concluding discussion examines past and present resources and practices that were identified within the project area in the broader context of the encompassing Pūlehu Nui Ahupua'a landscape.

7.1 Hawaiian Trails

Trails served to connect the various settlements within and between the *ahupua'a* and districts of the Hawaiian Islands in traditional times. While Land Commission Award and Boundary Commission testimony referred to Pohaki'iki'i, a resting rock for travelers, on the boundary of Pūlehu Nui and Waikapu, no trails were noted on the historic maps of the *ahupua'a* or *moku*. Although Ms. Holt-Padilla also indicated that there would have traditionally been overland foot trails connecting the coastal reaches to the *mauka* elevations of the *ahupua'a*, none of the interviewees mentioned or knew of any trails or access right-of-ways within the current project area.

7.2 Hawaiian Habitation and Agriculture

The current project area is situated along the southern edge of Waiakoa Gulch, in what is considered the transitional area between the *mauka* and *makai* settlement areas. Ms. Holt-Padilla, Mr. Kapahulehua, and Mrs. Kalanikau hypothesize that due to the proximity of the lands within the project area to Waiakoa gulch, there may have been some traditional dry-land agriculture along with temporary habitation during the pre-contact or traditional times. Mr. Kenolio also confirmed that dry-land taro was cultivated by Hawaiians at or near the boundary of the coastal and transitional settlement zones. Traditional agricultural pursuits within the project area would have likely focused on *'uala* or sweet potato cultivation, a well-known crop staple of the Kona environment of Maui, as well as dry-land taro. With the exception of modern truck crop cultivation in the center of project area, none of the interviewees or persons consulted knew of any traditional agricultural practices being conducted within the project area.

7.3 Gathering for Plant Resources

While the soils and seasonal rainfall in the area may have supported traditionally used plants such as *uhaloa*, *wili wili*, *'ilima*, and *pōpolo* prior to Western contact and into the early historic period, the lands of the project area have been heavily modified by historic sugar cultivation and modern seed corn and truck crop cultivation. Currently, wild patches of *uhaloa* and *'ilima* were noted within the project area, however, none of those interviewed for the current study knew of any existing gathering practices within the project area.

7.4 Aquatic Resources

Native stream animals supplied the Hawaiian diet with a rich source of protein. While Mr. Kapahulehua noted that Waiakoa Stream may have supported freshwater riverine resources such as *hihiwai* or *'ōpae lōlō* during traditional times, historic and modern water diversion for sugar cultivation and upland ranching and agriculture have since altered the regular flow of this stream. There are currently no concerns for accessing these types of resources through the project area as the stream no longer flows at regular intervals. Modern traditional use of marine aquatic resources are focused along the coastline and near shore areas of the *ahupua'a* (see Appendix A) and access to these resources through the project area is not required.

7.5 Traditional Hawaiian Archaeological Sites

Historical documentation and archaeological study have not identified any traditional Hawaiian archaeological sites within the project area. While an archaeological inventory survey conducted by Cultural Surveys Hawai'i (Lee-Greig and Hammatt 2006) identified historic properties associated with historic sugar cane agriculture, the study also confirmed the absence of any historic properties related to traditional Hawaiian culture within the project area. None of community contacts were aware of any traditional sites within the project area.

7.6 Burials

No specific documentation was found regarding *iwi* (ancestral remains) in the project area. None of community contacts were aware of known burials in the project area.

7.7 Native Hawaiian Hunting Practices

While there is a passing reference to plover snaring during the *kama'aina* testimony regarding the western boundary of Pūlehu Nui Ahupua'a following the Mahele (McCully J Court Opinion in Sterling 1998: 256), no specific native Hawaiian hunting practices were identified within the project area in the historic documentation, archaeological investigations, or by community consultants.

7.8 *Wahi pana* (Storied Places)

No storied places have been identified within or immediately adjacent to the present project area.

7.9 The Project Area within the Context of Pūlehu Nui Ahupua'a

The arrangement of a typical Hawaiian *ahupua'a* extended from the coastline to the upland forest areas. Depending on the location within this broad *makai* to *mauka* context, a wide variety of cultural practices and resources within the *ahupua'a* could be found. The central idea behind the *makai* to *mauka* configuration was to take advantage of the variety resources within that land division. Such resources and rights would include marine resources and fishing rights in the coastal area, arable lands for crop cultivation, as well as, water and timber rights in the planting zones, and valuable bird catching privileges at the higher elevations (Handy et al. 1991:48, see

also Section 4.1 Background Summary and Settlement Pattern). Based on the land commission award distribution in the *mauka* section of the *ahupua'a* and the dispute resolution in the matter of the western most boundary of the *ahupua'a*, it is apparent that Pūlehu Nui likely functioned as an *ahupua'a* in the typical traditional sense.

The current project area is situated along the southern edge of Waiakoa Gulch, in what is considered the transitional area between the *mauka* and *makai* settlement areas. Based on the settlement pattern in adjacent *ahupua'a* and the knowledge shared by those interviewed and consulted during the course of this study, it appears that project area may have sustained a small, seasonal population during traditional Hawaiian times. The waters of Waikoa Stream and Gulch, although only seasonally available, may have supported some freshwater aquatic resources as well as limited agriculture during the rain seasons. As a whole, however, the primary resources would have come from the abundant marine resources of the coastal reaches, as well as, agricultural crops from the *mauka* region of the *ahupua'a*.

Section 8 Summary and Recommendations

Reviewing the information provided in the historic literature, archaeological research and knowledge shared by the community contacts, a picture of the traditional landscape of Pūlehu Nui Ahupua'a and the present project area emerges. Native testimony and Land Commission Award records indicate that Pūlehu Nui Ahupua'a was well populated in both the upper elevations and coastal reaches where subsistence and traditional practices thrived on agricultural pursuits and marine resource exploitation respectively. The location of the project area within Pūlehu Nui Ahupua'a is situated within the transitional zone between the intensively used *mauka* and *makai* areas. Inventory surveys of portions of this transitional zone in adjacent *ahupua'a* have identified pre-contact remnants of dispersed, low-intensity, dry-land agricultural features, such as mounds and alignments, as well as temporary habitations (Chaffee et al. 1997; Donham 1990a; Miura 1982) indicating some traditional land use as described by individuals consulted for this study and summarized in Sections 7.2 and 7.9.

By the early 1900's, however, the lands of the central isthmus of Maui and lower elevations of Pūlehu Nui Ahupua'a, including the lands that comprise the project area, had been placed in sugar cultivation. The modifications made to the landscape in order to facilitate successful sugar cultivation would have effectively eradicated any surface evidence of traditional agriculture and/or habitation in the area. None of the community contacts queried for this assessment identified any cultural sites within the project area, or recalled anyone entering the project area for any traditional cultural practice. Based on the evidence gathered, there are presently no existing cultural practices occurring within the immediate vicinity of the project area or requiring transit through the current project area.

8.1 Project Recommendation

Based on the information gathered during this assessment, residential expansion into the lands comprising the project area will have minimal impact upon Native Hawaiian cultural resources within the immediate vicinity. It should be noted however, that there are both traditional cultural concerns as well as safety concerns regarding Waiakoa Gulch. Periodic flooding of the gulch was mentioned by Mrs. Kalanikau as a safety and drainage control concern. Additional concern was raised over the potential for increased run-off from the development into the gulch and the potential negative affect that any increased sedimentation and/or water run-off might have on the coastal and off-shore fishing grounds. The impacts of such run-off on the marine resources and fishing practices are unknown at the moment and may require further study or environmental monitoring. While the history of land modification within the current project area following Western contact is well documented, the probability for subsurface cultural deposits and human burials within the project area should not be underestimated. If the any significant cultural deposits or human skeletal remains are encountered, the State Historic Preservation Division (SHPD/DLNR) should be contacted in accordance with Section 6E-46.6 Hawaii Revised Statutes and Chapter 13-300.

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Appendix A Kama'aina Interviews

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Mr. Leonard Kimokeo Kapahulehua

Maui Coffee Works and Hale Pi'ilani Park
April 2006

Mr. Kapahulehua was interviewed on the morning of April 19, 2006 at the Maui Coffee Works coffee shop and continued at the Hale Pi'ilani Park overlooking the proposed project area. Text in italics indicate the interviewer, Tanya L. Lee-Greig of Cultural Surveys Hawai'i, Inc. (CSH), while plain text indicates Mr. Kapahulehua.

So the first thing is...if you can state your name?

My name is Leonard Kimokeo Kapahulehua, I'm a resident of several places but at the moment I'm a resident of South Maui Kīhei, at 938 South Kīhei Road, Apartment 281 and that's known as Village by the Sea.

Okay, and about when were you born?

I was born too long ago! I was born in the year 1947, December 15th , born on the island of Kaua'i.

What brought you to Maui and when?

My first trip to Maui was like in 1963, we came over here to *holoholo* (travel) with canoe racing ... Big Island. And we really came here to *holoholo* for go surfing! That was my first trip. My residence-ship took over here in 1970 and I came here to work for a company called Pascual Grayline which company (that) I worked for and that bought it out called Inter-Island Resorts. So I came here to work as a residence manager for what was called Pascual Grayline, now called Grayline Maui, owned by Inter-island Resorts. So transportation brought me here.

So did you move to South Maui....

No, I was in South Maui since 1980. I lived in Kahului.

Were you always involved with the Hawaiian Cultural Traditions of Maui?

I was more involved in the Hawaiian cultural things because of my paddling of the canoe yeah? My first canoe club on this island was in 1974 which was Na Kai Ewalu in Kahului. And then in 1980 I moved down here and paddled for Kīhei Canoe Club. I also paddled for ... the club at that time was called Malama 'Ula and now called Wailea Canoe Club. I paddled for them for about two years and then went back to Kīhei and have been with Kīhei Canoe Club since then. So...I think you might say the cultural connection came from the Hawaiian sport of canoeing and talking to the *kūpuna* (elders). I think canoeing...but I used to canoe already on Kaua'i. Numalu River we canoe, Kaua'i Canoe Racing Association, so you know, if we talk about culture, so I think it just started with all canoe paddling and things like that. But in South Maui, pretty active from the last, I should say, the last 15 years, I've been active in Maui, in South Maui with Hawaiian culture ... more Hawaiian culture development, yeah? You know that I'm the President of Ko'ie'ie Loko o I'a which is the fishpond and our associate 'Ao'ao o Nā Loko I'a O Maui. Took us ten years to get our permit. You know what I mean...I don't know if you've seen

the fishpond lately but we're well on our way. We just were down there this morning, the man who's building it is from Lahaina, from Kaua'ula. You know Ke'eamoku guys.

Oh...okay, yeah!

Ke'eamoku is building it with his men. And prior to that...you know where Kealia pond is at? We, in 1997-96, somewhere around there, almost ten years ago, we started to work with USDA Fish and Wildlife to revegetate the native plants in the park and also the sand dunes and everything else.

Over by the boardwalk?

Yeah.

What about the fishponds...you can kind of see them from the air? When you fly in?

Which fishponds? Kealia?

Kealia fishponds.

Kealia fishpond was basically, I think was the County of Maui, when Governor Lingle was in office ... with the county, when she was the mayor. They made an aquaculture farm. So that was an aquaculture farm, some kind of economic sustainable opportunity for people on Maui. That was a county deal.

Oh...okay..

Kealia's regular pond, you have there, I think it's just wetlands. It wasn't a managed inlet fishponds for the native Hawaiians.

It wasn't?

It wasn't. It was ... it was just wetlands. We don't have any walls. It doesn't show any ... I don't know any history about, I think it was called Kealia Ponds for that reason. When USDA Fish and Wildlife took over and called it so. But as far as a fishpond, as far as a brackish water fishpond or freshwater fishpond...I don't think there was a pond that was used. We have other ponds ... Kalepolepo Pond called Ko'ie'ie o Loko 'Ia, and right next is Ka'ono'ulu Pond and right next is Waiohuli Pond and in the South shore we have all the ponds that go down to Makena and La Perouse Bay. There wasn't a pond there (Kealia) that was really established for the *ali'i* (chiefly class).

Oh okay...so the traditional fishponds pretty much starts...

Starts from Ka'ono'ulu ... you know Ka'ono'ulu Road? Yeah from Ka'ono'ulu

So the area that we're looking at for this proposed project...what they're doing is they're gonna...

Where is the proposed project at?

You know where the Hale Pi'ilani Subdivision...and we'll go there in a little bit so you can see...

Hale Pi'ilani ... is that across the highway?

Across the ... mauka of the highway...

Mauka of the highway

And then there's the Lipoa ... not Lipoa ... the apartment buildings, Kihei Villages makai, so this new project area is mauka of the highway, right next to the Hale Pi'ilani..

Oh, okay the Trojan Seed Farm.

Yeah the Trojan Seed Farm.

Used to be Trojan Seed Farm, now it's Monsanto. So Monsanto moving out of there right? There going down, down here by Welakahao. I think most of the acreage is up here now.

So eventually, yeah...so A&B is expanding ... looking into expanding that residential area into the former corn land between...up to Waiakoa Gulch...that gulch that comes down and across by...

Waiakoa, I know where Waiakoa Road is, so you're talking from the industrial area..

Yeah...

The kind of like temporary industrial area, you know where the dog pound stay? The animal shelter...

Yeah...

There's the traffic light there...so is it from there all the way back down or more up?

No...no further down...like from the park...the top of Hale Pi'ilani Subdivision there's a park...so if you shoot a straight line across from that ... and down and maybe 80-acres up above that...from there all the way down so it's not a big expansion...like Maui Lani.

You've been to the pig farm over there in the back? You know where Hawaiian Cement is? From there?

No...maybe...we'll take a look and you'll have a better idea.

Yeah, we'll go and look.

Do you know of any traditions that might have been in the area? It's in that sort of scrubland area.

You know if there was any sort of traditional thing...it's all scraped off yeah? Cause it's been put into farm land yeah...for a while. There's none that we know of and I don't know if you guys found any archaeological ...

All historic stuff associated with plantation

Yeah, nothing from our time. No, we don't have no real plants up there except the wild plants. You know the *uhaloa*[24], the *'ilima*[25] tree, the *pōpolo*[26] maybe. There's no, if there was any traditional stuff, we would have been on it. Everything *mauka* (inland) of the highway, in that area, since the plantation went use so much sugar cane and everything...pretty much the machine would have wiped out everything. There's no really any cultural thing. The only cultural thing about the whole area would be the *ahupua'a* and meaning that the water would have come from *mauka* to *makai* (seaward). There's evidence about our water coming from *mauka* to *makai* so you talking the Waiakoa Stream is right there by Suda Store right?

Right, right...

Right? So that would be the only aspect that we would have you know, have any cultural significance. As an example, when that stream was flowing naturally, because of its connection to the ocean, we would have umm our *hihiwai*[27] you know the freshwater *'opihi* (limpet). We would have, what do they call that, the *'ōpae lōlō*[28]. You know what is *'ōpae lōlō*?

Is that the freshwater...

The *'ōpae lōlō* is *'ōpae* but the *'ōpae lōlō* is the freshwater one but transparent...we would have all of that down there.

Is that the ones that they find in the lo'i (taro patches) and in the auwai (irrigation ditches) and all that?

Yeah.

Oh okay...

So that's...but there's none of them around, none of them living. And if there was any sustainable villages on the way up, *hale* (homes), and all that they would have been close to the

[24] Or *hialoa*, *Waltheria indica*, common to dry zones. Used as a gargle for sore throat. (Abbot 1992: 101)

[25] *Sida fallax*. Used in *lei* making for personal adornment. (Abbott 1992: 127)

[26] Or glossy nightshade, *Solanum americanum*. Regarded as one of the visible embodiments of the god Kāne. Used for disorders of the respiratory tact, skin eruptions, and cuts.

[27] *Neritina granosa*, common in mid and lower stream sections (Department of Land and Natural Resources, Division of Aquatic Resources 2006)

[28] *Penaeus marginatus*, brackish-water shrimp or prawn (Pukui and Elbert 1986: 291)

Waiakoa Stream, but there's nothing. There's no remnants of umm for us to date...it's pretty much wiped out. The only evidence that we know that there were people living across it because of the fishpond that all the *pohaku* (stones) came from this Ka'ono'ulu Stream. We didn't get...the Waiakoa Stream wasn't big enough, and where our pond is, it's too far to carry the rock. So the Ka'ono'ulu Stream is right there by us, so we just went there right in the stream to get the rocks.

So they used the cobbles and rocks from Ka'ono'ulu and ...

Right, right. But there's no really any significant thing because you know you going from Great Mahele days which is 1841 right? To the take over of 1893, so once they start farming...everything that was in there. I couldn't give you any cultural usage or background ... but just what physically not shown but what would be in ancient times...there's no evidence of that. So it would be the same as the *ahupua'a* system. They could've grown *kalo* (taro) but this area wasn't, not necessarily for *kalo*, was more sweet potato. Where the fishpond is was a place called Halstead Building ... you know the house?

The Koa House?

The Koa House. That was pretty much bringing the sweet potato there, we were already in the commercial world, you know. I couldn't share with you anything or know of anything there (the project area) like I would be able to share with of places like Pu'u o Kali or Honua'ula or Kanaio or Kahikinui. We take, if we put them on a chart like all the villages that we have at Kahikinui and all the remnants of our villages. I wouldn't be able to place that over there (the project area) because it's totally wiped out.

It's been so long you think? What do you think? Just from your conversations maybe with the kūpuna of the area, of the Kīhei area, what do you think the population of the coastal part of Pūlehu Nui would have been like?

Fishing village. You get all the *'apa papa* (reef), fishing was the main thing for all our south shores. Being that it was calm and everything else down in that area. *Kūpuna* talked about all the fish that they could get in from area. Anything was more shoreline, versus up the mountain area. If anything was passing by you know. The base that was pretty secure. I think *kūpuna* connection before was Kaho'olawe and always Kaho'olawe was a part of the Maui Nui connection yeah? And Kaho'olawe was apart of the *ahupua'a* of Maui, you know it speaks about Kaho'olawe as a part of the *ahupua'a*. So if anything, *kūpuna* was addressing about the canoes going back and forth, the fishing boats going back and forth, and if anything it would be the other rest they talk about trading from one side of the island to the other side. You know sharing different resources, that was pretty much a flourishing thing for them on the south shore. So our south shores was pretty active. It's not so active now because we don't have all the resources we used to have. But we do have remnants out there (in the ocean) for *loli*[29] the *'ina*[30] the *ha'uke'uke*[31], the *wana*[32],

[29] *Holothuria* spp, sea slug or sea cucumber (Pukui and Elbert 1986:211)

[30] *Echinometa* spp, a small sea-urchin (Pukui and Elbert 1986:100)

[31] *Colobocentrotus atratus*, sea-urchin, teeth were used in medicine (Pukui andElbert 1986:60)

the *he'e*[33], this one of the best *he'e* grounds. So, just recently umm, about a year ago people started to find the *he'e* stones out in the channels, I guess we getting bigger storms so things are coming out. They found nine of them.

Wow!

You know what I mean? So this is a great *'ōpelu*[34] ground, *halalū*[35] ground, today is still a great *'ōpelu* ground if you know where fo' go get 'em. And it's really easy to do just go out there with your canoe, run your line, *palu* (chum) the water, and they come in and you get a hundred pound, hundred pound *'ōpelu.*

Still?

Yeah, still. So this is a good *'ō'io*[36] ground. I think one person you should interview is the Akina, because that's their fishing grounds. But I do know that this is a *halalū* ground, *'ōpelu* ground, *akule*[37] ground, *'ō'io* ground and *he'e*. Of course our south shores would have been the place where they lay their turtle eggs, there's evidence that the turtle used to come lay their eggs over there. Especially ... not only the green turtle, but the hawksbill turtle. So I think if anything that would be any cultural connection would be the usage of the south shore by our *kūpuna*. As you get further down this way...where's Pūlehu Iki...

I don't think ... does Pūlehu Iki come all the way down to the shore?

Anyway, right over here is Pu'u o Kali? Where umm, the fencing area for the native plants. Have you been over there yet?

No, no

Pu'u o Kali have *koai'a*[38] You know what is *koai'a?*

No..

Koai'a is a koa[39].

Oh, okay

So that's a *koa* tree that they use for the fishing. So at 1900' elevation or right around above *mauka*, the *Koai'a* used to grow here. So that was one of the trees that they used for the canoe,

[32] *Echinothrix diadema* or *Diadema paucispinum*, variety of sea-urchin (Pukui and Elbert 1986:382)

[33] *Polypus* sp., an octopus commonly known as squid (Pukui and Elbert 1986:63)

[34] *Decapterus pinnulatus* and *D. maruadsi*, a type of mackerel (Pukui and Elbert 1986:292)

[35] Young *akule* fish (see footnote 37)

[36] *Albula vulpes*, lady fish or bone fish (Pukui and Elbert 1986:280)

[37] *Trachurops crumenopthalmus*, big-yed or goggle-eyed scad fish (Pukui and Elbert 1986:16)

[38] *Acacia koaia*, like the *koa* only smaller, used for spears, fancy paddles, and tapa beater (Pukui and Elbert 1986:157)

[39] *Acacia koa*, largest of the native forest trees (Pukui and Elbert 1986:156)

for the fishhooks and everything else. So I think physical evidence of ... being available, on the property that you talking about, there's no physical evidence. Evidence of what was on the land before, is all what they have in the books or what the Hawaiians would have done then if there was nobody around. They had the freshwater coming from Waiakoa Stream so they had the prawns. So with that freshwater they could have possibly had *kalo* but there's no real evidence *kalo* was growing down this area it was always sweet potato. They have a sugarcane called Honolua so they could have had that sugarcane, that sugarcane is really small. But most of the food came from the shoreline, which would have been what I told you ... the *'opihi*, the *pūpū'awa*[40] the *limu kohu*[41], *limu 'ele'ele*[42]...all the different seaweeds would have been there. Now it's been taken over by the invasive plants. You know what I mean. So there style of living would have been really harsh because of the hot, hot weather. Windy, you know what I mean? And not having so much water all year-round, they had to get the water from either the stream, or up *mauka*. But as you get further on this side, (toward Ka'ono'ulu) then would get more rain. I ... that was pretty much would have been (harsh) in that area.

Do you think that the stream used to flow year-round? Or maybe just certain times of the year...that particular one (Waiakoa)?

I think all our streams flowed all-year round, Maui streams flowed all year-round. and it wouldn't have...I take it back, because there are some streams, like Ka'ono'ulu, never flowed all year-round. It could have stopped, but it wouldn't be that much long of a stop because this mountain (Haleakalā) can produce a couple hundred inches. Then we didn't have a diversion from all this place. So it could be, my thought is that it flowed all year round.

You want to take a drive up to the project area? I'll show it to you...

So this land really was flat and wasn't hilly (from all of the plantation related earth moving) So, and as you can see, it was dry...they would have been by Waiakoa Stream but it wasn't a big population area. A lot of the population you find evidence (in audible). The ocean would have been the area that they would be in. Without ... to my knowledge, I would think that the *ahupua'a* would be the same with every *ahupua'a*, the usage of the land would have been, the Hawaiians call it Ko'olau, the wet area, and this would be the Kona area, the dry area. So being that this was the dry area, you would be restricted to more ocean stuff than you would be on the land stuff.

On the mauka side?

On the *mauka* side, you know like Hana, Keanae, they just flourishing with *kalo* yeah? So I think the water would have come down, but the water was nothing like the rain water that they would have on that side. Plus our water is so far from Haleakala, it wasn't a stream that was huge yeah? So, you know, being from Kaua'i we get rivers yeah? Waimea River, Hanapepe River, Wailua

[40] *Drupa ricinas or Purpura aperta*, literally "bitter shell" (Pukui and Elbert 1986:35)

[41] *Asparagopsis taxiformis*, small seaweed with densely branched tan, pink, or dark red furry tops, also *limu koko* (Pukui and Elbert 1986:20)

[42] *Enteromorpha prolifera*, long, filamentous, green edible seaweed (Pukui and Elbert 1986:40)

River, Wainiha River, Hanalei, you know we get streams that *'o'opu*[43] and everything flourishes. I can just tell you that it would have been almost minimal stuff on the land, unless they were doing like we talking about sweet potato and things like that. So everything would have been down to the ocean and I don't think the village would have gone so far up (by the project area). Would have been close where they would have to bring the canoes back and forth, the fishing canoes. We have fishing *ko'a*, *heiau*, along the shoreline by the library yeah? By Kīhei library, but we don't have any *ko'a* down here. I'm pretty sure the wind was gnarly enough for them, not to really be a place that they want to spiritually connect with…close to Ma'alaea would be in the corner yeah? They would have been connected in that area. As we get closer to Ma'alaea would have been a big difference with the stream from Iao Valley. We don't have Iao Valley or we don't have rain from Makawao Rainforest that do that yeah?

So this is kind of like what the name implies? Pūlehu Nui. Just kind of a big

What's that?

The name of the ahupua'a is Pūlehu Nui?

Well you know Pūlehu, *lehu* is the shell is the shell you have in your deal (on the CSH logo, *Cypraea spp.*) the *pū* is the shell. So that name is really of the shoreline name yeah?

So it isn't...

It resembles the Pūlehu Nui is about more like the shoreline name yeah?

Oh, okay, as opposed to it being like how people have interpreted it before as it being kind of a dry, baked area?

It could be the same thing you know? I think that … well this is definitely dry and the ground is hard yeah?

So as far as impact, residential development like you said before.

No, they not gonna impact anything culturally. That we have here.

Here, in particular (present time)

Maybe before, this would have but not now. There's no, we don't have any *heiau* over here, we don't have no *ahu*, we don't have any village that's standing, if it was, it was before, not now. And the plants that we have is really more this way (wild, indicating the wild plants in fallow fields), because of the plantation, you know the only plants that are growing out here right now is wild plants that is not really their area yeah (introduced species)?

Oh, ok...

[43] General name for fish included in the families *Eleotidae*, *Goviidae*, and *Blennidae*. Some are near shore species and others are freshwater species (Pukui and Elbert 1986:290).

As an example, the next area we have *wiliwili*[44] forest yeah? We have no *wiliwili* forest here and the only other thing that we would have up here would be *naio*[45], but we don't have any *naio* here, *'akoko*[46], no more, no more *nehe*[47], *'āwikiwiki*[48], if we have, we have only wild ones with the machine. Look like the Filipino's making gardens back here (reference to the truck farming)

Yeah this is all truck crop area, they lease this particular spot for truck crops, I guess for small farmers and then Monsanto is down, and then up there is just pasture.

My interpretation was (the place name of Pūlehu Nui) the *lehu* shell that's out here, the big *lehu* shell that they use for the squid.

That's common in the waters just of this shoreline?

Common, common. Versus, dry-land but I'll get it to you. I don't think so. I wish there was, I wish there was a *heiau* (temples), I wish there was an *ahu* (shrines), I wish there was a village … and I'm pretty sure at one time was but as far as today, if there was an impact and as far as usage, we don't use it for sweet potato, we don't use it for *kalo* (taro), we don't use it for banana, we don't use it for breadfruit. It not that we didn't have the opportunity, there's evidence, get banana trees over there so must be from these Filipinos over here. I wish I had some canoe *hale* (homes) or *hale pe'a* (menstrual hut) or any *hale* to tell you about for an *ahupua'a.*

Thank you so much for taking time out of your day, for coming to talk to me...

'A'ole pilikia! (No problem!)

[44] *Erythrina sandwicensis*, a native leguminous tree (Pukui and Elbert 1986:385), charcoal from the branches were used for making paint for canoes, the branches themselves were used for the *'iako* or booms of the outrigger canoe (Abbott 1992: 81-82); seeds of the *wiliwili* were used for *lei* making (Abbott 1992:125); traditional Hawaiian long boards (*olo*) were also cut from lightwood *wiliwili* (Abbott 1992:129)

[45] *Myoporum sandwicense*, sandalwood tree (Pukui and Elbert 1986:259), large branches or trunks were used for *hale* (house) posts while smaller diameter branches were used for thatching poles (Abott 1992:67)

[46] *Euphorbia spp.*, an endemic shrub and tree chewed for debility (Pukui and Elbert 1986:15)

[47] *Lipochaeta spp*, native shrub and herb in the daisy family (Pukui and Elbert 1986:264)

[48] *Canavalia galeata*, vines were used for temporary fish traps (Abbott 1992:84, 139)

Mrs. Paula Kalanikau

Kenolio Road and Hale Pi'ilani Park
April 2006

Mrs. Kalanikau was interviewed on the morning of April 19, 2006 at both her home in Kīhei and at the Hale Pi'ilani Park overlooking the proposed project area. Text in italics indicate the interviewer, Tanya L. Lee-Greig of Cultural Surveys Hawai'i, Inc. (CSH), while plain text indicates Mrs. Kalanikau.

Tanya, my maiden name is … Paula Kapela Travis, Paula Kapela Kalanikau is my married name. I come from the Big Island, I'm from a small town called Kainehe and it's currently known by the more modern children as Kukaiau and it's in the Hamakua coast, very close, not to far from Waimea and Honoka'a. It's a beautiful country, we grew up there. What I miss most of all today is, as little children we have a farm lot there that was recently sold after being in the family for many years by great-grandparents. But no one want to go back there, *pohô* (lost) yeah? *Minamina* (too bad) though, everybody moved away, *mo 'opuna* don't want to go there. With the Hawaiian Homes available today everybody have their own life, they select to go. But the good thing about them and I always keep that in my memory and I share this with my kids, there was a pond there, and still is, we called it gulch but it's a river too. Like Keanae and Hana we used to go clean the pond, there was a pond there. Had the *'o'opu*[49] and *'ōpae*[50] and only when we finish our responsibilities with the farm and at home, that we get a privilege to go up there and swim and pick our *mea 'ai* (food) whether it's rice or whatever and *kaukau*[51] (eat) and then spend some time and come home. I miss that, I miss that, because it's not prevalent like before. The place, the river itself has been diverted by the plantation, it's been ruined by the plantation, there is no river there now. Well … if it is a river, it's a gulch where there's a lot of obstruction, rubbish from the plantation and it's to my dismay the DLNR really should be taking care of things like that, it's the *'āina* (land), it's the natural stuff there. The *'ōpae* the *'o'opu*, but as the years go by we lose that and I hope that doesn't happen to Hana and Keanae. But anyway, as I grew up, I attend my parents could not afford sending all seven of us to high school, so being the youngest of seven children, youngest of the girls because there was one boy below me … I went to Hilo High School and worked my way through high school. I lived in with a telephone company manager and his wife, Mr. and Mrs. Smiddy, and two kids and my expectation from them was to help with the household, help take care of the *kamali'i* (children), I prepared meals, help clean the house, part-time housekeeper for my keep there and at that time, that was in the '50's Tanya, I was paid $20 a month.

Oh my gosh $20! Was that decent then?

Umm yeah, I guess, it wasn't the best bust free room and board is better than nothing. Weekends off. You know amazing, even then in the '50's you become more frugal um well you become

[49] General name for fish included in the families *Eleotidae*, *Goviidae*, and *Blennidae*. Some are near shore species and others are freshwater species (Pukui and Elbert 1986:290).

[50] General name for shrimp (Pukui and Elbert 1986:291)

[51] "*Kaukau*" is the Hawaiian Creole or pidgin word meaning "food" or "to eat." The two theories on the origin of the word "kaukau" are the Hawaiian word for table, *pākaukau*, and the Chinese word for food, *chow chow*. (http://www.halauonahalia.com/index.htm)

careful in your spending and you just have to make do with what you have and that's what I did and most of the time, you know, you have to get your own toiletries, your personal things and your school supplies so I really had to watch my budget because it has to last the whole month. And sometimes I wouldn't take or even buy lunch, many of the time I wouldn't buy lunch because I thought I'm not gonna have money come the end of the month. Many times the manager and his wife would say "if you want to make a light lunch you can take with you or can have breakfast at home" so I use to try to have breakfast at home. But most of the time we in a hurry in the morning so no time to make lunch so if I did not make lunch or I couldn't buy lunch, you know I would go with out. You know it wasn't unusual for a lot of us because we used to go sit down under the coconut tree, and talk story, I guess like they say today "chew the fat" yeah? And before you know it time is over for recess, there's the two morning recess, one morning and one afternoon. The morning one is short, the afternoon was a little longer, half an hour maybe, then you kind of forget about being hungry so you just go in and do your homework, you study and it was all good. Then I finally got my degree in 1956 from Hilo High School you know known as the Vikings. The sad part about it is that both my parents couldn't make it to my graduation, you know, they didn't have car at that time. It was nice to see everybody's parents there but I was sad to not see my parents. But, you know you, come to the point where you accept things that cannot change and that's what I accepted, my parents not being able to come. But we celebrated over the weekend, I went home and they made little bit *mea 'ono* (dessert) and *mea' ai* (food) over there which was nice. Right after that, my girlfriend and I, Hattie Maluo, we're very close in high school. We thought maybe, were not going have jobs. To tell you the truth, back then – and I don't know if this is going to be slander but you can delete that if you want to….

Okay…(laughing)

But the *Kepane* (Japanese) used to have the jobs

Oh…I see..

The Portuguese, Filipino, Hawaiians, Chinese were all plantation workers and I think if you talk to most of the people then, in that area, the Oriental was the one who would get the cashier, the office work…and they very well maybe deserved it … I don't know. But my girlfriend told me "Hey, we go join the Service" and I told her "You gotta be crazy. You gotta be outta your mind girl!" She said "No! We go!" And I says "Oh country girl!" and I'm saying "I don't think so" and she said "Well what are we gonna do here?" I said "Well we go school" and she said "With what? Pennies?" and I said "Oh…I guess we go find a job" and she said "oh hello girl, hello I'm trying to tell you no more job! No more job over here! You like go work plantation? We going *hoe hana*[52] or something?" and that's really true! I think um, it was hard to get in the business it was hard to get in the department stores, so ahh that was probably our fault too, because even with our high school graduation degree, we were kind of afraid to even kind of apply? For fear that we would be denied. That's what basically it was. So I told her no. She told m "you go home and think about it" Yeah, I'll go home and think about it. So umm she said "what we gonna do at home? You don't want to stay at home not doing work you know you gotta help the family". I

[52] Field work using a hoe, usually to cut the weeds in the cane or pineapple field

said "I know that but I'll let you know" well it didn't take but a few days, a few days and she called. "Well have you decided?" and I said "no, you know i haven't even talked to my parents yet" because I was only seventeen, and she said "Well, I'm going" I said "are you serious?" she said, "yeah, I'm going" so I said "Oh, let me talk to my parents" and I was really kind of scared? I was almost certain that they were gonna say no but I took a chance. My mom didn't want me to go. My dad, he was a stronger person I guess, more broad minded and accepting, my dad is *hapa-haole* (Part white) Hawaiian. And he says, "Well baby, you do what you think is right for you" and I said "Dad I don't know if it's right, I'm so young and scared"

Tape paused

Daddy spoke to mom. They had a talk and they also had a disagreement because dad did want what he thought was best for me...there wasn't much job there." But mom thought maybe for a woman to go that was not a good thing ... she worries and that's true, I can understand that. So it took another day or two and finally, because I had to have consent because I was still considered a minor umm my umm dad signed it but not my mom. So my dad talked to her again and said "you know if she wants to do this, let her try it, I mean she won't know unless..." so reluctantly, my mom signed and then we both, my girlfriend and I went!

In the Service?

So we are veterans. We went into the Navy and right after school, we graduated in June, and in August we were gone. We went to Honolulu for processing and yeah, we were sent to San Diego and again we were processed there and both she and I ended up, because through our tests and our interests they put us both into the medical field. And so we went to Bainbridge Maryland for our thirteen weeks of training and that was intense training. It was really hard, and I mean we really worked hard to study because it had to do with all the medical parts, psychological parts, and we had to do that within that time frame. It was so hard, and we cried! We were homesick we were crying, crying, we want to come home but we thought "no we are not going to disappoint our parents" so when it came time after the training session, it was three months total, we received our graduation certificate in an awesome military graduation ceremony and again my parents couldn't come. We were separated after graduation. She went to Florida to the Airmen Section, and I went to Bethesda, Maryland, in the National Naval Medical Center there.

Wow! That's quite a ways from...

Wow yeah! It was a culture shock for both of us. For training we were already having a hard time, but we were trying to do the best we can with what we had...and it was a culture shock for us already because we came from the country going into this big city life all this different culture that we never was exposed to, and what we were brought up, it's so, it's so hard. So we got separated and by that time it was really hard for us but we were kind of overcoming our obstacles.

Bethesda Naval Medical Center was one of the best experiences I ever had. I was a Corpswave or hospitalman...worked as doctors and nurses. I've had seen presidents come and go in and the tower there because that's where they treat them and all the VIPs from Washington D.C. and having to take responsibility of a ward all by my self with the supervisor gone had been quite an experience. A scary experience! But a challenge and yet acceptable, you learn to be strong and

tough. Anyway, it was four years of that and after discharge, I went to Texas to visit my brother for about a year, he was in Texas. Then after that I took another six months vacation. While in Texas I worked in Thomas Spann Clinic and Hospital in Corpus Christi. And it was sort of like a vacation but get a job, you know, Get a job and after one year I decided to go to upstate New York and visit my Aunty and on the way to upstate New York. I went to go visit a dear friend of mine at Georgetown, Washington – Maryland area. So I had a visit with them then I left to go to ... New York, Rochester to visit my aunty up there for six months and that was a good experience for me too, we got to site-see and stuff. Eventually though I decided it's time to come home to see my family and I did. I came home and visit my parents and then all my friends were gone. My girlfriend was still gone, she had gotten married already and had a set of twins! And I'm still single! And I said to my parents, I was glad to see both of them and visit with them. It was kind of hard too though because all your old friends are gone, they're married or they move elsewhere. So finally I came here to Maui, where my sister lives, Mary and visit with her. And here on Maui, while visiting and contemplating whether I should go back to school here or back to the mainland. Ironically she had me introduced to this young man, and she did it in such a interesting way. She said "We're gonna go bowling, cause I'm trying to learn how to bowl." And I says "oh okay" and bowling was far from my mind but I went with her and then I was rather bored watching, I didn't know really what was going on I said "that's okay"... and her instructor was this Hawaiian guy little did I know that he was gonna be my husband. But she introduced me to him and you know I was like "Okay". Anyway we got to know each other better. We courted and got to see each other more. And then about a year and a half later we got married. We got married, umm, raised our family, our oldest one was born in Wailuku. Our second one Valerie, we were in the transition of moving from Wailuku to Kīhei because I was *hāpai* (pregnant) to Valerie, number two. And in '65 we moved down here, and then a year and a half later we have Vanessa down here. We were already in Kīhei. My husband was a painter from Endo Contractors for Valley Isle painting. He painted for several company here on Maui he was also a high school basketball official, referee for the high school basketball for 17 years and in the National Guard. But anyway we eventually moved down here, and then that was in '65.

Okay 1965....

This place where we have today, Tanya, was an inheritance from my father in law to my husband. This is what they call the Kalanikau Estate because it goes from here (by the mango tree) to the fence over the fence, the white fence, because *'ohana* lives within that property right next there. And then it goes in the back. So my husband said, "Better we go build down there" so the boys, the three boys, him and his two brothers, they got together and they divided this place share the cost and they divided into four and left the fourth piece for their mom. Which is *makai* (seaward) corner, and that's how we started to build our home here. And when we built here, was when I first came I told my husband, "It's like a forsaken place you know." I said "Are we gonna live here all by ourselves?" [laughing] I was kinda scared!

You more used to Keanae kine of environment? [laughing]

Yeah I mean it's country but I said...you know something Tanya? This was all *kiawes*[53] around us, all *kiawes,* across was all *kiawes,* over there all *kiawes,* ... there was nobody! And well I take it this, the corner on my left side here, the Souzas were living here yeah, the *mauka* side (toward the mountain) over there where there's the subdivision now, the Vares' were there, but the Vares' house was built far back where I don't see anybody except the yard. The Souza was fenced in with bushes where I they can't see me or I can't see them. And all of these houses never existed ... all *kiawe*, up until the (present Pi'ilani) highway, even *mauka.*

Oh my gosh!

But there was one house that was standing where, down the street down here only about half a block down, green house that belonged to the Padilla family. And further down, where Southpoint (Condominiums) is the beginning of Southpoint used to have a green house where the old-folks, the Moikeha family, Andrew lived in. And um. Maui Lu was in existence..

In '65?

As I can recall, yeah, and I believe it was pretty popular you know. But we were not, we were not you know, inclined to go for entertainment and stuff because you know our children were small so we were too busy trying to take care of the *'āina* and stuff. Okay so, I stayed home to take care of the children, never worked right away. My husband continued to be a painter and also work part-time so that we could, not only afford to pay for our home but to all the other necessities, the *mea 'ai* the car, gasoline, and maintain the car, cause we had only one car and my parents would come over from the Big Island and help us with the *'āina* you know *mahi 'ai* (farming) planting in the back and stuff.

So things would grow pretty good in this area? Garden vegetables and things like that?

Yeah! We had *'uala*, potato, sweet potato, we have *mai'a* so we have banana and Daddy had some herbal medicine back there which he told me not to remove and I still have only one, it's the *uhaloa*[54], but the rest, I think with the years gone, and with the different terrain, the weather, I had a hard time maintaining some of them. But there's still some on the *'āina* back home. And then in 1970, the kids were all in school except my baby, but my sister-in-law was here, with my brother living up Kīhei Heights. She babysat because she wasn't working, wasn't planning to work was only two of them. So I started working with John Ventura and Clara Ventura who was the postmaster then. The post office was right next to Suda (Store) and that post office was so small! It was so small ... one little window. I wish I had taken picture of that place, one little window and very little boxes you know to pick up your mail. You know what? I couldn't really tell you back in '65 what was the population back here in Kīhei, but I know that I worked part time for the post office as a delivery person. So I could do my delivery, if I left by 8:00 if I left by 8:30 or 9:00 I usually am back before or around noon ... because I would cover the whole Kīhei....There was no Mākena. We only knew Mākena by name but there were no houses, that I

[53] *Prosopis pallida,* invasive tree species native to Peru (Pukui and Elbert 1986:146)

[54] Or *hialoa, Waitheria indica*, common to dry zones. Used as a gargle for sore throat. (Abbot 1992: 101)

can recall, and if they had, they were having maybe P.O. Box. But I would only go as far as ... you know where Mana Kai? You familiar with this?

Yeah... is that down by Kama'ole?

Yeah Mana Kai and umm the hill...that hill what they call that? Mana Kai area was all *kiawe*'s. A family friend of ours bout it back then, Henry Texeira, then sold it later in the years.

Maui Hill?

Maui Hill. Right next to Maui Hill, the Miyamotos used to live in there, only a few houses in there. And that's it was my turn around point and come back. Back then, there was no Maui Hill.

Jeez! So you're saying from 9:00 to 12:00...

I'm back already. Down by Ilikai, there was a few apartments there, mama Kenolio and Charlie Young folk were down there. There was no Maui Vista. There was Kimo Ke Apartments, ... I don't know what they call it today to be honest with you because there's new owners, but you know where Walaka Street is? Uh right across, kinda past Charlie Young Bridge and you turn a left before Maui Vista? That's Kimo Ke apartments before, that brown two story. Used to have that, and no more buildings *mauka*, I used to do only *makai* side by Aunty Betty's and the little Ilikai over there ... Benson (?) ... and then I would move on down to Mana Kai and *mauka* side ... plenty *kiawes* over there yet. Not developed. No more ABC (store) Pacific Shores...well Pacific Shores just recently. Never had that, was all *kiawes*. So the delivery was fast. There was a few houses at Kīhei Heights, Manini Street, all that area. I think those was a little bit more heavier area, and probably some fo the apartments down by Charlie Young's, a few by Ilikai and Kimo Ke. The rest you cruise...and it was good Tanya, you know, I loved it! But I couldn't do it steady full-time because I still had one little one, so Mr. Ventura was so nice, he was our postmaster, and he lived down here in front. And the property is still there. The last I saw the place was up for sale. Whether they bought it or not...or sold it, I'm not sure but the son Glen Ventura and all them were all living over there. Mr. Ventura was quite a post-master, he used to understand I told him, "I cannot work full-time John., because I have one *keiki* (children) at home and you know...she comes first" so he says "oh! *a'ole pilikia* (no problem)! You come weekends then." So I used togo do Saturdays.

That's so nice they were able to work around your schedule, these days....

Yeah, work around my schedule, I guess they needed somebody and I felt like the little bitty help in the money would do good and as long as it doesn't rattle our household schedule and make it hard for my husband and the kids. So it went like that for a while, about a year, and I didn't want to leave....Mr. Ventura said "Why don't you stick with this part-time because no more full-time right now." "No...cannot, I cannot work weekdays with my kids and my youngest one was gonna go in '71, she was gonna start kindergarten. So the early part of '70, January I believe ... I got a call, I applied for the school health program in the school and I didn't think I would get in because there was over 228 applicants and I thought Oh forget that! Find something else, but to my dismay and surprise I was called for an interview and I got in. It was the school health project, but it was gonna be a pilot project for a year. So whether we really go into a permanent position, that was no guarantee. So ...I talked to my husband and said "Well, one year...and you

find out whether you like the job also in the mean-time and if it become a permanent position...you know you folks have first choice" And then you know my youngest one went to school. And you know, the hours was good because you know I don't start until 7:30 I *pau* (finished) 2:30 and the kids are in school from 7:30. So it worked real well and guess what, I worked right here at Kīhei Elementary School. I worked over there when they all started school, I was working in the school health program, in the school. Where the ambulance is now? (Kīhei Kenolio Center) Stored in that corner? That's where my office was. And I tell you now there was only about 200 students. Was so nice. Was so nice, I mean I couldn't ask for more. I used to peddle myself on the bycicle from here to school and the kids used to follow me. Or if they wanted to go ahead then they go. Because the traffic here was very minimal. The only cars that would pass here at the time ... oh well, I remember the bus as I started on with the bicycle, I would always pull on the side and get off the bike because the path is so narrow, this is wider now, but the path is so narrow I'm afraid the bus is gonna hit me or I'm gonna hit the bus so I used to pull on the side and get off the bike and wait till the bus pass, and then continue my way on to work. And the kids ask me now, they say "Wow, you used to peddle?" I said "Yes! Only right down here, it was good!" They say "All right!" and I says "yes that's good exercise." So I worked until they closed this school, because of the tsunami exposed area...

Oh! That's why they closed the school....

There was this danger yeah! So now they all had to move up to the New Kīhei School. I think it was in the 1980's. I can't tell exactly ... yeah but then I moved on with them, I went over there, work over there. Knew all the kids from the neighborhood, everybody's kids. The good thing about it, it reminds me it's like when we were growing up – you know – "You no listen, I going talk to your mommy, I going talk to your daddy about you" and you know they don't like that. I don't think that was ever a threat to them, and I think...it was not meant to be a threat, but because it was like an *'ohana* at that time it was good. Kids at that time was very respectful, very respectful, and that's gotta be from how they're brought up definitely. And I retired in 1997.

So just recently then?

Yeah from the school health program. Yeah, so I was in the Navy, then I came here got married, had a family, then worked at the post office for about a year...it was a good experience, I would encourage anybody whose interested in getting in go! I look back on it and i think "Wow! If I made a choice which one, I probably would have, if I was thinking about the money, would be there. The federal government. But I wasn't, I was thinking about the hours and what would be practical for me and my children, my family, and the money wasn't that much compared to the post office, but at that point it didn't matter. It wasn't the money thing, it was a family thing. Then I retired. I retired and I got more active in my church, which is the Mormon Church, and I do volunteer work. My husband and I were active when the kids were in school, with the PTSA and the community base program, and the parenting program, we were very busy. And then he is also the co-founder of the Kīhei Canoe Club and then I joined after my retirement, the Kīhei Community Association and then went to their meetings then became a board member for two years, I just resigned this past year. I'm also president of the Ladies Auxillary for the Veterans of Foreign Wars. So I think that's enough to keep me going...

That's a lot! I'm glad we were able to catch you at home today!

That's what everybody says! "My goodness! We were lucky you're home!" or they lucky they get me on the phone. Yeah I lost my husband back in 1986. I became a widow from when I was 48 years old, I never re-married. I raised our oldest *mo'opuna* well we *hānai* (fostered or adopeted) him, the oldest of ours from when he was one year old until he was 21 he went to fulfill his mission but I think in a way that was a blessing that he was with me when my *kāne* (husband) died, Moke died of cancer and it was quite suddenly, it really was quite suddenly. He was feeling sick and five months later he was gone. So I was left to raise my, our youngest, the one we had *hānai* and in a way that was good because he was good company for me, he kept me distracted from thoughts and he was a comfort for me. And I saw him through school, high school, everything, graduation ... through good and bad times we saw, I saw him through all that ... now I'm enjoying my grandchildren, one great-grand. I'm active in the relay for life...for cancer...I go to that, we form a team every year. In the Ladies Auxillary for the Veterans of Foreign Wars we have a program that we have for cancer aid and research and I spearhead that with the program through out the state. We do recycling bottles and cans and we donate that to the cancer and research. And both my husband and I was active in cancer drives and cancer advocating for many years. We did the heart also but we decided to take only one instead of two although we still support heart. I concentrate mostly on cancer because my family Tanya, my dad and my mom died of cancer, my husband died of cancer, I have a nephew who was a fireman here in Kīhei Fire Department, Walter, he was only 36, he died of cancer...I'm a cancer survivor of 20 years...so I have much to owe yeah? I have much to dedicate to that program, because I think we're doing great progress and I sure would like to see it conquered. So anyway, you know when we built our place over here, it was all good and then later on my mother-in-law built her, I think maybe 5 years later. One thing that I don't know will ever happen, with every change of mayors or council. There's always different changes, different goals. But I remember this that one year my parents, my in-laws were trying to build down there. They built they're house and everything and there was this low-lying area there little bit below their place they were trying to fill up with soil and rocks and they were told by the county then that they couldn't do that. But to my dismay as the years go by, things changes you know? And you wonder which is and which isn't right? Or they need to be more careful on how, I don't know with every administration we got different ideas, just different experts and what not. So they stopped doing that and then later on, kitty-corner of their property next property, here comes Isana, the big condominium there and then they fill up yeah? So now when there's flood, Kīhei floods a lot, you know about Kīhei, water comes down, and this has been for years, the water comes, go collects, goes down the road, down here and it floods back there and usually back up. And then the drainage like most flooded area, you know Hawai'i, the rain don't come but storms maybe winter time, or we call it winter time, rainy season time. And by that time the drain and everything plugs up yeah? There's nobody maintaining the place so everything backs up and does a lot of damages back there. Even on mine, I'm still working with the county on trying to address the front here because since they built up there, the topography of the road, I had mentioned to them when I went to the council meeting, my concern of the flow of water. How they going to do the topography will have a big impact of how the water is going to run correctly or wrong. I was opposing them building if they couldn't correct or remedy that. Well, like everything else they said it's gonna be done this way, this way, this way. Well when they had the rainstorm, the first rainstorm we had the water ran

over into my road, even worse, into the road over my place, even worse! And I've been trying to work with the county I still have documentation, I'm almost giving up, but I'm not! Umm, because my neighbor Mr. Souza also got flooded and worst the drain over there is not able to absorb all of the water that comes out from out there. I started what they called the Kenolio Ohana meeting. It's so funny because there is so many things that we want to have happen here and you know when you first start something, it takes just a few and as the word get's out I know the work with Kimokea and the youth center ... everybody has concerns here from speeding to traffic to drugs to the park there by the Kīhei Youth Center. The park grounds are bad there and they told me about that. So we were trying to get ... we had about two meetings and we had our county prosecutor attorney then well she was for the Kīhei area and she's no longer with us, I'm so disappointed because she's now in practice with the county instead we miss her ...Terri Shephard. And she used to come and give us ideas on how to start our meetings, who to invite and it was all good and the second meeting was small yet, then we did the speed check over here we got speed check equipment from Calvin Dang. We did that and that was slowing down traffic, people were seeing the speed limit....but we need it again and it's been a while since we got it because people are signing up for it, think he has only a limited amount. Anyway that and trying to work with the water run-off. Apparently, what I was told before, the Arizumi subdivision before, this was called an Arisumi subdivision on Koki. When they built, they never made the drain, which at that time wasn't required. So the water from there comes across, and the water from over there doesn't collect good and it spill over you know, come over here. And the water from there go across and some spill over, comes here. So I was really *huhū* (angry) with the county and said you folks should really do something about it and we had the county people come to that meeting and said "What can be done?" And I said well they have to see, check with the county and see in the budget what's allotted for Kīhei and da-da-da. But that's been many years and I said well, could we have something like a berm or something to be built here so the water diverts and go down where it's supposed to drain out and they said that's possible. But you know they don't follow up with you, you gotta really, really be on top of them and you can burn out to ...

That's the hard part, you have to always call, call....

Yeah and I'm not done calling this guy, bugging him. I haven't bugged him in a while, I think I gave him a long break only because I was side-tracked with so many other things but I haven't forgotten. But all I can tell you Tanya, Kīhei, Suda Store used to be there...oh! I worked over there part-time you know? The old Azeka Store was there too but is was small then with a gas pump outside too.

At Suda Store?

I used to be, I used to work at Suda Store little bit before I work with the post office. And that's why John (Ventura) asked me, because I was working as a cashier...and those days they no more automatic the kind you press the button and the gas come out...you gotta pump it...

Crank it?

You gotta crank it and then ....yeah! So that the was the fun part, we used to go out and crank the gas and then come in and it was a busy time those times. Construction people used to come

mornings and afternoons. I worked with the Suda family and that was a good experience and didn't have Kīhei Village. It was all *kiawe*.

All of this was kiawe? (at the intersection of Suda Store and Kenolio Road)

Yeah...never had the youth center and the Kīhei Canoe Club was all *kiawes* over there, they cleaned it up, cleaned up the area so that they could put whatever canoes they think they were gonna get (laughing) they didn't have anything then! They had so much positive, I mean I was so proud of them! They so determined! They gonna use the corner, get the okay from the county. Clean it, they clean it real good, they left the big *kiawe* tree for shade and umm...the *hau*[55] for shade and then they *kālua* (cook in an *imu* or underground oven) a pig over there on the ground, and bless the ground which was really nice. Such a good turn out. And umm they went out and raised money to get a canoe and we finally got one from Honolulu, we all, everybody so happy! This was in '73. Only one canoe Tanya, and they were tickled pink! We had about 300 people signed up and only one canoe! And we thought, how is this gonna happen? So everybody had to take turns in the morning the young men, the ladies they would come like 6:00 if they want to come the weekdays. Paddle, Paddle. The teenagers and the ... and anyway the *keiki* would come after school, after their homework, but you know what? There was such a camaraderie there, the *'ohana* was so strong I look back and with great happiness because the kids at that time did not have very much to do here. Didn't have much recreation because no more, now no more the park there yet. I think they were just starting to develop down there, the basketball/tennis court...starting plans for development. They had a small one, they had a small one and the kids were kinda bored! So we thought this is a good thing, my husband thought this is a good thing, and it was a good thing. I mean only one canoe with about 300 people but they worked it out, they were ... the young men and women...fine! And all go, the young adults and the men go in the morning if they can, they had certain time like 6:00-7:00 or whatever and then the afternoon the *keikis* come with the coach. Dutchie Hikino also help my husband, Dutchie Kino was one of the best paddlers that I have known, come here to help from Honolulu coach the club, the kids and everyone. He was a good coach. And it grew, it grew. The family came together, they donated their time, there was so much excitement they wanted to make pot-luck the other would make *leis* for when they come in, give them *leis*...it was strong. Then before you know it they got another canoe, then they got one donated from Darvon Leis and his wife Betty. And Betty and Darvon's two sons used to paddle for the canoe club, and those two, the mama and papa used to always come to their event. I look back ...and I think "Some wonderful, wonderful times we've had there at that *hale*." The comeraderie was good, the *ohana* feeling was good, all good, all good! Good feelings Tanya, *maika'i* (good). I want to see that today.

Is it not like that so much anymore?

Too much *hukihuki* (quarreling), not satisified. And as I talk to my other canoe paddlers from the other clubs, they have little bit of that but...unless you understand the way of the culture hard, hard. You cannot come, make changes to your way...you have to have lots of respect yeah? And when you feel that you can do better than others, or you can do better...you want to make your own rules or disrespect the way you were taught of your *ama* (outrigger), your canoe. Everything

[55] *Hibiscus tiliaceus* (Pukui and Elbert 1986:60)

about your canoe is respect you know first, respect the culture. But when you have an infiltration of different minds and ideas, sometimes some of it is good, sometimes others is not. It brings, it tears apart the *'ohana*. And maybe you don't or maybe you do understand what I am saying, but I wish I could see them come back together you know? Every year when I go, last year never have because they have new schedule now...but when I go for my husbands regatta, I feel a strong spirit, I feel my husband there and I just think that I wish you know a lot of the clubs are *pono* (right, behave correctly) but there are some that needs to have *ho'oponoopono* (intervention to things *pono*) because the idea is not just winning, the idea you think of your culture first you respect second, next to culture, and be humble. No need pride, no need that. As I talk to Kimokea, we share a lot...you know, he's a good man.

So back in 1965, 1970's were the people of this area of Kīhei, were they continuing with the traditional Hawaiian practices maybe from long time ago...do you recall what the common...

Umm when I came here in '65 I didn't know too many people except the Akina's, yeah the Akina's were practicing the fishing traditions and charcoal. Do you remember before, that's why now...no more *kiawes no ho'i* but before Francis, brother Francis, he was working the charcoal business before. His children are still living here in Kīhei, he had the charcoal business. He used to take care of all the charcoal and sell it of course....

[*end of space on recorder. Mrs. Kalanikau went on to describe how every now and then the fishermen would get together and* hukilau *(or do communal fishing with* lau *or ropes) in front of Suda Store, as well as describe the mango farms of the Hashimoto family and the cucumber and tomato farm of the Managdan family in the area of the Tesoro gas station off of Pi'ilani Highway an Ohukai Road. During a brief field visit to the project area Ms. Kalanikau remarked on how the soil looked like it was a good place for agriculture*]

09/10514

For: Mayor's Office
ORDINANCE NO. 3682
Effective Date: September 21, 2009

RECEIVED
2009 SEP 22 PM 2:07
OFFICE OF THE MAYOR

ORDINANCE NO. 3682

BILL NO. 69 (2009)

Env Mgmt	
Finance	
Fire	
Hsg&HC	
Liquor	
Parks&R	
Personnel	
Planning	✓
Police	
Prosectrs	
Public W	
Transptn	
Water S	
Mgmt.	
Mayor	
Budget	

A BILL FOR AN ORDINANCE TO AMEND THE STATE LAND USE DISTRICT CLASSIFICATION FROM AGRICULTURAL TO URBAN FOR PROPERTY SITUATED AT KIHEI, MAUI, HAWAII

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Pursuant to Chapter 205-3.1, Hawaii Revised Statutes, and Chapter 19.68, Maui County Code, the State Land Use District classification is reclassified from the Agricultural District to the Urban District for that certain parcel of land located at Kihei, Maui, Hawaii, and identified for real property tax purposes by Tax Map Key No. (2)3-8-004:028, comprising approximately 9.289 acres, and more particularly described in Exhibit "A", attached hereto and made a part hereof, and in District Boundary Amendment Map No. DB-517, which is on file in the Office of the County Clerk of the County of Maui, and by reference made a part hereof.

SECTION 2. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM
AND LEGALITY:

JAMES A. GIROUX
Deputy Corporation Counsel
County of Maui
S:\CLERICAL\LJN\ORD\Dba\38004028dba.wpd

'09 OCT -9 P3:05

County Of Maui
Planning Department

	FYI	COMMENTS	SEE ME	ASSIGN	FILE	DRAFT RESPONSE
DIRECTOR						
DEPUTY DIRECTOR						
CURRENT	✓					
ZAED	✓					
LONG RANGE	✓					
DEPT. SECRETARY						
Shayne Ono						
Ordinance Book						

Due Date:
By: CZY Date: 10/6/09

EXHIBIT "A"

Description of Property

All of that certain parcel of land being LOT 134-A of the Hale Piilani Subdivision (LUCA File No. 3.1431) being a portion of Lot 134 of the Hale Piilani Subdivision Phase I (File Plan 1831) and being also a portion of Land Patent 8140, Land Commission Award 5230 to Keaweamahi (Certificate of Boundaries Number 47), situate at Pulehunui, Waiakoa, Kula (Kihei), Maui, Hawaii, TMK: (II) 3-8-04:028, and more particularly described as follows:

Beginning at a ½" pipe (set) at the southeasterly corner of this parcel of land, a point on the southerly boundary of a remaining portion of Land Patent 8140, Land Commission Award 5230 to Keaweamahi (Certificate of Boundaries Number 47) (TMK: (II) 3-8-04:022) and a point on the northerly boundary of Grant 9325 Apana 4 to Haleakala Ranch Company (TMK: (II) 2-2-02:016), the coordinates of said point of beginning referred to Government Survey Triangulation Station "Pu'u-O-Kali" being 17,754.80 feet north and 19,325.28 feet west and running by azimuths measured clockwise from true south; thence,

1.	92°	58'	30"	1,470.07	feet along Grant 9325, Apana 4 to Haleakala Ranch Company (TMK: (II) 2-2-02:016), and along Lots 32, 31, 30, 29, 28, and 109 of the Ohukai Subdivision (File Plan 1922) to a ½" pipe (set); thence,
2.	177°	12'		362.47	feet along Lot A of the Makai Heights Subdivision (File Plan 952) and along Lots 138, 139, 140, and 141 of the Hale Piilani Subdivision Phase II (File Plan 1894) to a "mag" nail (set); thence,
3.	261°	40'		309.99	feet along Lot 134-B of the Hale Piilani Subdivision (LUCA File No. 3.1431) (TMK: (II) 3-8-04:031) to a ¾" pipe (found); thence,
4.	242°	49'		80.41	feet along the same to a ¾" pipe (found); thence,
5.	295°	09'		1,223.54	feet along a remaining portion of Land Patent 8140, Land Commission Award 5230 to Keaweamahi (Certificate of Boundaries Number 47) (TMK: (II) 3-8-04:022) to the point of beginning and containing an area of 9.289 acres.

Being a portion of the premises conveyed by SILVERSWORD LIMITED PARTNERSHIP, a Hawaii limited partnership, to NITTO INTERNATIONAL U.S.A. CO., LTD., a California

corporation, by Limited Warranty Deed, recorded June 29, 2000 in the Bureau of Conveyances of the State of Hawaii as Document No. 2000-089904.

SUBJECT, HOWEVER, TO THE FOLLOWING:

1. Title to all mineral and metallic mines reserved to the State of Hawaii.

2. Grant of Easement for a non-exclusive easement to construct, etc., a water pipe line or pipe lines, 15 feet wide, area 11,508 square feet over, under, across and through the land herein described, in favor of the County of Maui, through its Department of Water Supply, recorded in said Bureau on August 14, 1979 in Liber 14427, Page 295.

3. Grant of Easement for road and utility purposes, in favor of the County of Maui, a political subdivision of the State of Hawaii, recorded in said Bureau on July 28, 1992 as Document No. 92-121613.

4. The terms and provisions contained in the Elevation Agreement (Water Service) recorded in said Bureau on November 26, 1993 as Document No. 93-195891.

5. Any facts, rights, interests, or claims which may exist or arise by reason of the following facts disclosed by an ALTA Map dated March 7, 2005, revised March 15, 2005, prepared by Randall Sherman, Licensed Professional Land Surveyor, Certificate No. LS4187:

(a) An encroachment (approximately 3.6' x 1/4' = approximately 3 sq. ft.) comprised of a chainlink fence appurtenant to an adjoiner (unknown owner) located at the most southwest corner of Lot 134-A.

6. The terms and provisions contained in the Subdivision Agreement (Three Lots or Less) recorded in said Bureau on December 31, 1991 as Document No. 91-183625.

7. The terms and provisions contained in the Subdivision Agreement (Large Lots) recorded in said Bureau on January 14, 1992 as Document No. 92-005547.

8. The terms and provisions contained in the Modification of Subdivision Requirements Agreement recorded in said Bureau on June 20, 1992 as Document No. 92-103161.

END OF EXHIBIT A

WE HEREBY CERTIFY that the foregoing BILL NO. 69 (2009)

1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held on the 18th day of September, 2009, by the following vote:

Dennis A. MATEO Chair	Michael J. MOLINA Vice-Chair	Gladys C. BAISA	Jo Anne JOHNSON	Solomon P. KAHO`OHALAHALA	William J. MEDEIROS	Wayne K. NISHIKI	Joseph PONTANILLA	Michael P. VICTORINO
Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 18th day of September, 2009.

DATED AT WAILUKU, MAUI, HAWAII, this 18th day of September, 2009.

DENNIS A. MATEO, CHAIR
Council of the County of Maui

ROY T. HIRAGA, COUNTY CLERK
County of Maui

RECEIVED
2009 SEP 18 PM 3:35
OFFICE OF THE MAYOR

THE FOREGOING BILL IS HEREBY APPROVED THIS 21st DAY OF SEPTEMBER, 2009.

CHARMAINE TAVARES, MAYOR
County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL by the Mayor of the County of Maui, the said BILL was designated as ORDINANCE NO. 3682 of the County of Maui, State of Hawaii.

ROY T. HIRAGA, COUNTY CLERK
County of Maui

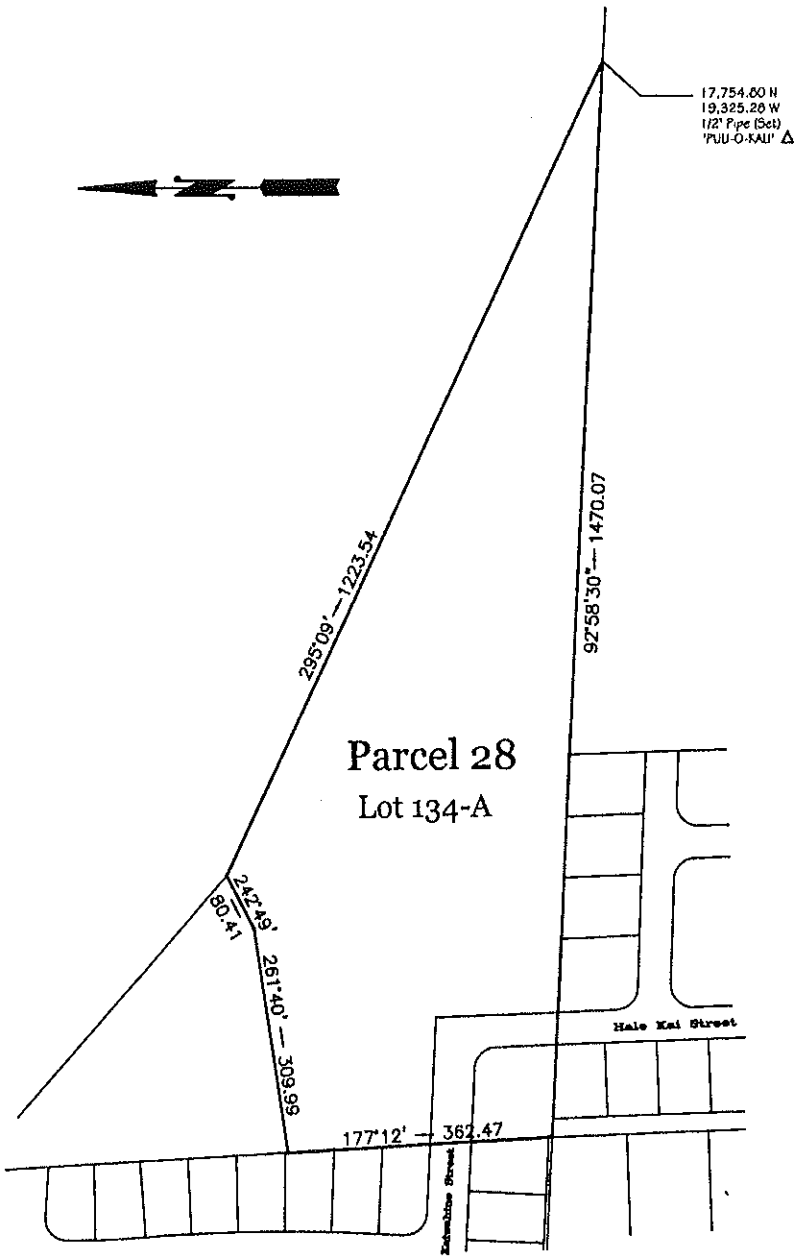
Passed First Reading on August 25, 2009.
Effective date of Ordinance September 21, 2009.

RECEIVED
2009 SEP 21 AM 11:37
OFFICE OF THE
COUNTY CLERK

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. 3682, the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.

Dated at Wailuku, Hawaii, on

County Clerk, County of Maui



TAX MAP KEY
2ND DIV 3-8-004:028

AREA
9.289 ACRES

LAND USE DISTRICT BOUNDARY

AMENDMENT MAP
NO. DB- 517

KIHEI, MAUI, HAWAII
FROM AGRICULTURAL TO URBAN

APPROVED _____ COUNTY CLERK DATE	PUBLIC HEARING: JUNE 10, 2008 ADOPTED - COUNCIL: ADOPTED - MAYOR: ORDINANCE:
APPROVED Jeffrey S. Hunt 9-2-08 PLANNING DIRECTOR DATE	DATE: SCALE: 1" = 200'

OFFICE OF THE COUNTY CLERK
200 South High Street, Wailuku, Maui, Hawaii 96793

DB - 517

For: Mayor's Office
ORDINANCE NO. 3683
Effective Date: September 21, 2009

RECEIVED
2009 SEP 22 PM 2:08
OFFICE OF THE MAYOR

ORDINANCE NO. 3683

BILL NO. 70 (2009)

Env Mgmt	
Finance	✓
Fire	
Hsg&HC	✓
Liquor	
Parks&R	
Personnel	
Planning	✓
Police	
Prosectrs	
Public W	✓
Transptn	
Water S	✓
Mgmt.	
Mayor	
Budget	

A BILL FOR AN ORDINANCE TO CHANGE ZONING FROM AGRICULTURAL DISTRICT TO R-1 RESIDENTIAL DISTRICT (CONDITIONAL ZONING) FOR PROPERTY SITUATED AT KIHEI, MAUI, HAWAII

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Pursuant to Chapters 19.08 and 19.510, Maui County Code, a change in zoning from Agricultural District to R-1 Residential District (Conditional Zoning) is hereby granted for that certain parcel of land situated at Kihei, Maui, Hawaii, and identified for real property tax purposes by Tax Map Key Number (2)3-8-004:028, comprising approximately 9.289 acres, and more particularly described in Exhibit "A", attached hereto and made a part hereof, and in Land Zoning Map No. L-5110, which is on file at the Office of the County Clerk of the County of Maui, and by reference made a part hereof.

SECTION 2. Pursuant to Section 19.510.050, Maui County Code, the zoning granted by this ordinance is subject to the conditions set forth in Exhibit "B", attached hereto and made a part hereof, and the Unilateral Agreement and Declaration for Conditional Zoning, attached hereto and made a part hereof as Exhibit "C".

SECTION 3. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM
AND LEGALITY

JAMES A. GIROUX
Deputy Corporation Counsel
County of Maui
S:\CLERICAL\LJN\ORD\CIZ\38004028ciz.wpd

DEPT OF PLANNING
2009 OCT -9 P3:05

EXHIBIT "A"

Description of Property

All of that certain parcel of land being LOT 134-A of the Hale Piilani Subdivision (LUCA File No. 3.1431) being a portion of Lot 134 of the Hale Piilani Subdivision Phase I (File Plan 1831) and being also a portion of Land Patent 8140, Land Commission Award 5230 to Keaweamahi (Certificate of Boundaries Number 47), situate at Pulehunui, Waiakoa, Kula (Kihei), Maui, Hawaii, TMK: (II) 3-8-04:028, and more particularly described as follows:

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1.	92°	58'	30"	1,470.07	feet along Grant 9325, Apana 4 to Haleakala Ranch Company (TMK: (II) 2-2-02:016), and along Lots 32, 31, 30, 29, 28, and 109 of the Ohukai Subdivision (File Plan 1922) to a ½" pipe (set); thence,
2.	177°	12'		362.47	feet along Lot A of the Makai Heights Subdivision (File Plan 952) and along Lots 138, 139, 140, and 141 of the Hale Piilani Subdivision Phase II (File Plan 1894) to a "mag" nail (set); thence,
3.	261°	40'		309.99	feet along Lot 134-B of the Hale Piilani Subdivision (LUCA File No. 3.1431) (TMK: (II) 3-8-04:031) to a ¾" pipe (found); thence,
4.	242°	49'		80.41	feet along the same to a ¾" pipe (found); thence,
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Being a portion of the premises conveyed by SILVERSWORD LIMITED PARTNERSHIP, a Hawaii limited partnership, to NITTO INTERNATIONAL U.S.A. CO., LTD., a California

corporation, by Limited Warranty Deed, recorded June 29, 2000 in the Bureau of Conveyances of the State of Hawaii as Document No. 2000-089904.

SUBJECT, HOWEVER, TO THE FOLLOWING:

1. Title to all mineral and metallic mines reserved to the State of Hawaii.

2. Grant of Easement for a non-exclusive easement to construct, etc., a water pipe line or pipe lines, 15 feet wide, area 11,508 square feet over, under, across and through the land herein described, in favor of the County of Maui, through its Department of Water Supply, recorded in said Bureau on August 14, 1979 in Liber 14427, Page 295.

3. Grant of Easement for road and utility purposes, in favor of the County of Maui, a political subdivision of the State of Hawaii, recorded in said Bureau on July 28, 1992 as Document No. 92-121613.

4. The terms and provisions contained in the Elevation Agreement (Water Service) recorded in said Bureau on November 26, 1993 as Document No. 93-195891.

5. Any facts, rights, interests, or claims which may exist or arise by reason of the following facts disclosed by an ALTA Map dated March 7, 2005, revised March 15, 2005, prepared by Randall Sherman, Licensed Professional Land Surveyor, Certificate No. LS4187:

(a) An encroachment (approximately 3.6' x 1/4' = approximately 3 sq. ft.) comprised of a chainlink fence appurtenant to an adjoiner (unknown owner) located at the most southwest corner of Lot 134-A.

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7. The terms and provisions contained in the Subdivision Agreement (Large Lots) recorded in said Bureau on January 14, 1992 as Document No. 92-005547.

8. The terms and provisions contained in the Modification of Subdivision Requirements Agreement recorded in said Bureau on June 20, 1992 as Document No. 92-103161.

END OF EXHIBIT A

EXHIBIT "B"

CONDITIONS OF ZONING

1. That once the property has received final subdivision approval, no accessory dwelling units shall be allowed.

2. That Royal Main Properties, LLC shall make a contribution to the County for traffic improvements in an amount equal to $2,000 per lot. The contribution shall be paid to the County prior to final subdivision approval. Upon adoption of a traffic impact fee ordinance, Royal Main Properties, LLC shall comply with the ordinance in lieu of this voluntary contribution. Should a traffic impact fee ordinance be adopted prior to the collection of this contribution, the applicable amount shall be the greater of the two.

3. That Royal Main Properties, LLC shall be required to develop and implement a Traffic Demand Management measure to reduce or mitigate impacts to the satisfaction of the Department of Public Works.

4. That Royal Main Properties, LLC shall minimize potential impact to the air quality monitoring station to the satisfaction of the State Department of Health.

5. That Royal Main Properties, LLC shall provide improvements to the Central Maui Water System to the satisfaction of the Department of Water Supply.

6. That Royal Main Properties, LLC shall provide annual status reports to the Director of Housing and Human Concerns and the Council, commencing within one year of the effective date of this ordinance, and ending five years after the last lot is sold. The status reports shall include: (a) the number of residential workforce housing lots and market-priced lots completed; (b) the number of residential workforce housing lots and market-priced lots sold; (c) the sales price for each residential workforce housing lot; (d) the income bracket for each purchaser of a residential workforce housing lot; and (e) confirmation that all residential workforce housing lots continue to be held in perpetuity.

THE ORIGINAL OF THE DOCUMENT RECORDED AS FOLLOWS:
STATE OF HAWAII
BUREAU OF CONVEYANCES
DATE Doc 2009-133200
DOCUMEN AUG 31, 2009 08:02 AM

LAND COURT SYSTEM | REGULAR SYSTEM

Return By Mail (x) Pickup ( ): To:
Office of the County Clerk
County of Maui
200 South High Street
Wailuku, Hawai`i 96793

Total Number of Pages: 7

Affects Tax Map Key (Maui) (II) 3-8-04:028

UNILATERAL AGREEMENT AND DECLARATION FOR CONDITIONAL ZONING

THIS INDENTURE, made this 12TH day of August, 2009, by ROYAL MAIN PROPERTIES, LLC, a Hawaii limited liability company, By MAUI EXOTICS CORPORATION, a Hawai`i corporation, its Managing Member By John R. Sindoni its President, whose principal place of business is located in Kihei, Maui, Hawai`i, and whose mailing address is PO Box 746, Kihei, Hawai`i 96753, hereinafter referred to as "DECLARANT", and who is the owner of that certain parcel located at Kihei, Maui, Hawai`i, comprised of approximately 9.289 acres, and identified for real property tax purposes by Tax Map Key No(s). (II) 3-8-04:028, hereinafter referred to as "PARCEL" (or "PROPERTY").

WITNESSETH:

WHEREAS, the Council of the County of Maui, State of Hawai`i, hereinafter referred to as "Council", is considering the establishment of zoning for the Parcel, comprised of approximately 9.289 acres which is more particularly described in Exhibit "1", which is attached hereto and made a part hereof, and which is more particularly identified in Land Zoning Map No. L-5110, which is on file in the Office of the County Clerk of the County of Maui; and

WHEREAS, the Council recommends through its Land Use Committee,

Committee Report No. L-5110, that said establishment of zoning be approved for passage on first reading subject to certain conditions pursuant to Section 19.510.050, Maui County Code; and

WHEREAS, the Declarant has agreed to execute this instrument pursuant to the conditional zoning provisions of Section 19.510.050, Maui County Code;

NOW, THEREFORE, the Declarant makes the following Declaration:

1. That this Declaration is made pursuant to the provisions of Section 19.510.050, Maui County Code relating to conditional zoning;

2. That until written release by the County of Maui, the Parcel, and all parts thereof, is and shall be held subject to the covenants, conditions and restrictions which shall be effective as to and shall run with the land as to the Parcel, from and after the recording of this Declaration with the Bureau of Conveyances or the Land Court of the State of Hawai`i, without the execution, delivery or recordation of any further deed, instrument, document, agreement, declaration, covenant or the like with respect thereto by the Declarant, the County of Maui, or any heir, devisee, executor, administrator, personal representative, successor, and assign; that the acquisition of any right, title or interest in or with respect to the Parcel by any person or persons, entity or entities, whomsoever, shall be deemed to constitute the acceptance of all of the covenants, conditions and restrictions of this Declaration by such person or persons, entity or entities; and that upon any transfer of any right, title or interest in or with respect to the Parcel the same shall be subject to, and the transferee shall assume and be bound and obligated to observe and perform all of the covenants, conditions and restrictions of this Declaration;

3. That this Declaration and all of the covenants, conditions and restrictions contained herein shall continue to be effective as to and run with the land in perpetuity, or until the Declarant notifies the appropriate County Department that any of said covenants, conditions and restrictions are satisfied by the Declarant, and the appropriate County Department verifies the satisfaction and provides a written release of the covenant, condition or restriction;

4. That the term "Declarant" and any pronoun in reference thereto, wherever used herein, shall be construed to mean the singular or the plural, the masculine or the feminine, or the neuter, and vice versa, and shall include any corporation, and shall be held to mean and include the "Declarant", the Declarant's heirs, devisees, executors, administrators, personal representatives, successors, and assigns;

5. That the Declaration shall become fully effective on the effective date of the zoning ordinance approving the establishment of R-1 Residential District

zoning and this Declaration shall be recorded in the Bureau of Conveyances or Land Court of the State of Hawai`i;

6. That the Declarant agrees to develop said Parcel in conformance with the conditions set forth in Exhibit "2", which is attached hereto and made a part hereof and which shall be made a part of the zoning ordinance;

7. That the conditions imposed are reasonable and rationally relate to the objective of preserving the public health, safety and general welfare and such conditions fulfill the need for the public service demands created by the proposed use;

AND IT IS EXPRESSLY UNDERSTOOD AND AGREED that until released in writing by the County, the conditions imposed in this Declaration shall run with the land identified hereinabove and shall bind and constitute notice to all subsequent lessees, grantees, assignees, mortgagees, lienors and any other persons who claim an interest in said land, and the County of Maui shall have the right to enforce this Declaration by appropriate action at law or suit in equity against all such persons, provided that the Declarant or its successors and assigns may at any time file a petition for the removal of the conditions and terminate this Unilateral Agreement, such petition to be processed in the same manner as petitions for change in zoning.

IN WITNESS WHEREOF, the undersigned has executed this Declaration the day and year first above written.

DECLARANT:

ROYAL MAIN PROPERTIES, LLC, a Hawaii limited liability company,

By: MAUI EXOTICS CORPORATION, a Hawai`i corporation, its Managing Member

By: _____
John R. Sindoni
Its President

APPROVED AS TO FORM AND LEGALITY:

_____
JAMES A. GIROUX
Deputy Corporation Counsel

County of Maui

STATE OF HAWAI`I)
) SS.
COUNTY OF MAUI)

On this 12th day of AUGUST, 2009, before me personally appeared John R. Sindoni, to me personally known who being by me duly sworn, did say that he is the President of MAUI EXOTICS CORPORATION, a Hawai`i corporation, Managing Member of Royal Main Properties, LLC, a Hawaii limited liability company (and that said instrument was signed and sealed on behalf of said organization/corporation) or (by authority of its Board of Directors, and the said Office acknowledged said instrument to be the free act and deed of said organization/corporation.)

LORELEI BROWN NOTARY PUBLIC No. 88-439 STATE OF HAWAII

Notary Public, State of Hawai`i
My Commission expires: 4/30/10

Document Date: 8/12/09 # Pages: 7
Notary Name: LORELEI BROWN 2nd Circuit
Doc. Description: Unilateral Agreement + Declaration for Conditional Zoning
Notary Signature 8/12/09 Date

LORELEI BROWN NOTARY PUBLIC No. 88-439 STATE OF HAWAII

EXHIBIT "1"

Description of Property

All of that certain parcel of land being LOT 134-A of the Hale Piilani Subdivision (LUCA File No. 3.1431) being a portion of Lot 134 of the Hale Piilani Subdivision Phase I (File Plan 1831) and being also a portion of Land Patent 8140, Land Commission Award 5230 to Keaweamahi (Certificate of Boundaries Number 47), situate at Pulehunui, Waiakoa, Kula (Kihei), Maui, Hawaii, TMK: (II) 3-8-04:028, and more particularly described as follows:

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4. The terms and provisions contained in the Elevation Agreement (Water Service) recorded in said Bureau on November 26, 1993 as Document No. 93-195891.

5. Any facts, rights, interests, or claims which may exist or arise by reason of the following facts disclosed by an ALTA Map dated March 7, 2005, revised March 15, 2005, prepared by Randall Sherman, Licensed Professional Land Surveyor, Certificate No. LS4187:

(a) An encroachment (approximately 3.6' x 1/4' = approximately 3 sq. ft.) comprised of a chainlink fence appurtenant to an adjoiner (unknown owner) located at the most southwest corner of Lot 134-A.

6. The terms and provisions contained in the Subdivision Agreement (Three Lots or Less) recorded in said Bureau on December 31, 1991 as Document No. 91-183625.

7. The terms and provisions contained in the Subdivision Agreement (Large Lots) recorded in said Bureau on January 14, 1992 as Document No. 92-005547.

8. The terms and provisions contained in the Modification of Subdivision Requirements Agreement recorded in said Bureau on June 20, 1992 as Document No. 92-103161.

END OF EXHIBIT "1"

EXHIBIT "2"

CONDITIONS OF ZONING

1. That once the property has received final subdivision approval, no accessory dwelling units shall be allowed.

2. That Royal Main Properties, LLC shall make a contribution to the County for traffic improvements in an amount equal to $2,000 per lot. The contribution shall be paid to the County prior to final subdivision approval. Upon adoption of a traffic impact fee ordinance, Royal Main Properties, LLC shall comply with the ordinance in lieu of this voluntary contribution. Should a traffic impact fee ordinance be adopted prior to the collection of this contribution, the applicable amount shall be the greater of the two.

3. That Royal Main Properties, LLC shall be required to develop and implement a Traffic Demand Management measure to reduce or mitigate impacts to the satisfaction of the Department of Public Works.

4. That Royal Main Properties, LLC shall minimize potential impact to the air quality monitoring station to the satisfaction of the State Department of Health.

5. That Royal Main Properties, LLC shall provide improvements to the Central Maui Water System to the satisfaction of the Department of Water Supply.

6. That Royal Main Properties, LLC shall provide annual status reports to the Director of Housing and Human Concerns and the Council, commencing within one year of the effective date of this ordinance, and ending five years after the last lot is sold. The status reports shall include: (a) the number of residential workforce housing lots and market-priced lots completed; (b) the number of residential workforce housing lots and market-priced lots sold; (c) the sales price for each residential workforce housing lot; (d) the income bracket for each purchaser of a residential workforce housing lot; and (e) confirmation that all residential workforce housing lots continue to be held in perpetuity.

END OF EXHIBIT "2"

WE HEREBY CERTIFY that the foregoing BILL NO. 70 (2009)

1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held on the 18th day of September, 2009, by the following vote:

Dennis A. MATEO Chair	Michael J. MOLINA Vice-Chair	Gladys C. BAISA	Jo Anne JOHNSON	Solomon P. KAHO'OHALAHALA	William J. MEDEIROS	Wayne K. NISHIKI	Joseph PONTANILLA	Michael P. VICTORINO
Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 18th day of September, 2009.

DATED AT WAILUKU, MAUI, HAWAII, this 18th day of September, 2009.

DENNIS A. MATEO, CHAIR
Council of the County of Maui

ROY T. HIRAGA, COUNTY CLERK
County of Maui

RECEIVED
2009 SEP 18 PM 3:35
OFFICE OF THE MAYOR

THE FOREGOING BILL IS HEREBY APPROVED THIS 21st DAY OF September, 2009.

CHARMAINE TAVARES, MAYOR
County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL by the Mayor of the County of Maui, the said BILL was designated as ORDINANCE NO. 3683 of the County of Maui, State of Hawaii.

ROY T. HIRAGA, COUNTY CLERK
County of Maui

Passed First Reading on August 25, 2009.
Effective date of Ordinance September 21, 2009.

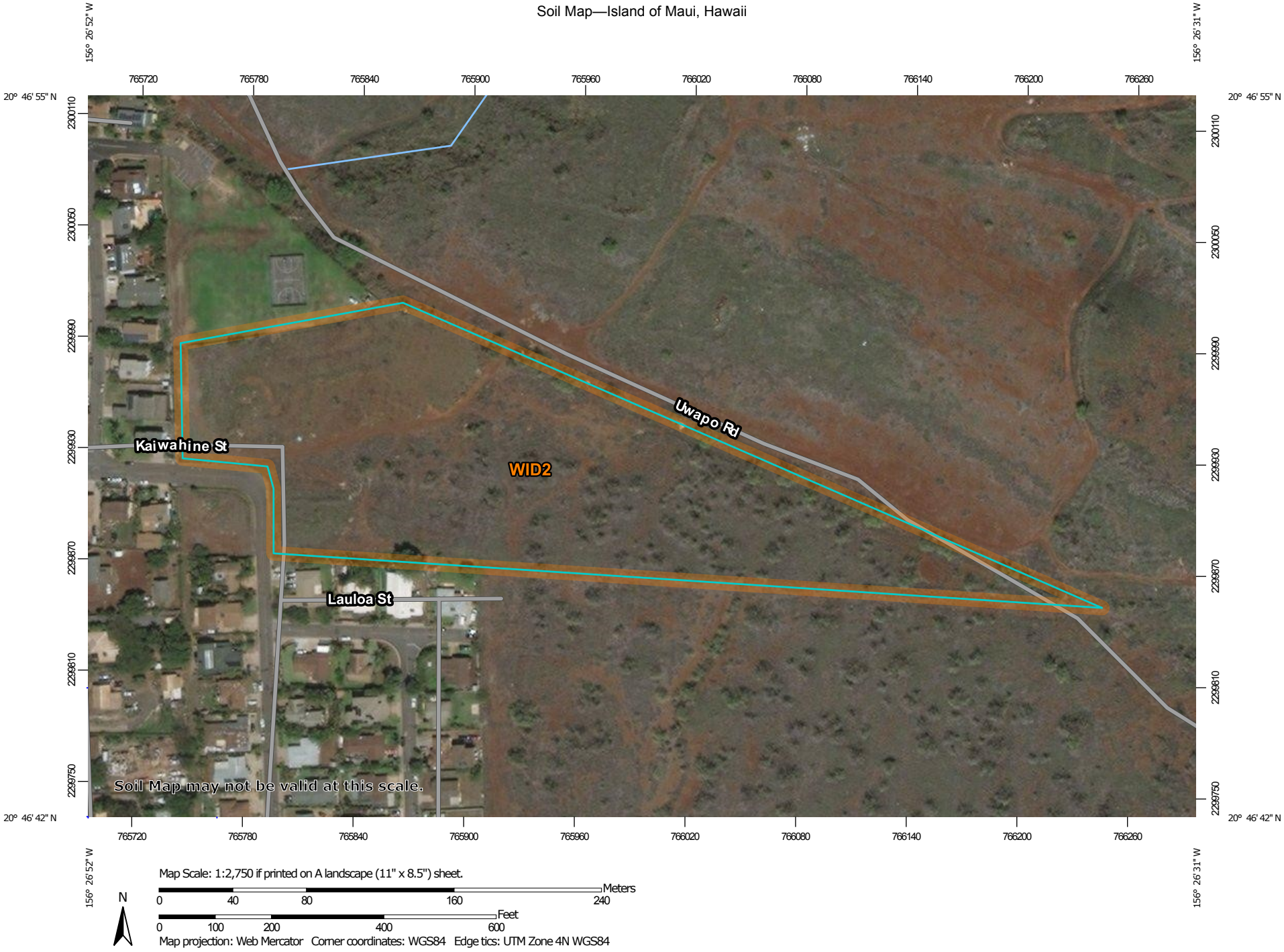
RECEIVED
2009 SEP 21 AM 11:37
OFFICE OF THE COUNTY CLERK

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. 3683, the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.

Dated at Wailuku, Hawaii, on

County Clerk, County of Maui

Soil Map—Island of Maui, Hawaii



Map Scale: 1:2,750 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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

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 14, Sep 20, 2016

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

Date(s) aerial images were photographed: Dec 31, 2009—Feb 14, 2017

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
WID2	Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded	9.7	100.0%
Totals for Area of Interest		**9.7**	**100.0%**

Island of Maui, Hawaii

WID2—Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded

Map Unit Setting

National map unit symbol: hqbx
Elevation: 100 to 1,000 feet
Mean annual precipitation: 12 to 20 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Waiakoa, extremely stony, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waiakoa, Extremely Stony

Setting

Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Basic igneous rock

Typical profile

H1 - 0 to 1 inches: extremely stony silty clay loam
H2 - 1 to 20 inches: extremely stony silty clay loam
H3 - 20 to 28 inches: stony silty clay loam
H4 - 28 to 32 inches: bedrock

Properties and qualities

Slope: 3 to 25 percent
Percent of area covered with surface fragments: 8.5 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C

Hydric soil rating: No

Data Source Information

Soil Survey Area: Island of Maui, Hawaii
Survey Area Data: Version 14, Sep 20, 2016

ance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

0 500 1,000 1,500 2,000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0580F

FIRM

FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

PANEL 580 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MAUI COUNTY	150003	0580	F

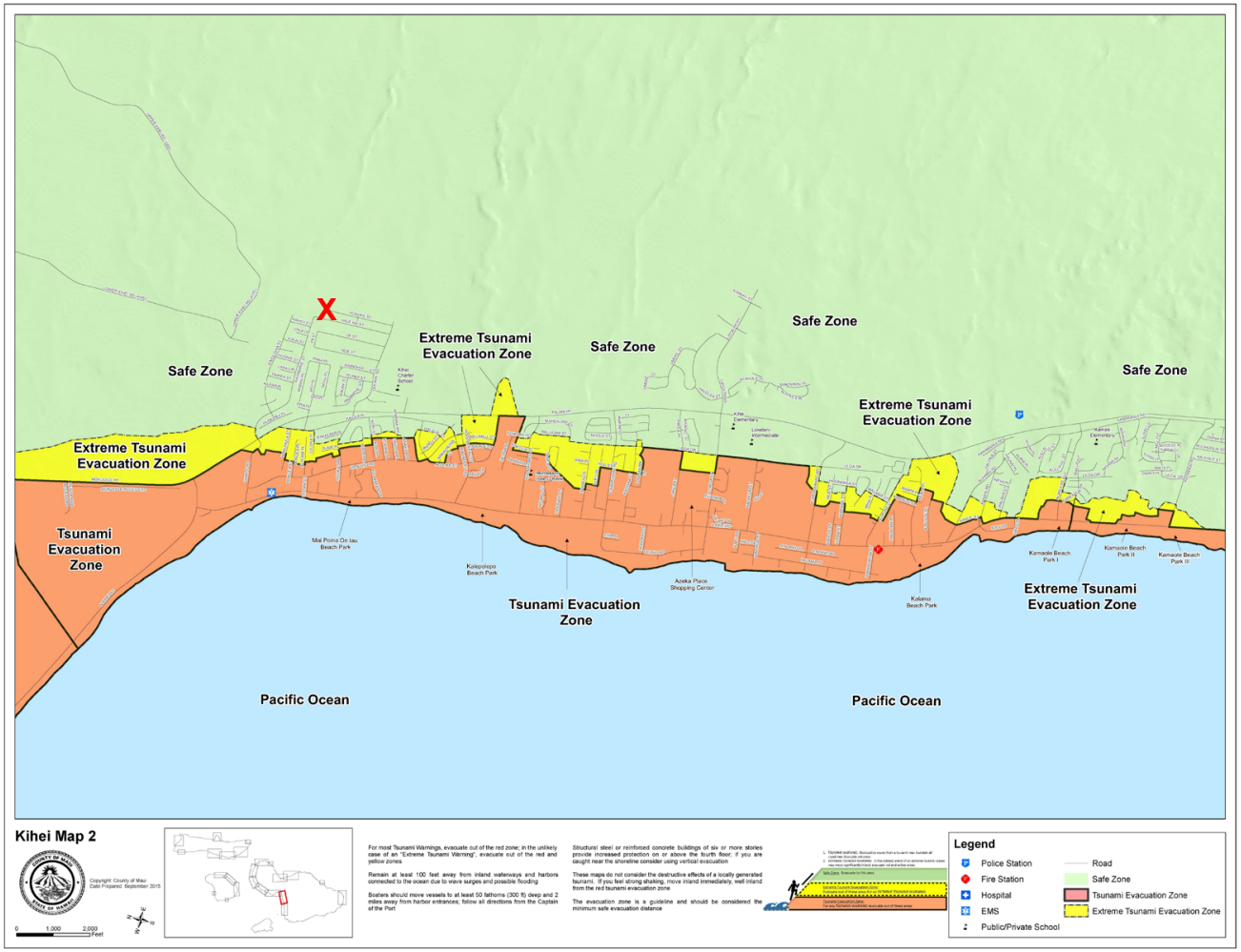
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
1500030580F

MAP REVISED
SEPTEMBER 19, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kawahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Tsunami Evacuation Zone Map FIGURE NUMBER: 13

U.S. Fish and Wildlife Service
National Wetlands Inventory

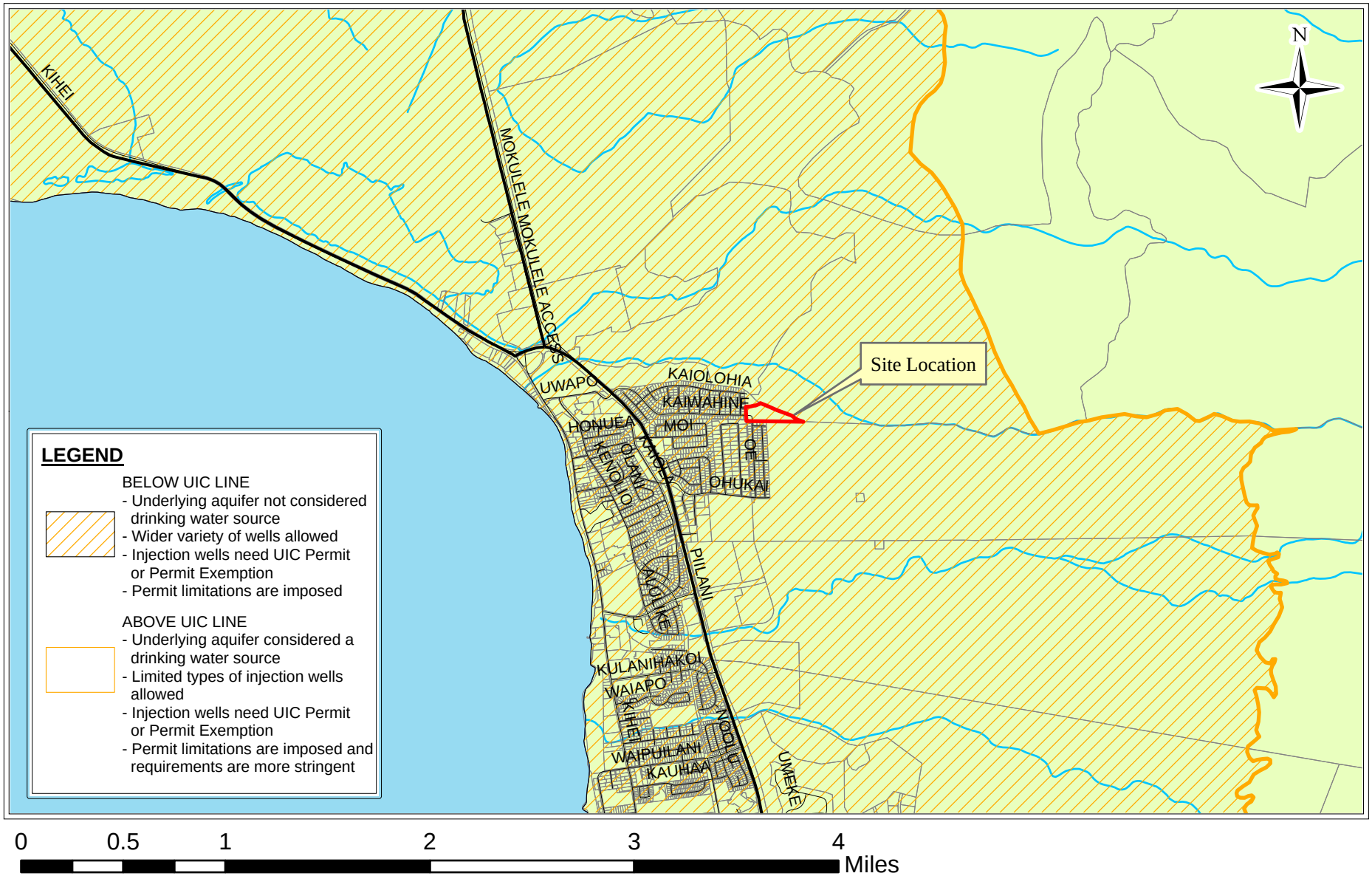
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Environmental Risk Analysis

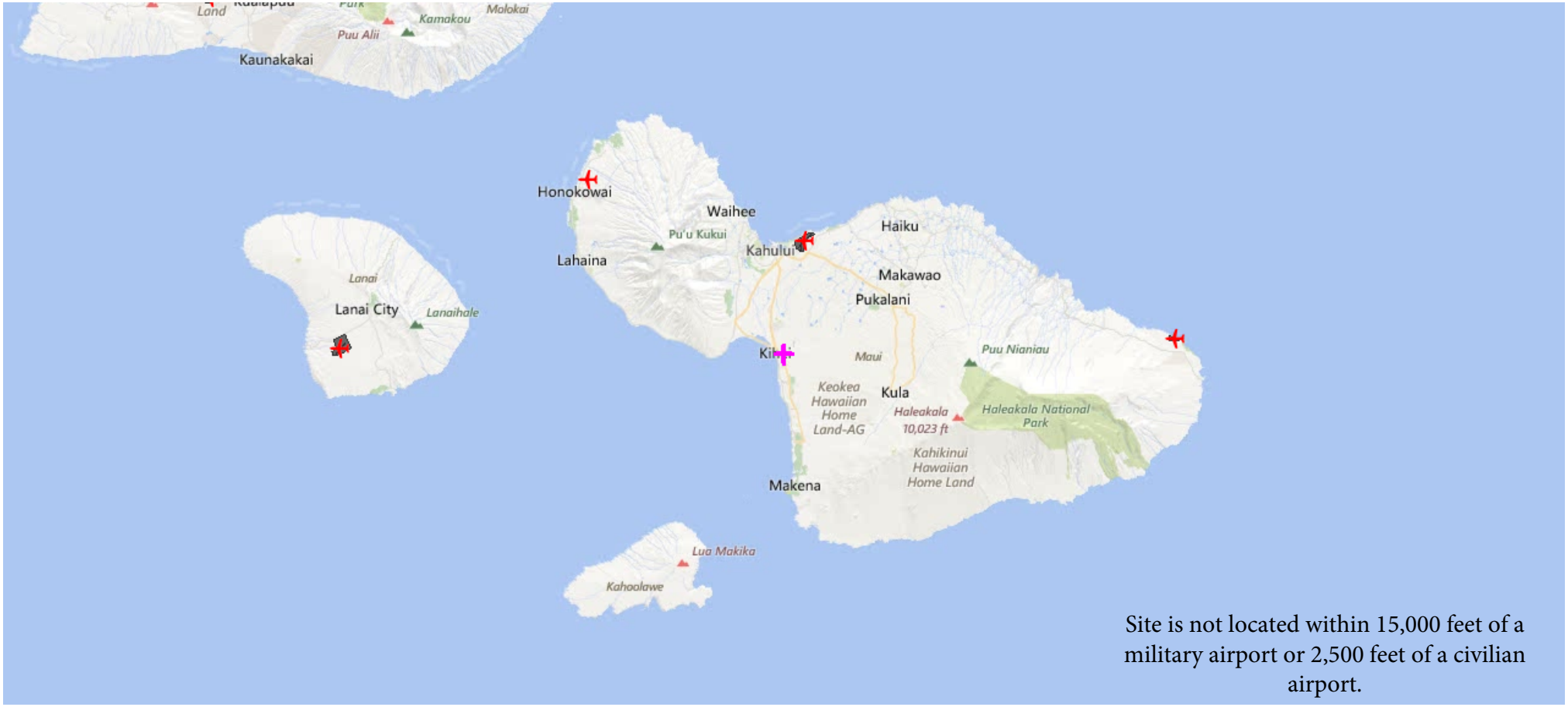
PROJECT NAME:
Environmental Assessment
Kawahine Village
Kihei, Hawaii 96753
TMK (2) 3-8-004-028

FIGURE TITLE: Wetland Map

FIGURE NUMBER: 14



Environmental Risk Analysis	PROJECT NAME: Environmental Assessment Kawahine Village Kihei, Hawaii 96753 TMK (2) 3-8-004-028	FIGURE TITLE: Underground Injection Control Map FIGURE NUMBER: 15



Site is not located within 15,000 feet of a military airport or 2,500 feet of a civilian airport.

Kaiwahine Village
Airport Zones
Accident
Potential Zone

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APPENDIX E

CONSULTATION LETTERS

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From: **O'neill, William** william_oneill@fws.gov
Subject: 2018-TA-0090: Kaiwahine Village Housing Development, Kihei, Maui
Date: December 19, 2017 at 9:56 AM
To: Rachel Okoji rachelokoji@enviroriskhawaii.com
Cc: Michelle Bogardus Office michelle_bogardus@fws.gov

WO

Dear Ms. Okoji:

Thank you for your letter received December 7, 2017, requesting technical assistance for the proposed Kaiwahine Village Housing Development, Kihei, Maui. This response is in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C 1531 et seq.).

Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Project, there are six federally listed species in the vicinity of the project area: the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), the Hawaiian goose or nene (*Branta sandvicensis*), Hawaiian petrel (*Pterodroma sandwichensis*), band-rumped storm petrel (*Oceanodroma castro*), one endangered insect, the Blackburn's sphinx moth (*Manduca blackburni*), and the threatened Newell's shearwater (*Puffinus newelli*). There is no proposed or final critical habitat within the vicinity of the project area. The Service recommends the following measures to avoid and minimize project impacts to listed species:

Hawaiian hoary bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as three feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend you incorporate the following applicable measures into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).

- Do not use barbed wire for fencing.

Nene

Nene are found on the islands of Hawaii, Maui, Molokai, and Kauai predominately, with a small population on Oahu. They are observed in a variety of habitats, but prefer open areas, such as pastures, golf courses, wetlands, natural grasslands and shrublands, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

To avoid and minimize potential project impacts to Nene we recommend you incorporate the following applicable measures into your project description:

- Do not approach, feed, or disturb Nene.

- If Nene are observed loafing or foraging within the project area during the Nene breeding season (September through April), have a biologist familiar with the nesting behavior of Nene 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 three 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 feet of proposed work, or a previously undiscovered nest is found within said radius after work begins.

- In areas where Nene are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.

Blackburn's sphinx moth

The Blackburn's sphinx moth may be in the vicinity of the proposed project area. Adult moths feed on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), iliee (*Plumbago zeylanica*), and maiapilo (*Capparis sandwichiana*); larvae feed upon non-native tree tobacco (*Nicotiana glauca*) and native aiea (*Nothocestrum sp.*). To pupate, the larvae burrow into the soil and can remain in a state of torpor for up to a year (or more) before emerging from the soil. Soil disturbance can result in death of the pupae.

Survey recommendations:

- A biologist familiar with the species should survey areas of proposed activities for Blackburn's sphinx moth and its larval host plants prior to work initiation.

  - These surveys should be conducted during the wettest portion of the year (usually November-April or several weeks after a significant rain) and within 4-6 weeks prior to construction.

  - Surveys should include searches for eggs, larvae, and signs of larval feeding (chewed stems, frass, or leaf damage).

  - If moths or their larval host plants are found during the survey, please contact the Service for additional

guidance to avoid take.

- Any larval host plants of Blackburn's sphinx moth identified should not be cut or disturbed without further consultation with the Service.

Measures should be taken to avoid attraction of BSM to the project location and prohibit tree tobacco from entering the site. Tree tobacco can grow greater than three feet tall in approximately six weeks. If it grows over three feet, the plants may become a host plant for BSM. We recommend that you:

- Remove any tree tobacco less than three feet tall.

- Monitor the site every 4-6 weeks for new tree tobacco growth before, during and after the proposed ground-disturbing activity.

  o Monitoring for tree tobacco can be completed by any staff, such as groundskeeper or regular maintenance crew, provided with picture placards of tree tobacco at different life stages.

Seabirds

Hawaiian seabirds may traverse the project area at night during the breeding season (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

To avoid and minimize potential project impacts to seabirds we recommend you incorporate the following applicable measures into your project description:

- Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.

- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.

- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

Implementation of these measures will minimize but does not ensure that take of listed species associated with this proposed action will be fully avoided. If there is a federal action agency funding, permitting, or assisting in the implementation of this project, we recommend that agency consult with the Service to address potential project impacts to listed species pursuant to section 7 (a)(2) of the ESA. If there is no federal action agency associated with the project, but impacts to listed species cannot be fully avoided, the project should coordinate with the Service directly pursuant to section 10 (a)(1)(B) of the ESA.

Thank you for your efforts to conserve listed species and native habitats. Please contact Fish and Wildlife Biologist William O'Neill (808-875-1582 ext 202, email: william_oneill@fws.gov) if you have any questions or for further guidance. When referring to this project, please include this reference number: **01EPIF00-2018-TA-0090**.

_____

William O'Neill
Endangered Species Biologist
Pacific Islands Fish and Wildlife Office
U.S. Fish and Wildlife Service
Kealia Pond National Wildlife Refuge
Mile Post 6, Mokulele Highway
Kihei, Maui, Hawaii 96753
ph: (808) 875-1582 ext 202
mobile: (808) 840-3219
web page: http://www.fws.gov/pacificislands/

DAVID Y. IGE
GOVERNOR

MAJOR GENERAL ARTHUR J. LOGAN
DIRECTOR OF EMERGENCY MANAGEMENT

VERN T. MIYAGI
ADMINISTRATOR OF EMERGENCY MANAGEMENT

PHONE (808) 733-4300
FAX (808) 733-4287

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF EMERGENCY MANAGEMENT / CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

December 15, 2017

Ms. Rachel Okoji, M.S.
Environmental Risk Analysis
905A Makahihi Way
Honolulu, Hawaii 96826

Dear Ms. Okoji:

Environmental Assessment for the Kaiwahine Village Housing Development
TMK: (2) 3-8-004:028, Kihei Hawaii

Thank you for the opportunity to comment on this proposed affordable housing development.

After review of the documentation you sent for this project, we note that because it is an unimproved property, there are currently no available shelter spaces. Therefore, we strongly recommend incorporation of hardening measures for safe rooms within the planned residential facilities so as to withstand high-wind and/or seismic events.

If you have any questions, please call Havinne Okamura, Hazard Mitigation Planner, at (808)733-4300, extension 556.

Sincerely,

VERN T. MIYAGI
Administrator of Hawaii Emergency Management

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M.D., M.P.H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, HAWAII 96793-3378

December 18, 2017

Ms. Rachel Okoji, M.S.
President
Environmental Risk Analysis LLC
905A Makahiki Way
Honolulu, Hawaii 96826
{Via Email: rachelokoji@enviroriskhawaii.com}

Dear Ms. Okoji:

Subject: Environmental Assessment for the Kaiwahine Village Housing Development, Kihei, Hawaii
TMK: (2) 3-8-004:028

Thank you for the opportunity to review this project. We have the following comments to offer:

> The land was formerly used in the production of sugarcane. Please contact the Department of Health, Hazard Evaluation and Emergency Response Office at 808 586-4249 for requisite information.

Should you have any questions, please contact me at 808 984-8230 or email me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

Patti Kitkowski

Patti Kitkowski
District Environmental Health Program Chief

c EPO {Via Email}

ALAN M. ARAKAWA
Mayor

KA'ALA BUENCONSEJO
Director

BRIANNE L. SAVAGE
Deputy Director

(808) 270-7230
FAX (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

December 12, 2017

Ms. Rachel Okoji
Environmental Risk Analysis LLC
Attn: Kaiwahine Village
905A Makahiki Way
Honolulu, HI 96826

Dear Ms. Okoji:

SUBJECT: ENVIRONMENTAL ASSESSMENT FOR THE KAIWAHINE VILLAGE HOUSING DEVELOPMENT, TMK: (2) 3-8-004:028

Thank you for the opportunity to review and comment on the subject project. The Department of Parks and Recreation has no comment at this time, and looks forward to reviewing future documents as they are made available.

Please feel free to contact me, or Robert Halvorson, Chief of Planning & Development, at (808) 270-7387 or robert.halvorson@mauicounty.gov should you need additional information.

Sincerely,

KA`ALA BUENCONSEJO
Director

KB:RH:do

ALAN M. ARAKAWA
Mayor

DON MEDEIROS
Director

MARC I. TAKAMORI
Deputy Director

(808) 270-7511

DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI
2145 Kaohu Street, Suite 102
Wailuku, Hawaii, USA 96793

December 11, 2017

Environmental Risk Analysis LLC
Attn: Rachel Okoji, President
905A Makahiki Way
Honolulu, HI 96826

Subject: Environmental Assessment for the Kaiwahine Village Housing Development
Tax Map Key (2)-3-8-004:028, Kihei, Hawaii

Dear Ms. Okoji:

Thank you for the opportunity to comment on this proposed affordable housing development. The County of Maui Department of Transportation has previously looked at a bus route through Kaiwahine Street, exiting Hale Kai Street. We also conducted a survey mailer to all residents on Hale Kai Street. There was some opposition of a bus route in their neighborhood because of the congestion and heavy street parking on Hale Kai Street.

If transportation is a desired amenity for your project, we urge you to consider some roadway improvements to allow for larger vehicles and buses.

Please feel free to contact me if you have any questions.

Sincerely,

Don Medeiros
Director

S:\Letters\DOT Response - EA for Kaiwahine Village Housing Development.doc

ALAN M. ARAKAWA
Mayor

DAVID TAYLOR, P.E.
Director

GLADYS C.BAISA
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

December 13, 2017

Rachel Okoji, M.S.
Environmental Risk Analysis LLC
905A Makahiki Way
Honolulu, Hawaii 96826

RE: Environmental Assessment (EA) for the Kaiwahine Village Housing Development
TMK: (2) 3-8-004:028

Dear Ms. Okoji:

The Department of Water Supply (DWS) thanks you for the opportunity to comment on the Kaiwahine Village Housing Development EA. There is no DWS meter on the parcel, which is subject to the County's Availability Policy, as codified in Title 14 of the Maui County Code. Please see the attached DWS comment letter dated November 1, 2010 for conditions of approval.

Infrastructure and Source Water Protection
A thirty-six-inch water main runs through the property at the Northwest end and an 8-inch line ends at the property line at the Northwest corner of the parcel.

In order to protect the ground and surface water from contamination, we recommend implementing the following construction best management practices:

- Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the ground. Remove all construction debris and toxic substances daily to prevent entry into the ocean.
- Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed off-site.
- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Disturb the smallest area possible.

- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment. Apply biocides only during dry periods of low rainfall to minimize chemical run-off.
- Keep run-off on site.
- Use reclaimed water as an alternative source of non-potable water for dust control during construction. Kihei Wastewater Treatment Plant provides reclaimed water at a reasonable cost.
- Properly and promptly dispose of all loosened and excavated soil and debris material.

Should you have any questions, please contact staff planner Audrey Dack at (808) 463-3109 or audrey.dack@co.maui.hi.us.

Sincerely,

Dave Taylor, P.E., Director
apd
cc: DWS Engineering

CHARMAINE TAVARES
Mayor

JEFFREY K. ENG
Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

November 1, 2010

Ms. Lori Tsuhako, Director
Department of Housing and Human Concerns
County of Maui
2200 Main Street, Suite 546
Wailuku, Hawaii 96793

SUBJECT: 201-H Application for the Kawaihine Village Project
TMK (2) 3-8-004:028, Kihei, Maui

Dear Ms. Tsuhako:

Thank you for the opportunity to comment on this 201-H Application. The Department of Water Supply (DWS) has met with the applicant and discussed measures to ensure minimal impact on the Central Maui water system including extensive water conservation. We recommend that approval of the subject 201-H application be conditioned upon implementation of the following measures:

1. Any off-site water system improvements shall be designed and constructed in accordance with DWS standards and requirements. Furthermore, all such improvements shall be dedicated to the DWS upon inspection and approval by DWS.

2. Total potable allocation from the DWS system shall be limited to 30,000 gpd, or 250 gpd per multi-family unit.

3. All non potable demand shall be served from an on-site privately owned irrigation well to be developed at the applicant's expense.

4. Installation of backflow preventer, approved, installed and tested by a technician certified by the State Department of Health shall be required to mitigate potential effects of cross connection of the dual water system.

5. The project shall be subject to strict water conservation requirements for both its domestic and irrigation demands. A comprehensive water conservation plan demonstrating strict water conservation shall be required to be submitted to the DWS for its approval. The conservation plan should include the following measures:

    1. Start a Water Conservation Program
    a. Install signs encouraging water conservation in public areas.

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410. Or call (202) 720-5964 (voice or TDD)

Printed on recycled paper

b. Seek resident's suggestions on water conservation; put suggestion boxes in prominent areas.
c. Provide information and resources for residents to check for leaks and identify ways they can conserve and provide an easy method for residents to report any leaks/waste found on the property.

2. Indoor Conservation Measures
a. Use EPA WaterSense labeled plumbing fixtures.
b. Install flow reducers and faucet aerators in all plumbing fixtures where-ever possible.
c. Install dual flush toilets with high efficiency models that use 1.28 gallons per flush or less.
d. Install showerheads with a flow rate of 1.5 gpm at 60 psi or less in all units.
e. Install bathroom sink faucets with fixtures that do not exceed 1 gpm at 60 psi. Laundry facilities and/or individual unit machines must use Energy Star labeled washers.
f. Limit the distance from the hot water source to the tap early in the design stage.

3. Exterior Areas
a. Install infrastructure necessary to utilize a future connection to reclaimed water line
b. Plan landscapes that require less water by using native, zone-appropriate plants.
c. Use Smart Approved WaterMark irrigation products. Examples include ET irrigation controllers, drip irrigation, and water saving spray heads.
d. Avoid plant fertilizing and pruning that would stimulate excessive growth.
e. Remove weeds and unhealthy plants so remaining plants can benefit from the water saved. Time watering to occur in the early morning or evening to limit evaporation. Limit turf to as small an area as possible.

Sincerely,

JEFFREY K. ENG
Director
emb

From: **McIntyre, Laura** Laura.McIntyre@doh.hawaii.gov
Subject: Environmental Assessment for the Kaiwahine Village Housing Development
Date: December 12, 2017 at 10:49 AM
To: rachelokoji@enviroriskhawaii.com

LM

Rachel Okoji, M.S.
President
Environmental Risk Analysis LLC
905A Makahiki Way
Honolulu, Hawaii 96826

Email: rachelokoji@enviroriskhawaii.com

Dear Rachel Okoji:

SUBJECT: Early Consultation for a Draft Environmental Assessment for the Kaiwahine Village Housing Development

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your letter to our office.

Hawaii's environmental review laws require Environmental Assessments (EAs) and Environmental Impact Statements (EISs) to consider health in the discussion and the mitigation measures to reduce negative impacts. In its definition of 'impacts,' §11-200-2, Hawaii Administrative Rules (HAR) includes health effects, whether primary (direct), secondary (indirect), or cumulative. Further, §11-200-12(b)(5), HAR, lists public health as one of the criteria for determining whether an action may have a significant impact on the environment.

We advocate that you consider health from a broad perspective; one that accounts for the social, economic, and environmental determinants of health and wellbeing. Community well-being can be impacted by access to physical activity, health care, feelings of social connectedness and safety. Design solutions that take these factors into consideration positively contribute to the social determinants of health in a community, improving the well-being of those who live there by influencing health promoting behaviors. Social determinants contribute to preventable chronic diseases such as asthma, diabetes, obesity, and cardiovascular disease.

In the development and implementation of all projects, EPO strongly recommends regular review of State and Federal environmental health land use guidance. State standard comments to support sustainable healthy design are provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments.

We suggest you review the requirements of the Clean Water Branch (Hawaii Administrative Rules {HAR}, Chapter 11-54-1.1, -3, 4-8) and/or the National Pollutant Discharge Elimination System (NPDES) permit (HAR, Chapter 11-55) at: http://health.hawaii.gov/cwb. If you have any questions, please contact the Clean Water Branch (CWB), Engineering Section at (808) 586-4309 or cleanwaterbranch@doh.hawaii.gov. If your project involves waters of the U.S., it is highly recommended that you contact the Army Corps of Engineers, Regulatory Branch at: (808) 835-4303.

Please note that all wastewater plans must conform to applicable provisions (HAR, Chapter 11-62, "Wastewater Systems"). We reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please review online guidance at: http://health.hawaii.gov/wastewater and contact the Planning and Design Section of the Wastewater Branch (WWB) at (808) 586-4294.

If temporary fugitive dust emissions could be emitted when the project site is prepared for construction and/or when construction activities occur, we recommend you review the need and/or requirements for a Clean Air

Branch (CAB) permit (HAR, Chapter 11-60.1 "Air Pollution Control"). Effective air pollution control measures need to be provided to prevent or minimize any fugitive dust emissions caused by construction work from affecting the surrounding areas. This includes the off-site roadways used to enter/exit the project. The control measures could include, but are not limited to, the use of water wagons, sprinkler systems, and dust fences. For questions contact the Clean Air Branch via e-mail at: Cab.General@doh.hawaii.gov or call (808) 586-4200.

Any waste generated by the project (that is not a hazardous waste as defined in state hazardous waste laws and regulations), needs to be disposed of at a solid waste management facility that complies with the applicable provisions (HAR, Chapter 11-58.1 "Solid Waste Management Control"). The open burning of any of these wastes, on or off site, is strictly prohibited. You may wish you review the Minimizing Construction & Demolition Waste Management Guide at: http://health.hawaii.gov/shwb/files/2016/05/constdem16.pdf Additional information is accessible at: http://health.hawaii.gov/shwb. For specific questions call (808) 586-4226.

If noise created during the construction phase of the project may exceed the maximum allowable levels (HAR, Chapter 11-46, "Community Noise Control") then a noise permit may be required and needs to be obtained before the commencement of work. Relevant information is online at: http://health.hawaii.gov/irhb/noise EPO recommends you contact the Indoor and Radiological Health Branch (IRHB) at (808) 586-4700 with any specific questions.

A phase I Environmental Site Assessment (ESA) and site investigation should be conducted for residential development or redevelopment projects in current or formerly used industrial areas and on formerly and currently zoned agricultural land used for growing sugar, pineapple or other agricultural products.

If the investigation shows that a release of petroleum, hazardous substance, pollutants or contaminants may have occurred at the site, the site should be properly characterized through an approved Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response Office (HEER) soil and/or groundwater sampling plan. Please refer to Sections 3 and 4 of the HEER Office Technical Guidance Manual http://www.hawaiidoh.org.

If the site is found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with State Law (HRS, Chapter 128D, "Environmental Response Law", Chapter 451, "State Contingency Plan"). To identify HEER records related to the property, visit http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/public-records. For information on site assessment and cleanup programs review: http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/site-assessment-and-cleanup-programs. Any specific questions should be directed to the HEER office at (808) 586-4249.

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal at: https://eha-cloud.doh.hawaii.gov. This site provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings.

You may also wish to review the draft Office of Environmental Quality Control (OEQC) viewer at: http://eha-web.doh.hawaii.gov/oeqc-viewer. This viewer geographically shows where some previous Hawaii Environmental Policy Act (HEPA) {Hawaii Revised Statutes, Chapter 343} documents have been prepared.

The Hawaii Disability and Communication Access Board (DCAB) recommends the inclusion of access for persons with disabilities through all phases of design and construction. New construction and alteration work shall comply with all applicable accessibility requirements. Projects covered by §103-50, Hawaii Revised Statutes, and Hawaii Administrative Rules Title 11 Chapter 216 shall seek advice and recommendations from DCAB on any construction plans prior to commencing with construction. If you have any questions please contact DCAB at (808) 586-8121 or dcab@doh.hawaii.gov.

contact DCAB at (808) 586-8121 or dcab@doh.hawaii.gov.

To better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed an environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: http://www.epa.gov/ejscreen.

We hope this information is helpful. If you have any questions please contact us at DOH.epo@doh.hawaii.gov or call us at (808) 586-4337. Thank you for the opportunity to comment.

Mahalo nui loa,

Laura Leialoha Phillips McIntyre, AICP
Environmental Planning Office

Please be advised:
The Environmental Planning Office (EPO), along with the Clean Air, Clean Water, and Wastewater Branches will be moving in November 2017. The new address, for EPO, **as of December 1, 2017**, will be:
Environmental Planning Office, DOH, Hale Ola, 2827 Waimano Home Road #109, Pearl City, Hawaii 96782
Please feel free to come and visit our new offices anytime. Please note that there is a security guard at the bottom of the hill (before entering DOH property). Our office phone numbers, email and website will all remain the same.

Laura L. McIntyre, AICP
Manager, Environmental Planning Office
Hawaii State Department of Health

Phone: (808) 321-2601
Email: laura.mcintyre@doh.hawaii.gov
Website: http://health.hawaii.gov/epo
2827 Waimano Home Road #109, Pearl City, Hawaii 96782

From: **Mike Moran** mmmmahalo2000@aol.com
Subject: Re: EA report input forKaiwahine Village, Kihei, Maui
Date: December 16, 2017 at 2:01 PM
To: rachelokoji@enviroriskhawaii.com
Cc: dbigley@uhcllc.net, kelly.king@mauicounty.us, susan.foley@mauicounty.us, kca@gokihei.org

Mahalo for the clarification, Rachel. That is encouraging. However we still see the time limit challenge to break ground within 4 months. We are sure Doug has a plan to achieve this. We recall when the (current?) owner- not sure if the deal has closed yet- asked our County Council for another time extension for 5 years, KCA championed to allow 2 years as a compromise, it was somewhat reluctantly accepted by Council. Granted the members of the Council had a 33% update since then, but there is no assurance they would grant another extension , so we hope none is needed.
So for now we will stand by for the next step.
Aloha
Mike

-----Original Message-----
From: Rachel Okoji <rachelokoji@enviroriskhawaii.com>
To: Mike Moran <mmmmahalo2000@aol.com>
Cc: DougBigley <dbigley@uhcllc.net>; kelly.king <kelly.king@mauicounty.us>; susan.foley <susan.foley@mauicounty.us>; kca <kca@gokihei.org>
Sent: Thu, Dec 14, 2017 2:27 pm
Subject: Re: EA report input for Kaiwahine Village, Kihei, Maui

HI Mike,

Thank you for your response! This is the pre-consultation period, so there will be additional time as we go forward and get the draft out for public review. The draft Environmental Assessment (EA) will provide the information you are referring to… We are reaching out to interested parties to let them know a little bit about the project and that an EA is being performed. If there are any preliminary concerns or support for the project, we'd like to hear them. Thank you again for taking the time to respond. We will definitely take your comments into advisement. Again, you will have an opportunity to comment in the future when the EA is published.

Thank you,
Rachel

Rachel Okoji, M.S.
President
Environmental Risk Analysis, LLC
905A Makahiki Way
Honolulu, Hawaii 96826
808.783.6840 tel
www.enviroriskhawaii.com

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On Dec 14, 2017, at 2:19 PM, Mike Moran <mmmmahalo2000@aol.com> wrote:

-----Original Message-----
From: Mike Moran <mmmmahalo2000@aol.com>
To: rachelokoji <rachelokoji@environriskhawaii.com>
Sent: Thu, Dec 14, 2017 2:16 pm
Subject: Fwd: EA report input forKaiwahine Village, Kihei, Maui

error in e address

-----Original Message-----
From: Mike Moran <mmmmahalo2000@aol.com>
To: rachelokoji <rachelokoji@environmentalriskhawaii.com>
Cc: dbigley <dbigley@ikaikaohana.org>; kelly.king <kelly.king@mauicounty.us>; susan.foley <susan.foley@mauicounty.us>; kca <kca@gokihei.org>
Sent: Thu, Dec 14, 2017 2:13 pm
Subject: EA report input forKaiwahine Village, Kihei, Maui

Aloha Rachel,

The Kihei Community Association (KCA) appreciates receiving the opportunity to submit comments offered in your letter dated 11/30/17, with due date of 12/15/17. However the postmark on the envelope is 12/6/17, so we immediately lost a week to make the deadline, but doing our best, as an unfunded all volunteer non-profit organization, to participate in a reasonable manner.

When we look at an environmental assessment, we consider 4 major categories Natural World, Cultural Heritage,Smart Growth and Smart Transportation Of course within each, too many to all be included here , we look at numerous components such as protection and conservation; preservation and enhancement; etc. In this situation, we are challenged, as we have such limited data,
basically some concept visuals that you included with your letter.

While we do agree with much of your verbiage in the second paragraph, we do not see how this need leads to a low potential for adverse environmental impacts

That said, we have generally kept up with the project proposal going back about seven years, and can see a community housing win if the Bigley's in *Ikaika Ohana* secure the land and government approval to meet the current requirement to break ground by March, and then have reasonable housing available for occupancy in 2020. We did have a phone conversation with Doug Bigley and explored the *Ikaika* website, and have expectation he is an honorable man and the Ohana has a good reputation..

So our conclusion under the circumstances, while we are not sure of the FONSI, we offer no objections to proceeding, and wish them success. We do hope prospective tenants are aware of the surrounding Monsanto ag fields and their use of pesticides so they can make informed decisions and take measures they deem appropriate. We are aware of the imposed condition placed on this project to pave all of Kaiwahine
We do look forward to meeting Doug on his next visit to Maui and potentially a community meeting on this project in 2018.

With the specific time limit, may we ask for an acknowledgement of this missive so we are assured you have received it on time
Mahalo,

Mike Moran President Kihei Community Association www.gokihei.org KCA@gokihei.org

POLICE DEPARTMENT

COUNTY OF MAUI

ALAN M. ARAKAWA
MAYOR

OUR REFERENCE

YOUR REFERENCE

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

TIVOLI S. FAAUMU
CHIEF OF POLICE

DEAN M. RICKARD
DEPUTY CHIEF OF POLICE

December 13, 2017

Ms. Rachel Okoji, M.S.
President
Environmental Risk Analysis LLC
905A Makahiki Way
Honolulu, Hawaii 96826

SUBJECT: Environmental Assessment for the Kaiwahine Village Housing Development, TMK: (2) 3-8-004;028, Kihei, Hawaii

Dear Ms. Okoji:

This is in response to your letter dated November 30, 2017, requesting comments on the above subject.

We have received the information submitted and we have no issues or concerns.

Thank you for giving us the opportunity to comment on this project.

Sincerely,

Assistant Chief John Jakubczak
for: TIVOLI S. FAAUMU
Chief of Police

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
2010 NOV 19 PM 2:35
DHHC DIRECTOR'S OFFICE
COUNTY OF MAUI

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

CHIYOME LEINAALA FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / WB

LUD-2 3 8 004 028-ID#516
Kaiwahine Village 201H App

November 15, 2010

Ms. Lori Tsuhako, LSW, ACSW
Director of Housing and Human Concerns
County of Maui
2200 Main Street Suite 546
Wailuku, Maui, Hawaii 96793

Dear Ms. Tsuhako:

Subject: Request for Comments on the 201- Application for the Kaiwahine Village Project located at Kaiwahine & Hale Kai Street, Kihei, Maui 96753 9.289 acres TMK (2) 3-8-004: 028

Thank you for allowing us the opportunity to review the subject project which proposes the development of a 120 multi-family unit affordable subdivision consisting of a mix of one-, two- and three-bedroom units, parking, communal areas, and access to a park.

We have the following comments and information on the subject request. The subject project is located in the critical wastewater disposal area as determined by the Maui Wastewater Advisory Committee. We have no objections to the proposed development as domestic wastewater will be treated and disposed of via an 8-inch gravity sewer line located along Kaiwahine Street which will transport the wastewater to the Kihei Wastewater Treatment Plant.

We encourage the developer to work with the County to utilize recycled water for irrigation and other non-potable water purposes such as dust control, parks, open spaces or landscaping areas. Further, any means to reduce green house gas emissions, practice renewable energy and a reduction in waste is highly recommended.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62 "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at (808) 586-4294.

Sincerely,

MARSHALL LUM, P.E., ACTING CHIEF
Wastewater Branch

LM:lmj

c: DOH's Environmental Planning Office (EPO I-3402)
DOH-WWB's Maui Staff – Mr. Roland Tejano

OFFICE OF PLANNING
STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: http://planning.hawaii.gov/

DTS201712121451NA

December 12, 2017

Ms. Rachel Okoji, M.S.
President
Environmental Risk Analysis, LLC
905A Makahiki Way
Honolulu, Hawaii 96826

Dear Ms. Okoji:

Subject: Environmental Assessment for the Kawahine Village Housing Development. Kihei, Maui, Hawaii; TMK: (2) 3-8-004: 028

Thank you for the opportunity to provide comments on the pre-consultation request for the preparation of a Draft Environmental Assessment (Draft EA) on the Kawahine Village affordable rental housing project. The pre-consultation review material was transmitted to our office via letter dated November 30, 2017.

It is our understanding that this project proposes to build a 120-unit multi-family apartment complex that would provide affordable rental housing for low-income households. The project will be funded by Ikaika Ohana (a nonprofit 501(c) 3 affordable housing developer, social service coordinator and asset management company) grant funding provided by the National Housing Trust Fund, and by programs that fall under the U.S. Department of Housing and Urban Development.

The Office of Planning (OP) has reviewed the transmitted material and has the following comments to offer:

1. Pursuant to Hawaii Administrative Rules (HAR) § 11-200-10(4) – general description of the action's technical, economic, social, and environmental characteristics, this project must demonstrate that it is consistent with a number of state environmental, social, economic goals, and policies. Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Planning Act, provides goals, objectives, policies, planning coordination and implementation, and priority guidelines for growth, development, and the allocation of resources throughout the state.

   The Draft EA should include a discussion on the project's ability to meet all parts of HRS Chapter 226. The analysis should examine consistency with these statutes or clarify where it is in conflict with them. If any of these statutes are not applicable to

the project, the analysis should affirmatively state such determination, followed by discussion paragraphs.

2. The coastal zone management (CZM) area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" (HRS § 205A-1).

   The Draft EA should include an assessment as to how the proposed action conforms to each of the goals and objectives as listed in HRS § 205A-2. Compliance with HRS § 205A-2 is an important component for satisfying the requirements of HRS Chapter 343.

3. Pursuant to HAR § 11-200-10(6) – identification and summary of impacts and alternatives considered; in order to ensure that the surface water and nearshore marine resources on the Island of Maui remain protected, the negative effects of stormwater inundation, potentially caused by the proposed development activities, should be evaluated in the Draft EA.

   Issues that may be examined include, but are not limited to, project site characteristics in relation to flood and erosion prone areas, open spaces, the potential vulnerability of surface water resources, drainage infrastructure currently in place, soil absorption characteristics of the area, and examining the amount of permeable versus impervious surfaces in the project area. These items should be considered when developing mitigation measures for the protection for surface water resources and the coastal ecosystem, pursuant to HAR § 11-200-10(7).

   OP has developed a number of resources and recommends consulting these guidance documents and stormwater evaluative tools when developing strategies to address polluted runoff. They offer useful techniques to keep land-based pollutants and sediment in place and prevent nearshore water contamination while considering the best management practices (BMP) suited for the project and the types of contaminants affecting the project area. The evaluative tools that should be used during the design process include:

   - Hawaii Watershed Guidance provides direction on mitigation strategies for urban development activities that will safeguard watersheds and implement watershed plans http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI Watershed Guidance Final.pdf
   - Stormwater Impact Assessments can be used to identify and analyze information on hydrology, sensitivity of coastal and riparian resources, and

management measures to control runoff, as well as consider secondary and cumulative impacts to the area.
http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_imapct/final_storm water_impact_assessments_guidance.pdf

- Low Impact Development (LID), A Practitioners Guide covers a range of structural BMPs for stormwater control management, onsite infiltration techniques, water reuse methods, and building layout designs that minimize negative environmental impacts.
http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf

4. Pursuant to Act 127, Session Laws of Hawaii 2016, a Special Action Team on affordable rental housing was established to make recommendations on actions to promote affordable rental housing. One of the key objectives of Act 127 is to achieve 22,500 affordable rental-housing units by December 31, 2026. Affordable rental housing is the focus of this project; therefore, the Draft EA should include analysis on how this project aligns with the goals of Act 127.

If you have any questions regarding this comment letter, please contact Joshua Hekekia of our office at (808) 587-2845.

Sincerely,

Leo R. Asuncion
Director

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
2010 NOV 16 PM 2:57
DHHC-DIRECTOR'S OFFICE
COUNTY OF MAUI

CHIYOME L. FUKINO, 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:

November 10, 2010

10-835 CAB

Ms. Lori Tsuhako, LSW, ACSW
Department of Housing and Human Concerns
Maui County
2200 Main Street, Suite 546
Wailuku, Hawaii 96793

Dear Ms. Tsuhako:

Subject: Kaiwahine Village Project, Kihei, Maui

A significant potential for fugitive dust emissions exists during all phases of construction. Proposed activities will occur in proximity to public areas and thoroughfares, thereby exacerbating potential dust problems.

We encourage the contractor to implement a dust control plan, which does not require approval by the Department of Health, and to comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust. Dust control measures, some of which are mentioned in your document, include, but are not limited to, the following:

a. Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
b. Providing an adequate water source at the site prior to start-up of construction activities;
c. Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;
d. Minimizing dust from shoulders and access roads;
e. Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
f. Controlling dust from debris being hauled away from the project site.

If you have any questions, please contact Mr. Barry Ching of the Clean Air Branch at 586-4200.

Sincerely,

Wilfred K. Nagamine

WILFRED K. NAGAMINE
Manager, Clean Air Branch

BC:mah

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
DOH/CWB

11032PSS.10

RECEIVED
2010 NOV 15 PM 3:03
DHHC-DIRECTOR'S OFFICE
COUNTY OF MAUI

November 10, 2010

Ms. Lori Tsuhako, LSW, ACSW
Director of Housing and Human Concerns
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Subject: Comments on the 201-H Application for the Kaiwahine Village Project
Kihei, Island of Maui, Hawaii
TMK: (2) 3-8-004:028

Dear Ms. Tsuhako:

The Department of Health (DOH), Clean Water Branch (CWB) has reviewed the subject document and offers these comments on the project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting the applicable Notice of Intent (NOI) forms:

a. Storm water associated with construction activities, including excavation, grading, clearing, demolition, uprooting of vegetation, equipment staging, and storage areas that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.

b. Discharges of hydrotesting water.

c. Discharges of construction activity dewatering.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

3. For types of wastewater discharges not covered by an NPDES general permit or discharges to Class AA or Class 1 State waters, you may need an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage is required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation.

If you have any questions, please visit our website at http://www.hawaii.gov/health/environmental/water/cleanwater/index.html, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

ALEC WONG, P.E., CHIEF
Clean Water Branch

SS:ml

c: DOH-EPO #I-3402, #I-3393 [via e-mail only]

LINDA LINGLE
GOVERNOR

XXXXXXXXXXXXXXXXXX
PATRICIA HAMAMOTO
XXXXXXXXXXXXXXXXXX
SUPERINTENDENT

KATHRYN S. MATAYOSHI
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF THE SUPERINTENDENT

November 5, 2010

Ms. Lori Tsuhako, Director
Department of Housing and Human Concerns
County of Maui
2200 Main Street, Suite 546
Wailuku, Hawai`i 96793

Dear Ms. Tsuhako:

Subject: Request for Comments on the 201-H Application for the Kaiwahine Village Project, TMK (2) 3-8-004:028, Kihei, Maui

The Department of Education has received your request for comments on the 201-H application for the Kaiwahine Village Project in Kihei, Maui.

This project is within the boundaries of the proposed Central Maui School Impact Fee District. If the Board of Education adopts the Impact District, this project will be subject to school impact fees.

Thank you for the opportunity to comment. If you have any questions, please call Jeremy Kwock of the Facilities Development Branch at (808) 377-8301.

Very truly yours,

Kathryn S. Matayoshi
Superintendent

KSM:jmb

c: Randolph Moore, Assistant Superintendent, OSFSS
Bruce Anderson, CAS, Baldwin/Kekaulike/Maui Complex Areas
✓ Matthew Slepin, Senior Planner, Chris Hart & Partners, Inc.

CC: Matt 10/027

RECEIVED
NOV 09 2010
CHRIS HART & PARTNERS, INC.
Landscape Architecture

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

November 10, 2010

Ms. Lori Tsuhako, LSW, ACSW
Director
Department of Housing & Human Concerns
County of Maui
2200 Main Street, Suite 546
Wailuku, Hawai`i 96793

Dear Ms. Tsuhako:

Subject: Request for Comments on the 201-H Application for the Kaiwahine Village Project, Kihei, Maui
TMK: (2) 3-8-004:028

Thank you for the opportunity to review this project. We have the following comments:

1. The project must connect to the County sewer system for disposal of wastewater.

2. National Pollutant Discharge Elimination System (NPDES) permit coverage maybe required for this project. The Clean Water Branch should be contacted at 808 586-4309.

3. The Department of Health's Clean Air Branch Air Monitoring Station is in the vicinity of this project, located at the Hale Piilani County Park. Implementation of this project may impact the station's operation.

4. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control." A noise permit may be required and should be obtained before the commencement of work.

Cl: Matt 10/027

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CHRIS HART & PA
Landscape Architec

It is strongly recommended that the Standard Comments found at the Department's website: http://hawaii.gov/health/environmental/env-planning/landuse/landuse.html be reviewed, and any comments specifically applicable to this project should be adhered to.

Should you have any questions, please call me at 808 984-8230 or E-mail me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

Patti Kitkowski

Patti Kitkowski
Acting District Environmental Health Program Chief

c EPO
Matthew Slepin

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
2010 NOV 17 PM 2:09
MAYOR'S OFFICE
COUNTY OF MAUI

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 12, 2010

Ms. Lori Tsuhako, LSW, ACSW
Director of Housing and Human Concerns
County of Maui
2200 Main Street Suite 546
Wailuku, Hawaii 96793

Dear Ms. Tsuhako:

Subject: Request for Comments on the 201-H Application for the Kaiwahine Village Project

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Division of Forestry & Wildlife, Commission on Water Resource Management, Engineering Division, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0414. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

October 21, 2010

MEMORANDUM

RECEIVED
LAND DIVISION
2010 NOV -4 A 11:51
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
__Land Division –
x Historic Preservation

FROM: Charlene Unoki, Assistant Administrator Charlene
SUBJECT: 201-H Application for the Kaiwahine Village Project
LOCATION: Island of Maui
APPLICANT: Chris Hart & Partners on behalf of County of Maui, Department of Housing & Human Concerns

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 10, 2010.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
(X) We have no comments.
( ) Comments are attached.

Signed: [signature]
Date: 11/3/10

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION
2010 NOV -4 A 11: 54
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

LAURA H. THIELEN
CHAIRPERSON

WILLIAM D. BALFOUR, JR.
SUMNER ERDMAN
NEAL S. FUJIWARA
CHIYOME L. FUKINO, M.D.
DONNA FAY K. KIYOSAKI, P.E.
LAWRENCE H. MIIKE, M.D., J.D.

LENORE N. OHYE
ACTING DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

October 28, 2010

TO: Russell Y. Tsuji, Administrator
Land Division

FROM: Lenore N. Ohye, Acting Deputy Director *Lenore N. Ohye*
Commission on Water Resource Management

SUBJECT: Kaiwahine Village, Kihei, Maui 201H-38 Application

FILE NO.: N/A
TMK NO.: (2) 3-8-004:028

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://www.hawaii.gov/dlnr/cwrm.

Our comments related to water resources are checked off below.

☒ 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.

☐ 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

☐ 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.

☒ 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EPA as having high water efficiency can be found at http://www.epa.gov/watersense/pp/index.htm.

☒ 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://hawaii.gov/dbedt/czm/initiative/lid.php.

☒ 6. We recommend the use of alternative water sources, wherever practicable.

☐ 7. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:
Additional information and forms are available at http://hawaii.gov/dlnr/cwrm/resources_permits.htm.

☐ 8. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water.

☐ 9. A Well Construction Permit(s) is (are) required any well construction work begins.

☐ 10. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

☐ 11. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.

☐ 12. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

☐ 13. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.

☐ 14. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.

☐ 15. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.

☐ 16. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

☒ OTHER:

The document projects 120 Multi-family dwelling units at the County standard water use, or 67,200 gpd. The proposal incorporates low-flow fixtures, climate-adapted plantings, and best management practices to minimize water use, all of which we recommend. In addition, we encourage alternative sources as much as possible. The current source is projected as the Maui Department of Water Supply's Central Maui Service Area's potable sources, which are currently at maximum use of available ground and surface water sources.

If there are any questions, please contact Charley Ice at 587-0218.

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

'10 OCT 26 PM02:00 ENGINEERING

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

October 21, 2010

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
~~Div. of Boating & Ocean~~ Recreation
x Engineering Division
x ~~Div. of Forestry~~ & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
__Land Division –
x Historic Preservation

RECEIVED
LAND DIVISION
2010 NOV -5 A 10: 4
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

FROM: Charlene Unoki, Assistant Administrator Charlene
SUBJECT: 201-H Application for the Kaiwahine Village Project
LOCATION: Island of Maui
APPLICANT: Chris Hart & Partners on behalf of County of Maui, Department of Housing & Human Concerns

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 10, 2010.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(✓) Comments are attached.

Signed: _____
Date: 11/4/10

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Charlene Unoki
Ref.: 201-H Application for the Kaiwahine Village Project, Kihei
Maui.010

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that part of the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X. The National Flood Insurance Program (NFIP) does not regulate developments within Zone X.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Carter Romero at (808) 961-8943 of the County of Hawaii, Department of Public Works.

( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

( ) Ms. Wynne Ushigome at (808) 241-4890 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

( ) Other: _____

Should you have any questions, please call Mr. Dennis Imada of the Planning Branch at 587-0257.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 11/4/10

LINDA LINGLE
GOVERNOR

RECEIVED
2010 NOV 19 PM 2:35
DHHC-DIRECTOR'S OFFICE
COUNTY OF MAUI

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

MICHAEL D. FORMBY
INTERIM DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
JIRO A. SUMADA

IN REPLY REFER TO:
STP 8.0286

November 12, 2010

Ms. Lori Tsuhako, LSW, ACSW
Director of Housing and Human Concerns
County of Maui
2200 Main Street, Suite 546
Wailuku, Hawaii 96793

Dear Ms. Tsuhako:

Subject: Kawaihine Village Project, 201-H Application
Kihei, Maui
TMK: 3-8-004:028

Thank you for requesting the State Department of Transportation's (DOT) review of the subject affordable housing project which will consist of: 16 1-bedroom units, 88 2-bedroom units and 16 3-bedroom units. Access to the project is from Kaiwahine Street, which intersects Piilani Highway and Hale Kai Street, which connects with Ohukai Street.

Given the project's location, the State highway facility, Piilani Highway will be impacted. The DOT Highways Division is concluding its review the subject project. Upon completion of this review, DOT will provide additional comments as necessary.

DOT appreciates the opportunity to provide comments. If there are any other questions, including the need to meet with DOT Highways Division staff, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at (808) 831-7976.

Very truly yours,

Francis Paul Keeno

for MICHAEL D. FORMBY
Interim Director of Transportation

c: Matthew Slepin, Chris Hart & Partners, Inc.

CHARMAINE TAVARES
Mayor

CHERYL K. OKUMA, Esq.
Director

GREGG KRESGE
Deputy Director

TRACY TAKAMINE, P.E.
Solid Waste Division

DAVID TAYLOR, P.E.
Wastewater Reclamation Division

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2200 MAIN STREET, SUITE 100
WAILUKU, MAUI, HAWAII 96793

November 10, 2010

RECEIVED
2010 NOV 15 PM 3:03
DHHC-DIRECTOR'S OFFICE
COUNTY OF MAUI

Ms. Lori Tsuhako, Director
Department of Housing and Human Concerns
2200 Main Street, Suite 546
Wailuku, Hawaii 96793

SUBJECT: **KAIWAHINE VILLAGE PROJECT**
201-H APPLICATION
TMK (2) 3-8-004:028, KIHEI

We reviewed the subject application and have the following comments:

1. Solid Waste Division comments:

   a. Solid waste and recycling concerns are addressed.

2. Wastewater Reclamation Division (WWRD) comments:

   a. Although wastewater system capacity is currently available as of 11/10/2010, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
   b. Wastewater contribution calculations are required before building permit is issued.
   c. Developer shall pay assessment fees for treatment plant expansion costs in accordance with ordinance setting forth such fees. The property is located in Kihei Sewer Service Area 3.
   d. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.
   e. Plans shall show the existing property sewer service manhole near the property line. If a property sewer service manhole does not exist, one shall be installed.
   f. Non-contact cooling water and condensate should not drain to the wastewater system.

If you have any questions regarding this memorandum, please contact Gregg Kresge at 270-8230.

Sincerely,

CHERYL K. OKUMA
Director of Environmental Management

CHARMAINE TAVARES
Mayor

TAMARA HORCAJO
Director

ZACHARY Z. HELM
Deputy Director

Phone (808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

RECEIVED
2010 NOV -9 AM 9:46
DHHC-DIRECTOR'S OFFICE
COUNTY OF MAUI

October 28, 2010

MEMO TO: LORI TSUHAKO, Director
Department of Housing and Human Concerns

FROM: TAMARA HORCAJO, Director

SUBJECT: **Request for Comments on the 201-H Application for the Kaiwahine Village Project, located at TMK (2) 3-8-004:028, Kihei, Maui**

Our Department has reviewed the 201-H application for the Kaiwahine Village project. The housing development has been identified as 100% affordable, and as such is exempt from the park dedication requirements.

Should you have any questions or concerns, please feel free to call me or Baron Sumida, CIP Coordinator, Parks Planning & Development at Ext. 6173.

c: Patrick Matsui, Chief of Parks Planning & Development

TH:PTM:bks

CHARMAINE TAVARES
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

2010 NOV 23 AM 9:45

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

November 19, 2010

Ms. Lori Tsuhako, LSW, ACSW, Director
Department of Housing and Human Concerns
County of Maui
2200 Main Street, Suite 546
Wailuku, Maui, Hawaii 96793

Dear Ms. Tsuhako:

SUBJECT: 201-H APPLICATION FOR THE PROPOSED KAIWAHINE VILLAGE PROJECT; TMK: (2) 3-8-004:028, KIHEI, MAUI

We reviewed the subject application and have no additional comments.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,

MILTON M. ARAKAWA, A.I.C.P.
Director of Public Works

MMA:MMM:ls
xc: Highways Division
Engineering Division
S:\LUCA\CZM\kaiwahine_village_proj_201h_38004028_ls.wpd

CHARMAINE TAVARES
Mayor
KATHLEEN ROSS AOKI
Director
ANN T. CUA
Deputy Director

COUNTY OF MAUI

DEPARTMENT OF PLANNING

October 28, 2010

RECEIVED
NOV 0 2 2010
CHRIS HART & PARTNERS, INC.
Landscape Architecture

cc: Matt
10/027

Ms. JoAnn Ridao, Deputy Director
Department of Housing and Human Concerns
One Main Plaza Building
2200 Main Street, Suite 546
Wailuku, Hawaii 96793

Mr. Matthew Slepin, Project Manager
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Hawaii 96793

Dear Ms. Ridao and Mr. Slepin:

SUBJECT: 201-H APPLICATION FOR THE PROPOSED KAIWAHINE VILLAGE AFFORDABLE HOUSING PROJECT AND RELATED IMPROVEMENTS, LOCATED AT THE INTERSECTION OF KAIWAHINE STREET AND HALE KAI STREET, KIHEI, MAUI, HAWAII; TMK: (2) 3-8-004:028 (RFC 2010/0165)

The Department of Planning (Department) is in receipt of the above-referenced document for the proposed Kaiwahine Village Affordable Housing Project. The Department understands the proposed action includes the following:

- The Applicant is Royal Main Properties, LLC;
- The Applicant is requesting to develop a 120 multi-family unit subdivision containing a mix of one-, two-, and three-bedroom units in fifteen (15) buildings with off-street parking and associated improvements on approximately 9.289 acres of land;
- The mix of units is proposed to be: sixteen (16) one-bedroom units, eighty-eight (88) two-bedroom units, and sixteen (16) three-bedroom units, with projected sales prices from $180,000 for a one-bedroom unit to $250,000 for a three-bedroom unit; and
- The proposed project will be processed pursuant to Section 201-H38, Hawaii Revised Statutes (HRS).

Based on the foregoing, the Department provides the following comments in preparation of the 201-H application:

1. The land use designations for the Project area are believed to be as follows; however, the Applicant must confirm these zoning designations with the Zoning and Enforcement Division (ZAED), County of Maui and provide a signed Zoning and Flood Confirmation Form from ZAED;

   a. State Land Use – Urban

   b. Kihei-Makena Community Plan – Single-Family (SF)

   c. County Zoning – R-1 Residential (R-1)

   d. Other – The project is NOT located with the Special Management Area (SMA)

2. The Department requests that the Applicant submit the Project for review of parking compliance with regard to adequacy, access, construction, etc. to ZAED for review and comment, while recognizing this is a 201-H project;

3. The Department recommends the Applicant coordinate the Kaiwahine Village Project development (to the extent feasible) with A&B Properties that is developing the adjacent Kihei Residential Project;

4. The Kaiwahine Project is within the proposed urban growth boundaries proposed by the Draft Maui Island Plan;

5. The Department is concerned about the request for exemption from the Council approved Ordinance No. 3683 and the six (6) important conditions of zoning for this particular parcel. The Department requests the Applicant fully address each condition of zoning and reasons for exemption from each condition. The Department also requests the Applicant state the anticipated impact of the proposed exemption on the project **AND** on the associated area and related infrastructure services including traffic mitigation, the Traffic Demand Management Plan, air quality, and provision of water supply;

6. The Department is very concerned about the list of proposed exemptions requested by the Applicant, including but not limited to: an exemption for a written verification of a long-term reliable water supply and of the need for a review by the Director of Water Supply; an exemption from traffic impact fees; an exemption from fire, electrical, plumbing, and building permit fees, as well as inspection fees; an exemption from park dedication and assessment requirements; an exemption from zoning standards of Title 19; and, an exemption from payment of grading, grubbing, and excavation permit fees. An exemption from these various fees and permit requirements may add significant unfunded burdens to providing infrastructure for the project and its residents, including but not limited to parks, schools, water supply, wastewater

management, and traffic. Please address **each** of these issues in detail and reasons that fees and dedications should be exempt for this project;

7. The Department is concerned that the project was originally approved with Conditional Zoning for an R-1 Residential development and that the Applicant is requesting an exemption from a change of zoning to an A-1 Apartment District. An A-1 Apartment District zoning is denser than an R-1 Residential zoning and often requires additional mitigations for traffic, wastewater, and higher-density development. Please address this higher density of the proposed Project and its impact to the surrounding community, especially the Hale Pi'ilani subdivision that is single-family oriented;

8. To further reduce potential impacts from storm water runoff, please provide a more detailed discussion on the alternative of designing the drainage system to retain not only the increase in post-development runoff volume; but also to capture additional pre-development runoff; and

9. Demonstrate how this Project connects to existing and proposed bikeways, greenways and pedestrian trails. Clearly indicate what sustainable and energy-saving features are highlighted by this proposed community. Indicate if the proposed project architecture is designed to incorporate "green" and sustainable design.

Thank you for the opportunity to comment. Please include the Department on the distribution list for further review of the Project. Should you require further clarification, please contact Staff Planner Kurt Wollenhaupt at kurt.wollenhaupt@mauicounty.gov or at (808) 270-1789.

Sincerely,

Kathleen Ross Aoki

KATHLEEN ROSS AOKI
Planning Director

xc: Ann T. Cua, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Aaron H. Shinmoto, PE, Planning Program Administrator (2)
John F. Summers, Planning Program Administrator, Long Range Division
Kurt F. Wollenhaupt, Staff Planner
Project File
General File

KRA:KFW:atn
K:\WP_DOCS\PLANNING\RFC\2010\0165_Kaiwahine Village 201-H\201-H Comments Kaiwahine Village Project.DOC

CHARMAINE TAVARES
MAYOR

DON A. MEDEIROS
Director
WAYNE A. BOTEILHO
Deputy Director
Telephone (808) 270-7511
Facsimile (808) 270-7505

DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI
200 South High Street
Wailuku, Hawaii, USA 96793-2155

November 3, 2010

Mr. Matthew Slepin
Chris Hart & Partners Inc.
115 N. Market Street
Wailuku, Maui, Hawaii 96793

Subject: Kaiwahine Village Project, Kihei

Dear Mr. Slepin,

Thank you for the opportunity to comment on this project. Is the intention that Kaiwahine Street and Hale Kai Street intersect at the property so as to create a continuous route? See your Figure 1 showing the Regional Location.

The department has been looking at ways to connect our communities for a future bus route through this part of Kihei. If the intention is to allow a continuous route from Kaiwahine Street to Hale Kai Street and visa versa then this would be a good bus route through the regional neighborhood.

Please feel free to contact me if you have any questions.

Sincerely,

Don Medeiros
Director

RECEIVED
NOV 0 9 2010
CHRIS HART & [illegible]
Landscape Arch[illegible]

CC: Matt 10/02

CHARMAINE TAVARES
Mayor

JEFFREY K. ENG
Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

RECEIVED
2010 NOV 11 AM 2:39
DHHC DIRECTOR'S OFFICE
COUNTY OF MAUI

November 1, 2010

Ms. Lori Tsuhako, Director
Department of Housing and Human Concerns
County of Maui
2200 Main Street, Suite 546
Wailuku, Hawaii 96793

SUBJECT: 201-H Application for the Kawaihine Village Project
TMK (2) 3-8-004:028, Kihei, Maui

Dear Ms. Tsuhako:

Thank you for the opportunity to comment on this 201-H Application. The Department of Water Supply (DWS) has met with the applicant and discussed measures to ensure minimal impact on the Central Maui water system including extensive water conservation. We recommend that approval of the subject 201-H application be conditioned upon implementation of the following measures:

1. Any off-site water system improvements shall be designed and constructed in accordance with DWS standards and requirements. Furthermore, all such improvements shall be dedicated to the DWS upon inspection and approval by DWS.

2. Total potable allocation from the DWS system shall be limited to 30,000 gpd, or 250 gpd per multi-family unit.

3. All non potable demand shall be served from an on-site privately owned irrigation well to be developed at the applicant's expense.

4. Installation of backflow preventer, approved, installed and tested by a technician certified by the State Department of Health shall be required to mitigate potential effects of cross connection of the dual water system.

5. The project shall be subject to strict water conservation requirements for both its domestic and irrigation demands. A comprehensive water conservation plan demonstrating strict water conservation shall be required to be submitted to the DWS for its approval. The conservation plan should include the following measures:

    1. Start a Water Conservation Program
    a. Install signs encouraging water conservation in public areas.

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410. Or call (202) 720-5964 (voice or TDD)

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b. Seek resident's suggestions on water conservation; put suggestion boxes in prominent areas.
c. Provide information and resources for residents to check for leaks and identify ways they can conserve and provide an easy method for residents to report any leaks/waste found on the property.

2. Indoor Conservation Measures
a. Use EPA WaterSense labeled plumbing fixtures.
b. Install flow reducers and faucet aerators in all plumbing fixtures where-ever possible.
c. Install dual flush toilets with high efficiency models that use 1.28 gallons per flush or less.
d. Install showerheads with a flow rate of 1.5 gpm at 60 psi or less in all units.
e. Install bathroom sink faucets with fixtures that do not exceed 1 gpm at 60 psi. Laundry facilities and/or individual unit machines must use Energy Star labeled washers.
f. Limit the distance from the hot water source to the tap early in the design stage.

3. Exterior Areas
a. Install infrastructure necessary to utilize a future connection to reclaimed water line
b. Plan landscapes that require less water by using native, zone-appropriate plants.
c. Use Smart Approved WaterMark irrigation products. Examples include ET irrigation controllers, drip irrigation, and water saving spray heads.
d. Avoid plant fertilizing and pruning that would stimulate excessive growth.
e. Remove weeds and unhealthy plants so remaining plants can benefit from the water saved. Time watering to occur in the early morning or evening to limit evaporation. Limit turf to as small an area as possible.

Sincerely,

JEFFREY K. ENG
Director
emb

KCA

Kihei Community Association

"Working together to shape our Community's future."

RECEIVED
JUL 23 2010
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning
Co. Matt & Bill

July, 13, 2010

Chris Hart & Partners Inc.
Attn: Mr. Matthew Slepin
115 N. Market St.
Wailuku, HI. 96793-1706

Re: Kaiwahine St. Affordable Housing

Dear Matt,

We want to extend our appreciation to you and your client for meeting with our group and updating us as to your progress on this project.

As you may have surmised, we do have concerns. The following bullet points are some of the suggestions/recommendations we would like you and your client to consider in your final design.

1. Greater mix of unit sizes was suggested, preferred to be more 3 bedroom units
2. The park should be coordinated with the A&B project to avoid repetitive features from the proposed A&B project
3. Bike and pedestrian access was strongly encouraged into the A&B project and then to the A&B proposed commercial shopping area
4. The KCA Urban Design Guidelines were recommended for streetscape features, particularly for street widths, sidewalk details, and tree plantings
5. The use of private streets owned by the AOAO was recommended as opposed to County dedicated streets due to;
    a. Lower land use for right of way
    b. Less expensive streetscape with more flexibility
6. Covered parking was recommended, using carports with solar panels as a way to reduce the cost of the carports. The PV could be used for all units if the units had a main MECO meter with internal private Submetering for billing to individual owners
7. A problem may occur in the design due to the dead end street. Fire Dept will need turn around room

Please feel free to contact me with any questions.

Sincerely,

Michael C. DiBella

P.O. Box 662 – Kihei, HI – 96753 – 808-879-5390 – info@KiheiCommunityAssociation.org

Matt Slepin

From: Darlene Kim
Sent: Wednesday, August 11, 2010 1:33 PM
To: Matt Slepin
Subject: FW: Attn: Matthew Slepin-Kaiwahine Affordable Housing Subdivision

Please see below.

Darlene Kim
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawaii 96793
Phone: 808-242-1955, Ext. 558
Facsimile: 808-242-1956

From: Dave Thomas [mailto:mauitv@hawaii.rr.com]
Sent: Wednesday, August 11, 2010 1:32 PM
To: Darlene Kim
Cc: Alice Thomas
Subject: Attn: Matthew Slepin-Kaiwahine Affordable Housing Subdivision

Dear Mr. Slepin,

Thank you for your letter we received today regarding the Kaiwahine Affordable Housing Subdivision. I wish I could attend your public meeting on 8/19, but I'll be away on business.

Please convey the following opinions at this meeting on behalf of myself and my wife:

We are original owners at Hale Piilani Subdivision on Kaiwahine St. While we definitely support the need for affordable housing on Maui, we **strongly oppose** this project.

1. Many houses in our subdivision and the one above (Hale Kai & Hoalike) have violated building ordinances and have overbuilt their lots. The result is a lot more people living in this area than was originally planned/authorized.
2. Because Kaiolohia, Hale Kai & Hoalike are all narrow streets, Kaiwahine has become a thoroughfare that it was not intended to be. There is already too much traffic and too much speeding on Kaiwahine.
3. There is already a backlog at lights when making a left turn on or off of Piilani Highway from both Kaiwahine and Ohukai.
4. Adding the 500-700 people to this area without another way in & out is not accepatable.
5. All of the streets listed above (other than Ohukai which was just re-paved) are in very bad condition and need to be repaired.
6. What once was a quiet and peaceful neighborhood is no longer that way due to being over populated. Adding hundreds more people to mix is not something we will support.

Thanks in advance for making sure that our opinions are shared.

Mahalo,

Dave & Alice Thomas
303 Kaiwahine St.
Kihei, Maui, HI 96753
(808) 280-2633 mobile
mauitv@hawaii.rr.com

DORVIN D.
Leis co., inc.
MECHANICAL CONTRACTORS
202 Lalo Street • Kahului, Hawaii 96732-2928 • Telephone: (808) 877-3902 • Facsimile: (808) 871-6828
2265 Hoonee Place, Suite #100 Honolulu, HI. 96819 Telephone: (808) 841-2112 Facsimile: (808) 847-1991

August 13, 2010

Chris Hart & Partners, Inc.
Attn: Matthew Slepin, Senior Associate
115 N. Market Street
Wailuku, HI. 96793

Dear Mr. Slepin:

As a longtime resident of Maui Meadows and as President of Dorvin D. Leis Co., Inc., a community-minded company with a large local workforce, we are sensitive to the future well-being of all Maui residents. I support well-planned projects that will provide affordable housing, job opportunities and tax revenue for all Maui residents. I urge you to move forward without delay to realize market and employment needs.

Please feel free to contact me at (808) 357-2630, with any questions you may have or if I can be of any assistance.

Sincerely,

Stephen T. Leis,
President

RECEIVED
AUG 16 2010
CHRIS HART & PA[illegible]
Landscape Archi[illegible]

10/027

CC: Matt

STL/dp

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