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OFC. OF ENVIRONMENTAL
QUALITY CONTROL

Ms. Genevieve K.Y. Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Finding of No Significant Impact (FONSI) for Pipeline Replacement at
Hanapepe River Crossing and Control of Slope Failure at Hanapepe Well No.
3, Tax Map Key: 1-8-04: 3 and 1-8-05: 7, 8, 19 & 24, Fourth Division

The County of Kauai, Department of Water (DOW), has reviewed the comments received during the 30-day public comment period that began on August 23, 2001. We have determined that this project will not have significant environmental effects and therefore have issued a FONSI. Please publish this notice in the February 8, 2002 OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four (4) copies of the Final EA. Please call our consultant, Glen Koyama of Belt Collins Hawaii at (808) 521-5361, if there are any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Ernest Y. W. Lau".

Ernest Y. W. Lau
Manager and Chief Engineer

WE:emi
c: Glen Koyama
Enclosures

4

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2002-02-08-KA-FEA-Hanapepe Pipeline
Replacement

FINAL ENVIRONMENTAL ASSESSMENT

**Pipeline Replacement at Hanapepe
River Crossing and Control of Slope
Failure at Hanapepe Well No. 3, Job No. 97-5
Hanapepe, Kauai, Hawaii**

**Department of Water
County of Kauai**

FINAL ENVIRONMENTAL ASSESSMENT

**PIPELINE REPLACEMENT AT HANAPEPE
RIVER CROSSING AND CONTROL OF SLOPE
FAILURE AT HANAPEPE WELL NO. 3, JOB NO. 97-5
Hanapepe, Kauai, Hawaii**

January 2002

**Prepared for
Department of Water
County of Kauai**

**Prepared by
Belt Collins Hawaii
Honolulu, Hawaii**

TABLE OF CONTENTS

I.	PROPOSING AGENCY	1
II.	ACCEPTING AUTHORITY	1
III.	AGENCIES CONSULTED	1
IV.	DESCRIPTION OF PROPOSED ACTION'S	
	GENERAL CHARACTERISTICS	4
	Description of the Proposed Action	4
	Preliminary Development Schedule	7
	Development Cost	7
V.	DESCRIPTION OF THE AFFECTED ENVIRONMENT	10
	Regional and Project Setting	10
	Existing Land Use	10
	Land Tenure	10
	Physiography	13
	Geology	13
	Soils	13
	Climate	14
	Hydrology	14
	Flora and Fauna	14
	Archaeological and Historic Resources	15
	Cultural Resources	16
	Natural Hazards	16
	Visual Resources	16
VI.	SOCIO-ECONOMIC SETTING	17
	Socio-Economic Setting of the Region	17
	Socio-Economic Impacts	17
	Government Costs and Revenues	18
VII.	PUBLIC FACILITIES AND SERVICES	18
	Circulation and Traffic	18
	Water	18
	Sewer	19
	Electricity	19
	Telephone	19
	Solid Waste Disposal	19
	Police and Fire Protection	19

VIII. RELATIONSHIP TO PUBLIC LAND USE POLICIES	20
Hawaii State Land Use Law	20
State Environmental Policies	20
State Functional Plan	20
Hawaii Coastal Zone Management (CZM) Program	21
Kauai General Plan	21
Kauai Zoning Ordinance	21
Required Permits and Approvals	21
IX. SUMMARY OF MAJOR IMPACTS	21
Construction Impacts	21
Operational Impacts	23
X. PROPOSED MITIGATION MEASURES	23
XI. ALTERNATIVES CONSIDERED	24
No Action	24
Exposed Pipeline	24
River Crossing	24
Alternative Alignment	25
Well No. 3 Site Restoration	25
XII. DETERMINATION	25
XIII. FINDINGS AND REASONS SUPPORTING DETERMINATION	26
XIV. COMMENTS FROM AND RESPONSES TO PUBLIC AGENCIES AND PRIVATE INDIVIDUALS	27
XV. REFERENCES	

APPENDICES

- A. An Archaeological Assessment of a Proposed Water-Line and Well Site B, Hanapepe, Kona District, Island of Kauai, (TMK: 01-08-04; 05)
- B. Traditional and Cultural Practice Assessment for the Proposed Hanapepe River Water Line Project, Hanapepe Ahupuaa, Kona (or Waimea) District, Island of Kauai (TMK 01-08-04: -05)

LIST OF FIGURES

<u>Figure No.</u>	<u>Title</u>	<u>Page</u>
1.	Location Map	2
2.	Tax Map 1-8-05	3
3.	Proposed Pipeline Replacement and Pavement Cover	5
4.	Typical Section of Pipeline Replacement with Pavement Cover	6
5.	Well Site 3 Improvements	8
6.	Buried Retaining Wall Section	9
7.	Existing Pipeline Site	11
8.	Existing Well Site	12

I. PROPOSING AGENCY

The County of Kauai, Department of Water (DOW) is proposing to repair and upgrade its existing water infrastructure in Hanapepe Valley, Kauai.

The project site is situated approximately 2.5 miles from the shoreline along Hanapepe River at about the 70-foot elevation of the valley. Access to the remote site is via a one-lane dirt road.

The proposed action will occur in two areas: one location comprising approximately 9,000 sq. ft. and involves a pipeline replacement and the other comprising approximately 3,500 sq. ft. and includes a well site repair and modification. The project site is identified as Tax Map Key: 1-8-04: 3 and 1-8-05: 7, 8, 19 & 24, Fourth Division (see Figures 1 & 2).

The proposed action will use public funds, facilities and land. Therefore, it is subject to the provisions of Chapter 343, Hawaii Revised Statutes (HRS), the State of Hawaii environmental review process.

II. ACCEPTING AUTHORITY

The accepting authority for the Environmental Assessment (EA) is the County of Kauai, DOW.

III. AGENCIES CONSULTED

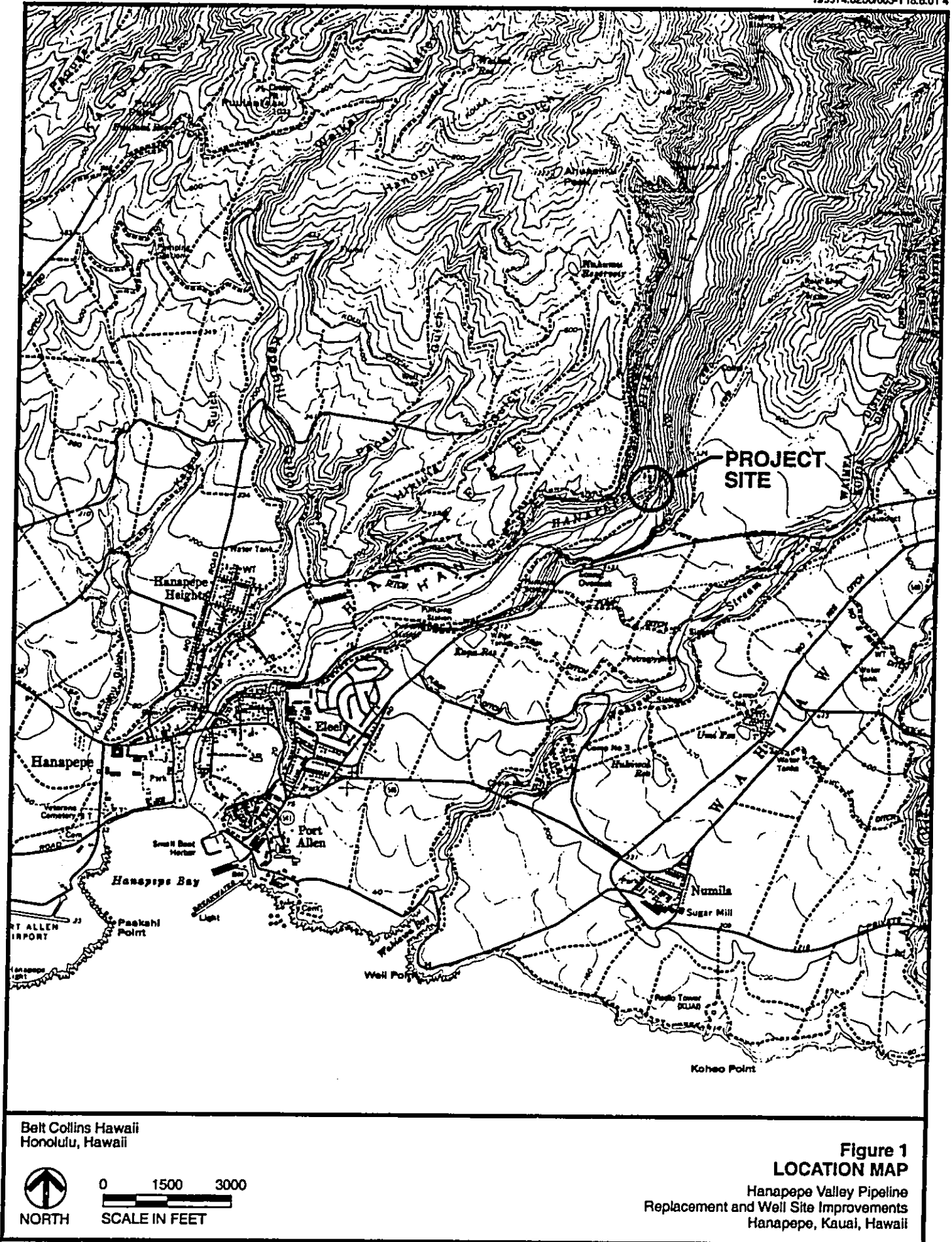
The following agencies were requested input on the proposed action during the early consultation period.

Federal Government

Department of the Army, Corps of Engineers
Natural Resources Conservation Services

State of Hawaii

Department of Health, Environmental Management Division
Department of Land and Natural Resources, Land Division
Department of Land and Natural Resources, State Historic Preservation
Division
Office of Hawaiian Affairs



County of Kauai
Department of Planning
Department of Public Works

Utilities
Kauai Electric

IV. DESCRIPTION OF PROPOSED ACTION'S GENERAL CHARACTERISTICS

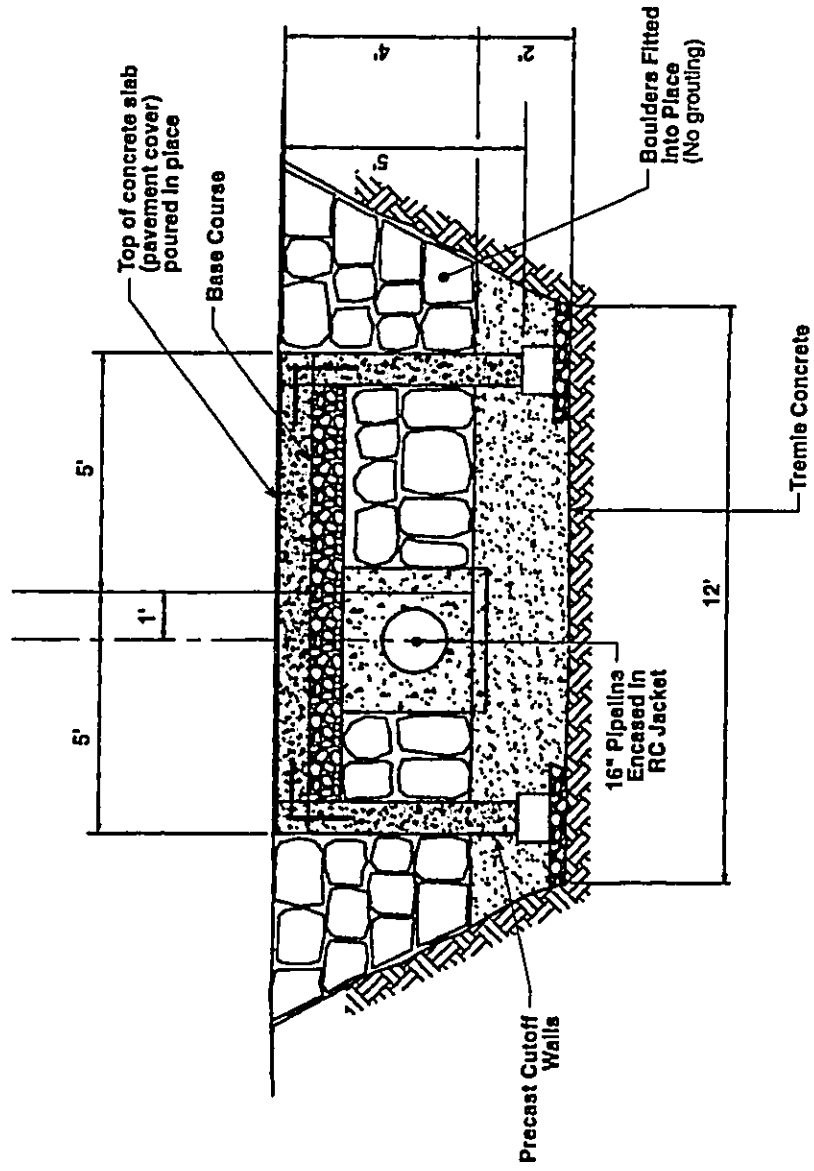
Description of the Proposed Action

The DOW is proposing to replace an approximately 240-foot long section of a 12-inch deteriorating pipeline with a 16-inch pipeline and construct an accompanying 10-foot wide concrete pavement cover to protect the installed water utility (see Figures 3 and 4). The concrete cover will also act to stabilize and reduce erosion in the project area, as well as serve as a paved access road to replace an existing dirt road.

DOW is also proposing to repair a failed slope embankment at an existing well site, known as Well Site 3, located approximately 800 feet north of the pipeline replacement site. This repair work will include the installation of a buried retaining wall to stabilize the downslope side of the well site.

The proposed 16-inch replacement line will be approximately 270 feet in length, and its accompanying pavement cover will be slightly longer at approximately 280 feet. The new line will be located on the western side of Hanapepe River parallel with and approximately 20 feet from the existing pipeline. The present line follows a weathered dirt road originating from Hanapepe town.

Severe floodwaters have on occasion flowed through the area and along the dirt road. Installation of the replacement line will require trenching and placement of the new pipeline with a concrete jacket in the boulder-backfilled trench. Atop the pipeline will be an 8-inch layer of base course and a concrete slab supported by precast cutoff walls. The concrete feature is designed to serve as a hard protective cover for the underground pipe as well as a replacement for the existing dirt road. The boulder-backfill that occupies both sides of the concrete slab or pavement cover will provide improved drainage along this route which has served as a drainage course for overflow waters from Hanapepe River.



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Honolulu, Hawaii



Figure 4
TYPICAL SECTION OF PIPELINE
REPLACEMENT WITH PAVEMENT COVER
Hanapepe Valley Pipeline
Replacement and Well Site Improvements
Hanapepe, Kauai, Hawaii

On the opposite or eastern side of the river, approximately 50 feet of the dirt road will be stabilized with a 10-foot wide concrete pavement. Vehicles currently cross Hanapepe River at this location over an existing concrete ford (see Figure 3).

Approximately 800 feet upriver of the pipeline site is a well and pump facility. It is situated on an approximately 3,500 sq. ft. level area that is carved into a slope adjacent to the river. The DOW is proposing to repair the failed slope embankment on the eastern side of the well site with a buried retaining wall (see Figures 5 and 6). A damaged chain-link fence located on the failed embankment will be replaced with a new chain-link fence atop the retaining wall. The buried retaining wall will include a 4" diameter perforated drainpipe that will connect to a weep hole drain line.

A damaged drainage outlet in the collapsed embankment area also will be repaired. A new runoff apron constructed of concrete and concrete rubble masonry (crm) will be attached to the existing drainage structure.

Other improvements to the site will include replacement and realignment of two 1-1/2 inch underground pipelines that connect the pump and existing control building. Asphalt concrete covering the well site will be removed and replaced with concrete pavement, the existing control building will be reroofed and repainted, and the existing pump and aboveground piping will be furnished with a new coating.

Preliminary Development Schedule

Construction of the proposed improvements is expected to begin in the second quarter of 2002 after all government permits and approvals are secured. Completion is expected to occur approximately nine months after construction is initiated.

Development Cost

The cost of construction is projected to be approximately \$1.2 million. This estimate does not include planning and design fees.

The source of funding for the construction is the DOW; no federal, State or private monies are involved.

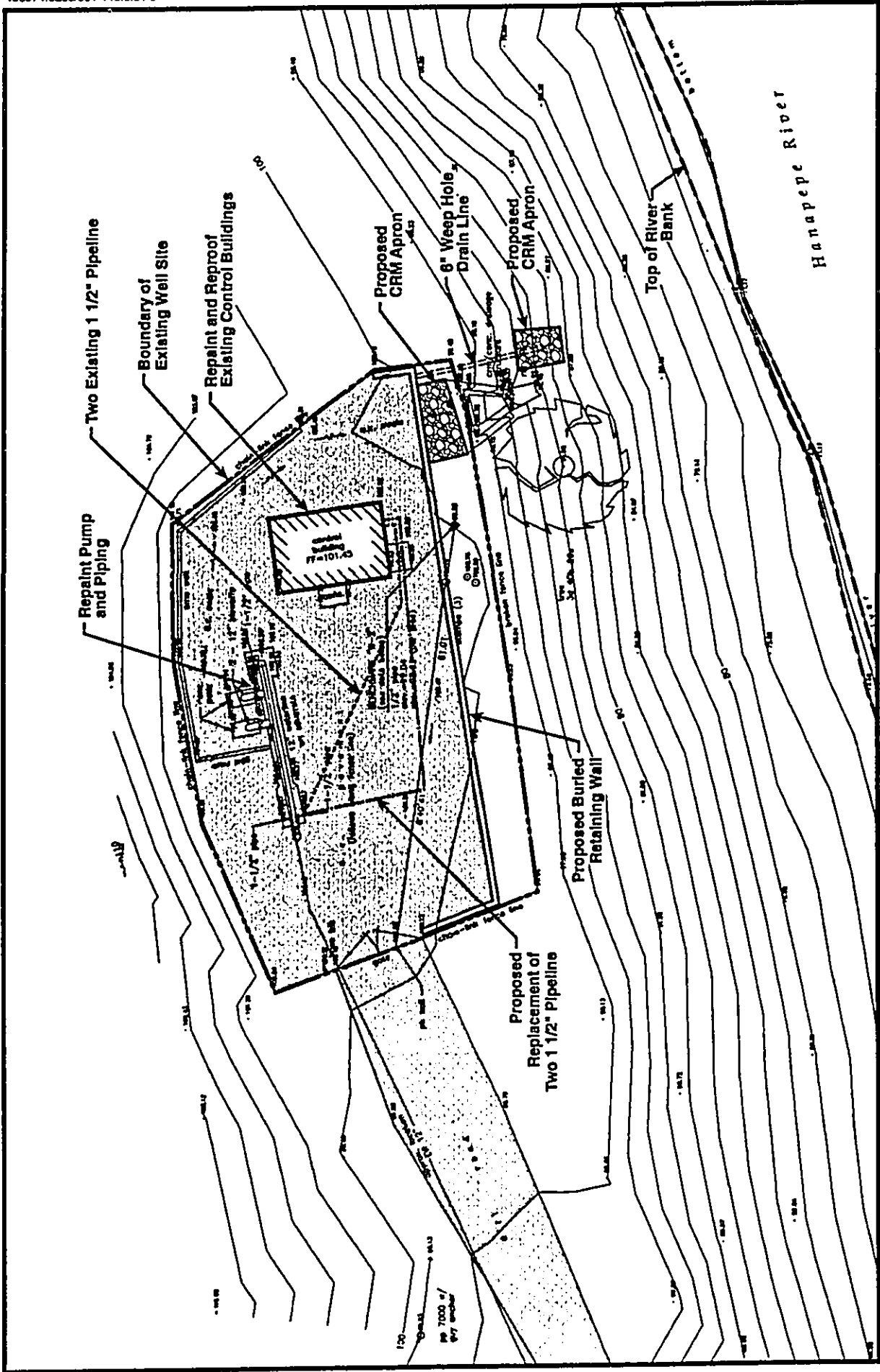
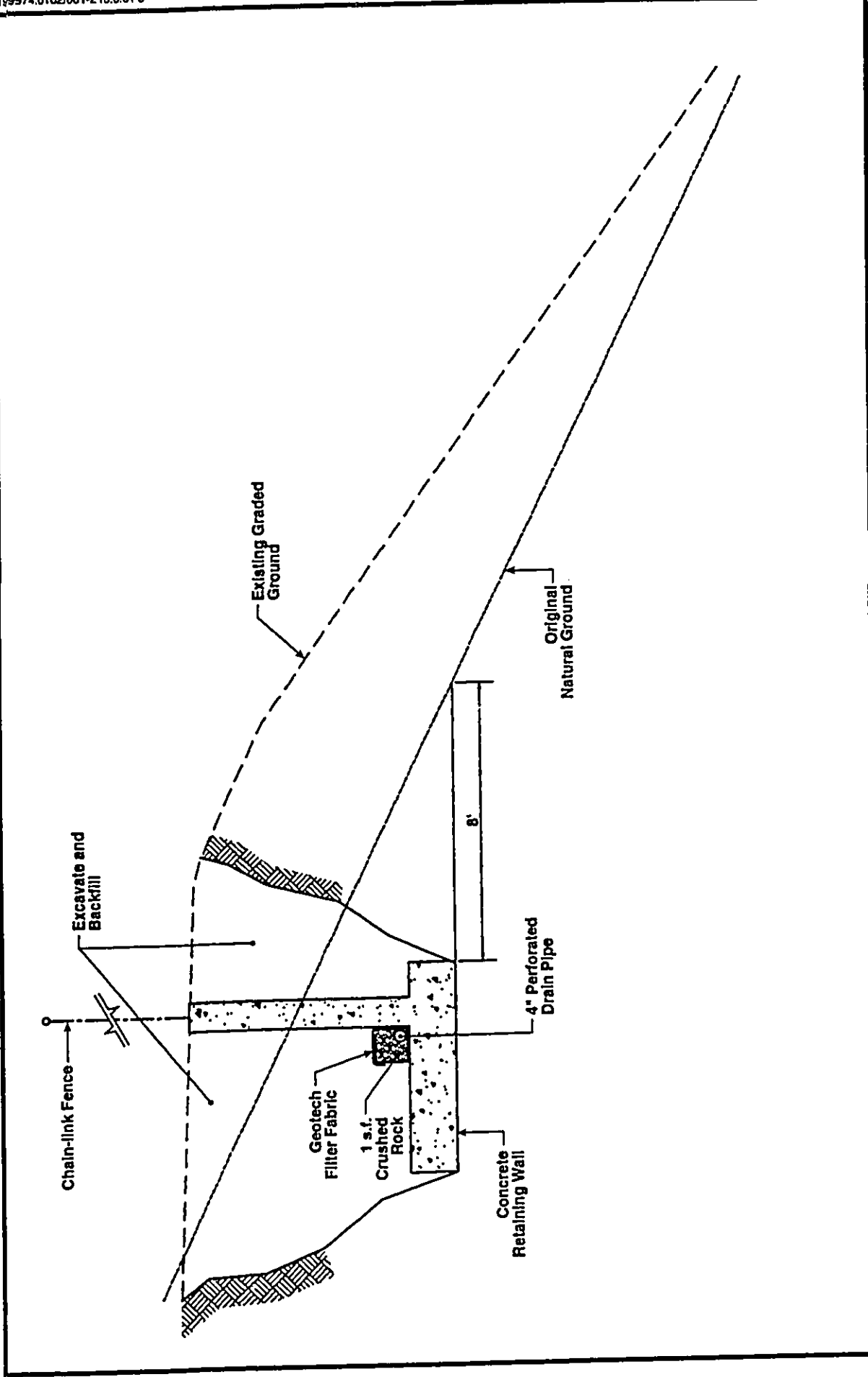


Figure 5
WELL SITE 3 IMPROVEMENTS
 Hanapepe Valley Pipeline
 Replacement and Well Site Improvements
 Hanapepe, Kauai, Hawaii

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Figure 6
BURIED RETAINING WALL SECTION
Hanapepe Valley Pipeline
Replacement and Well Site Improvements
Hanapepe, Kauai, Hawaii

V. DESCRIPTION OF THE AFFECTED ENVIRONMENT

Regional and Project Setting

Hanapepe Valley is in the Waimea District of the island of Kauai. It extends more than 13.5 miles from Hanapepe Bay to the Waialeale Mountain. Meandering through the valley is Hanapepe River, a perennial river that is fed by a number of major and minor tributaries.

At the *makai* end of the valley around Hanapepe Bay is Hanapepe town, a small residential community with a population of approximately 3,000. Settlement of the community extends to about a mile into the valley. Farmlands occupy the valley floor above the community for about another mile. Beyond the farm lands, the valley floor is essentially unoccupied and in a natural state. A portion of this area was formerly in agricultural use.

The areas above the valley walls on the adjacent plateaus are large-scale agricultural lands currently in sugar cane production or pasture use.

Existing Land Use

The project vicinity is comprised of former agricultural lands that are now overgrown with vegetation. A single residence is located several hundred feet from the project site, and access to the area is via a one-lane dirt road.

The DOW has two wells sites in the valley: Well Site 2 which is located near the residence and Well Site 3 which is located approximately 500 feet north of Well Site 2. The water transmission line from these wells follow the existing access road (see Figure 7) to the river where the line is encased in a concrete ford across the waterway. The line then continues on to Hanapepe town.

Well Site 3 is located approximately 1,000 feet upriver of the crossing on a graded area against an earth slope above to the river (see Figure 8). The lands around the well site are undeveloped.

Land Tenure

The project site is owned by the State of Hawaii. A portion of the site is leased to Manuel Andrade and May M. Corr.

In December 1980, the State Board of Land and Natural Resources (BLNR) granted the DOW a right-of-entry and non-exclusive easement for the existing pipeline. In February 1982, the BLNR granted a right-of-entry for Well Site 3.

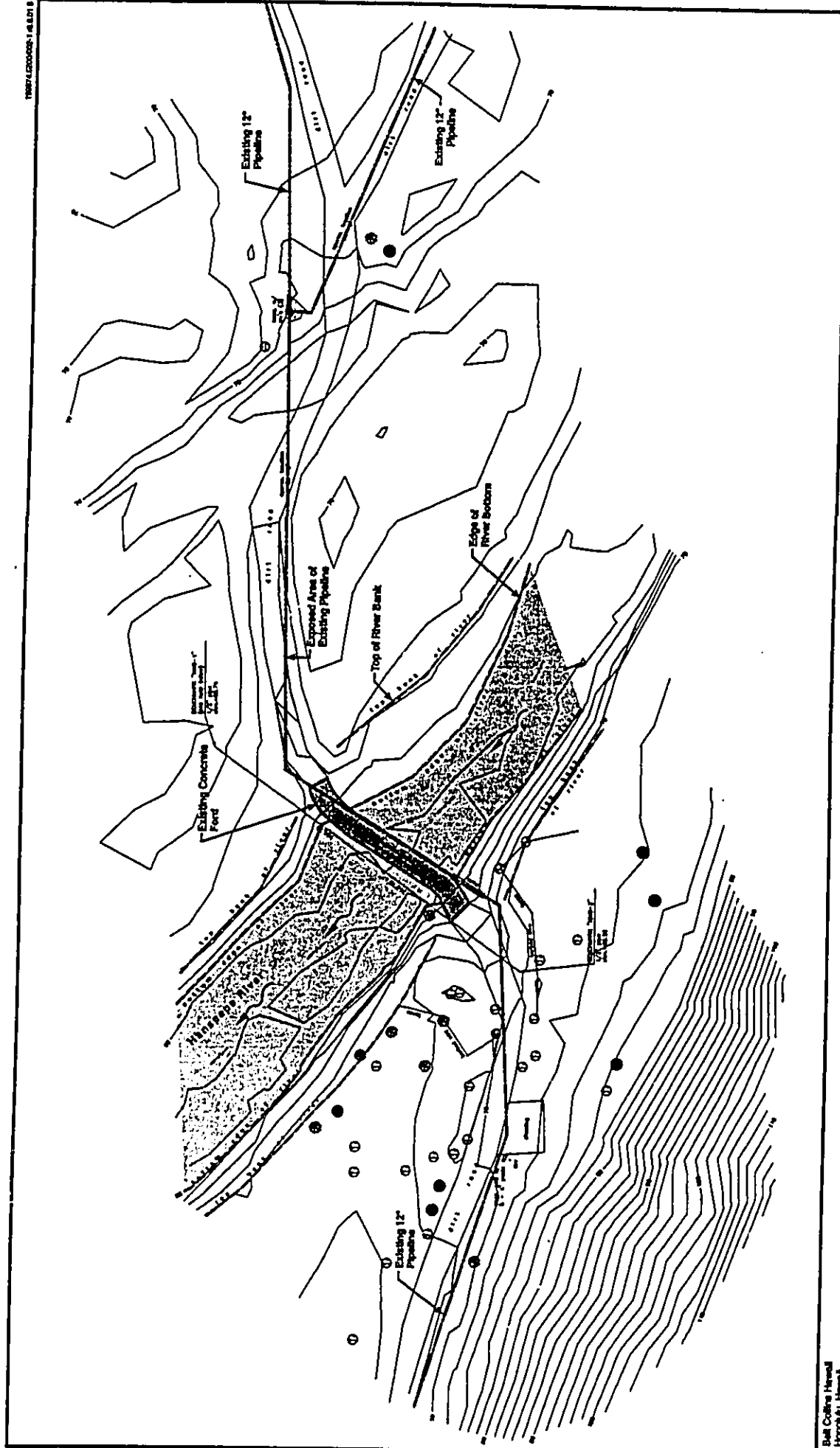


Figure 7
EXISTING PIPELINE SITE
 Hanalei Valley Pipeline
 Replacement and Well Site Improvements
 Hanalei, Kauai, Hawaii



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 Honolulu, Hawaii

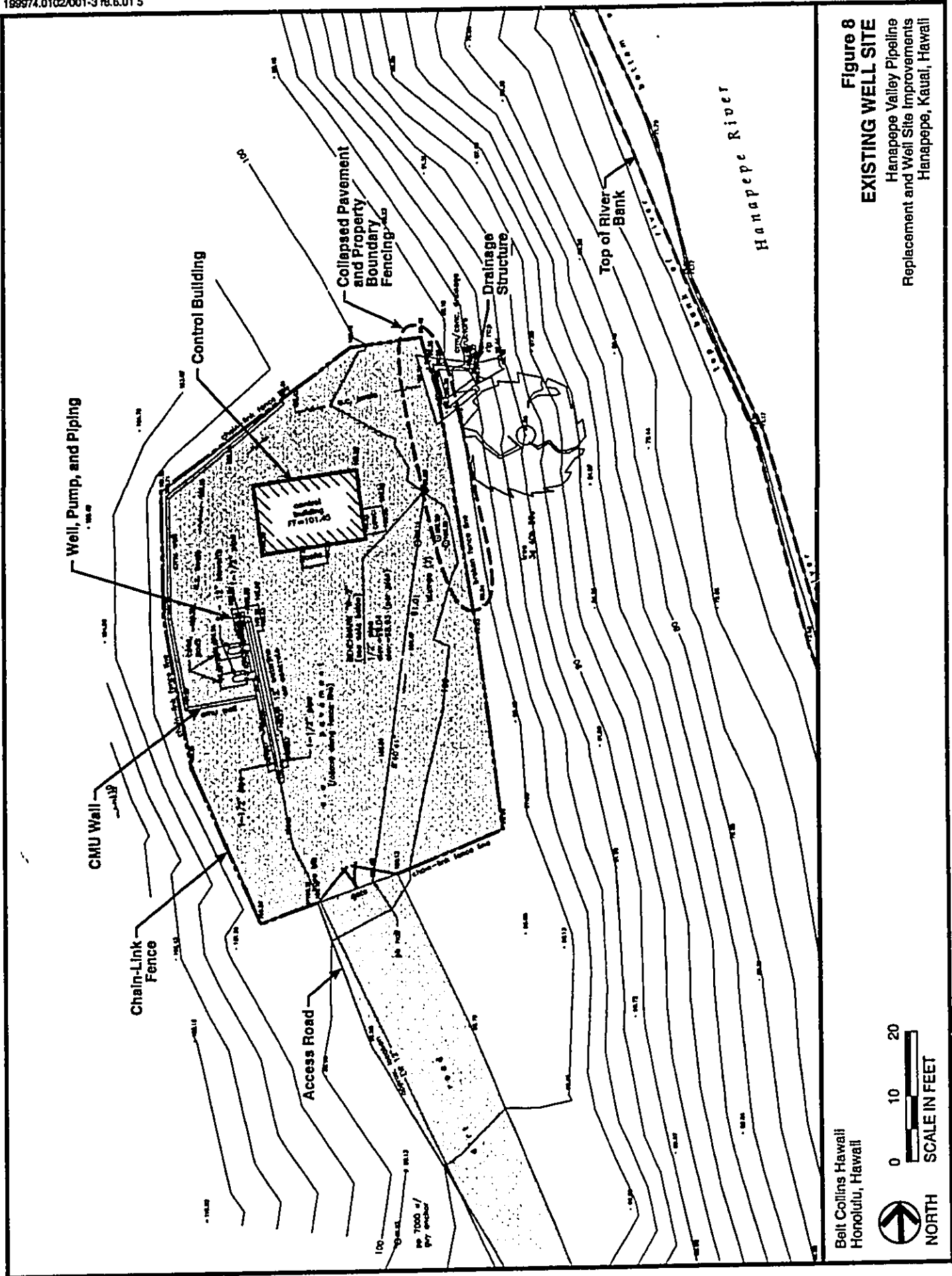


Figure 8
EXISTING WELL SITE
 Hanapepe Valley Pipeline
 Replacement and Well Site Improvements
 Hanapepe, Kauai, Hawaii

Belt Collins Hawaii
 Honolulu, Hawaii

0 10 20
 SCALE IN FEET

NORTH

Physiography

The pipeline replacement site is located above the riverbank but within the adjacent river overflow or flood area. The elevation is approximately 70 feet above mean sea level (msl) and is relatively level. On the western bank, preliminary estimates show that the flood boundary extends approximately 50 to 90 feet from the river edge. Over the years, the buried pipeline in the flood zone has been subject to ground erosion and, as a result, is exposed at several locations at the surface.

Well Site 3 is located on an approximately 3,500 sq. ft. graded site about 50 feet above the river. Slope failure has caused the site's downslope side to collapse; thus calling for remedial or repair measures. The earth slope has an overall gradient of 75 percent and is part of the lower valley wall that abuts the western side of the river. The valley wall reaches a height of approximately 370 feet above the river at the well location.

Geology

The Hanapepe region is located on a portion of a collapsed basalt volcanic shield that over centuries has built up again. The region is deeply eroded and partly veneered with much later volcanic eruptions. Waimea Valley and Hanapepe Valley are two of the most significant valleys in the southwestern section of the island. Most of the soils in the project area are residual and saprolite soils, derived from the in-situ weathering of igneous rocks and recent stream deposits.

Soils

In the summer of 2000, Geolabs, Inc. conducted a geotechnical engineering exploration study of the project site.¹ The soil on the pipeline replacement site is characterized as a thin surficial fill layer, approximately three feet thick, consisting of clayey silt and silty sand with some gravel and cobbles.

The soil at the well site consists of a thin surface layer of loose to medium dense gravelly sand underlain by medium stiff silty clay fill over saprolite extending to the maximum depth explored of approximately 21 feet. Generally, the thickness of the fill material is approximately 1 to 6 feet from the existing ground surface. The saprolite consists of clayey or silty material with some cobbles and gravel.

¹ Geotechnical Engineering Exploration, Replacement of Pipeline at Hanapepe Stream Crossing and Control of Slope Failure at Hanapepe Well "B", Hanapepe, Kauai, Hawaii. Prepared by Geolabs, Inc., July 17, 2000.

Climate

Mean average temperature is 75 degree (Fahrenheit) with variations of plus or minus 5 degrees between summer and winter. Rainfall varies with elevation. In Hanapepe, the median annual rainfall is about 25 inches, and atop Mt. Waialeale approximately 13.5 miles away at the head of Hanapepe Valley, the median annual rainfall is about 465 inches. Mt. Waialeale is considered one of the wettest places in the world. Winds are predominantly from the northeast, but in the valley, winds are influenced by the high valley walls and meandering valley floor.

Hydrology

Hanapepe River is a perennial waterway that extends (with its tributaries) from Hanapepe Bay to Mount Waialeale, a distance of approximately 13.5 miles. During heavy and extensive rainfall in the *mauka* lands, water overflows the riverbanks. At the lower end of the river, however, around Hanapepe town and its farm lands, fortified embankments control the flow of water within the river banks.

According to the Federal Insurance Rate Map (FIRM), Panel No. 180-C, dated March 4, 1987, the project site is located above the detailed flood study limits of Hanapepe River. The County Department of Public Works, thus, will require a flood study to determine flood elevations, flood fringe and floodway limits. The project owner must demonstrate that its project will not cause a rise in the base flood elevation.

During Geolabs' site investigation, groundwater was encountered in the drilled borings at depths of 6 and 7.5 feet below the existing ground surface. The engineering consultant noted, however, that the groundwater level might vary significantly depending on seasonal rainfall, time of year and other factors including distance from the river.

Flora and Fauna

Vegetation in the project area consists of opiuma (*Pithecellobium dulce*), Java plum (*Syzygium Cumini*), monkeypod (*Samanea saman*), and haole koa (*Leucaena leucocephala*). None of these are native species. There is some wild sugar cane in scattered areas, which confirm Cultural Surveys Hawaii, Inc.'s archaeological study that identified sugar cane crops as early agricultural activities in the area (see next section). Historic records also show that other crops, such as rice, taro, and sweet potato, were previously grown.

Fauna at the project site includes primarily bird species associated with the lowland areas. Most common are the species that are friendly to people and their activities, such as common myna, barred dove, spotted dove, house sparrow, house finch, and spotted munia. The more cautious species, which shy away from people and stay in remote and unpopulated areas, include mockingbird, black-head munia, black francolin, Erckel's francolin and western meadowlark. Cultural Surveys Hawaii indicated it observed a medium-sized rusty-brown bird, possibly the Kauai Chinese Thrush at the pipeline site.

None of these fauna species are classified as rare, endangered or threaten. The project site is not located in any national wildlife refuge, national park, state wildlife sanctuary or wildlife preserve, state forest reserve, state natural area reserve system or private preserve. The project site is not designated by the federal government as a critical habitat.

Archaeological and Historic Resources

In September 2000, Cultural Surveys Hawaii, Inc. (CSHI) conducted an archaeological assessment of the project site (See Appendix A). Its field investigation revealed that much of the land was previously altered by sugar cane cultivation, flood control activities, construction of the access road, and more recently water resource development. The narrow flood plain on either side of the meandering river was formally extensive taro lo'i, which was later converted to plowed sugar cane fields where practical.

Research by CSHI revealed that the concrete ford is at the approximate location of two 'auwai on the eastern bank and two 'auwai and associated fields on the western bank. Field investigation, however, noted that the only visible remnant of the former 'auwai and fields are off of the existing dirt road leading up to the ford. The archaeologist observed a shallow soil ditch extending downslope (*makai* or south) beyond the project area. The ditch is a trough-like feature that represents an old taro 'auwai and was probably utilized during early commercial sugar cane times. The ditch is "cut" by the existing road in a number of places and has been obliterated where the concrete ford was constructed on the east bank.

On the west bank, a wide river overflow channel was constructed, probably where the 'auwai was previously situated. Based on present observations, regular river flooding has washed out the 'auwai and downslope lo'i.

At the well site, CSHI indicated that no archaeological features of any kind were observed.

Based on these field inspections, CSHI stated that no further archaeological research or work appears to be warranted.

Cultural Resources

In early 2001, CSHI conducted a traditional and cultural practice assessment of the project area (See Appendix B). A historic background study was conducted from available documents, and two informants were interviewed at length. Several other residents or former residents also contributed information about Hanapepe.

Hanapepe has had a rich and exciting past. Its history includes use of the coastal land and valley by Hawaiians during the pre-contact period, post-contact period, 18th century, 19th century, and modern day. Some of the primary uses of the valley have been in diversified agriculture, including such crops as sugar cane, taro, rice, coconut palm, sweet potato, and pasture grass. The river was also used as a resource for subsistence and recreation. Even deeper in the valley are natural resources that were sought by early Hawaiians.

The people who were interviewed and had intimate knowledge of the area generally felt that the proposed project was good and that it would have no adverse effect on traditional cultural practices. One of the interviewees, however, indicated that in the event human remains are encountered, all work should be halted and the inadvertent discovery be immediately reported to the State Historic Preservation Division.

Natural Hazards

The most obvious potential natural hazard in the project area is flooding from river overflow. From past events, this occurrence has resulted in exposing at several locations the existing pipeline along the dirt access road. The DOW will bury the replacement pipeline in a safer location under a protective cover.

Brush fire is also a potential hazard, but would not be significantly detrimental to the project. The ground improvements would suffer only minor damage, if any, from such occurrences.

Visual Resources

The project site is visible from the lookouts along Kaumualii Highway. Motorists on the State road, however, do not have a specific view of the site. The distant location of the property and elevation of the highway make identification

of the project area difficult to pinpoint, especially when motorists focus their attention on the road. Additionally, existing tree covers shield any activities on the ground.

From the site, the most prominent views are of the river and valley walls. There are no views of the shoreline or ocean.

VI. SOCIO-ECONOMIC SETTING

Socio-Economic Setting of the Region

Hanapepe, gateway to the west side of the island, is a small community rich in its historic past. During the early years of Port Allen harbor and a small airport, Hanapepe became a thriving regional center for West Kauai. With the opening of a major airport and harbor in Lihue, Hanapepe's role as a commerce and trade center for the island declined.² Although industrial uses continue around Port Allen, Hanapepe is now largely a bedroom community with some small-scale commercial businesses within the town center. In the 1990 population census, Hanapepe had a population of approximately 3,000.

Over the years, the valley behind the town, including the project area, was used for various agricultural endeavors. Sugar cane was a major crop during the valley's rich past. Sweet potato and rice were also grown. Presently, agricultural activities include taro harvesting and personal farm operations. In the project area, agricultural use has been abandoned and the land is now used for water source projects.

Socio-Economic Impacts

Replacement of the existing pipeline will provide better assurance that water will be delivered to the Hanapepe community. Residences and businesses as well as public services, which depend on a reliable water system, will continue to function and operate in a normal fashion. Disruption to water service could result in economic disaster to some businesses depending on the length of the disruption.

Construction of the proposed improvements will generate short-term beneficial effects in the local economy. Construction labor will be mobilized resulting in salaries paid. The additional personal income would then generate

² Hanapepe Community Study. Prepared by Karl Kim, Susan Machida, Sharon Rodgers and Hitoshi Furuta, Department of Urban and Regional Planning, University of Hawaii, 1991.

spending in the retail markets for personal items. The construction company would also acquire materials and supplies from vendors in construction-related industries creating secondary impacts.

Government Costs and Revenues

The proposed improvements are estimated to cost approximately \$1.2 million in DOW funds. County funds are under a separate budget from DOW's budget, hence no County funds are provided for this project.

Personal income generated by the project construction is expected to produce government revenues via State income tax. Excise tax on the sale of personal and business items is another source of government revenue. Any increased revenues generated from property taxes will not benefit DOW but will benefit the County.

VII. PUBLIC FACILITIES AND SERVICES

Circulation and Traffic

Access to the project site is via Hanapepe Road and Ko Road, a 2.0 mile unimproved right-of-way into the valley. The dirt road, which is owned by the State of Hawaii, provides access to a number of private and public properties in the valley, and its terminus is the water resource facilities at the project site. Traffic on the access is characterized as very light in the lower end of the valley to occasional in the deeper end of the valley.

Water

The DOW has two well sites in the project area: Well No. 2 and Well No. 3. Site improvements will be made to Well No. 3, while Well No. 2 located approximately 500 feet to the south of Well No. 3, does not have any planned improvements at this time. Both well sites have a control building and pump, in addition to a well.

The two wells currently feed a 12-inch transmission line that crosses Hanapepe River at an existing concrete ford at the 60-foot elevation of the river. The transmission line continues approximately 2.0 miles toward the *makai* end of the valley to the town of Hanapepe where it serves customers. The portion of the line that is on the land adjacent to the concrete ford on the western side of the river is planned to be replaced.

Sewer

There are no public sewage collection and disposal systems in the project area. A residence near the project has its own private disposal system.

The proposed project does not call for the use of any sewage collection and disposal system.

Electricity

An overhead electrical line from the Hanapepe Lookout area along Kaumualii Highway extends down the valley wall across Hanapepe River and connects with the well site to provide power to the pump for the well. Power service is provided by Kauai Electric.

The proposed improvements will not require the actual use of this utility.

Telephone

A telephone line from the Hanapepe Lookout area along Kaumualii Highway extends down the valley wall across Hanapepe River to the project site to control the pumping equipment at the well site. Although the DOW uses this telephone line to control its well operation, the line is owned by Verizon Hawaii.

As with electricity, the proposed improvements will not require the actual use of telephone services.

Solid Waste Disposal

There are no solid waste collection services to the project site. Solid waste generated during construction will be removed from the property and transported to the Kekaha Landfill, the nearest solid waste public disposal site. This regional landfill has accommodations for green waste.

Police and Fire Protection

The County Police Department has its headquarters in Lihue and substations in the outlying areas. The nearest substation to the project site is the Waimea Sub-Station located approximately six miles from Hanapepe. It contains one administrative person and a staff of 28 police officers operating on three shifts. The beat coverage for this substation extends from Polihale to Poipu.

The nearest fire station is located in Hanapepe town. It is equipped with a tank truck with an extension ladder. It is manned 24-hours a day by full-time personnel. In the event of a brush fire at the project site, the fire department would use water from its tank truck or its portable flotation pump on the river to hose down the fire. For larger fires, commercial helicopters at the Hanapepe airstrip would be summons to assist in the operation. These helicopters are under a special contract agreement with the County.

VIII. RELATIONSHIP TO PUBLIC LAND USE POLICIES

Hawaii State Land Use Law

The project site is located in the Conservation District according to the State Land Use District Maps. The proposed action, hence, would be subject to the review of the Board of Land and Natural Resources, State of Hawaii.

After reviewing the proposed project, the Department of Land and Natural Resources indicated in a letter, dated October 25, 2001, that a Conservation District Use Permit will not be necessary since the proposed action is considered either "accessory structure, or replacement or reconstruction of existing structures."

State Environmental Policies

The proposed action is consistent with the environmental policies of Chapter 344, HRS, which state, among others, to conserve and protect the natural resources of the state and enhance the quality of life by establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment, which is uniquely Hawaiian. During the planning process, the DOW selected the proposed action from various alternatives after considering the environmental effects. The selected action provides the most environmentally compatible solution to the required work.

State Functional Plan

The State Conservation Functional Plan (1991) has objectives and policies relating to the management of the state's natural resources. The plan relies on the increased vigilance of individuals and public and private agencies and organizations in protecting these resources.

The proposed action calls for the repair and upgrade of an existing utility. It will not interfere with the objectives and policies of the Functional Plan to inventory and establish a data base of natural resources in the islands, to identify suitable sites for potential commercial use of natural resources, to establish criteria for management and develop regulatory provisions for natural resources, to establish coordination, enhancement and protection programs for fragile or rare natural resources, and to expand and promote public conservation ethics through education.

Hawaii Coastal Zone Management (CZM) Program

A CZM Consistency Certification will be required if a U.S. Department of the Army Permit is sought for the proposed project. The CZM Consistency Certification is issued by the Office of Planning, State of Hawaii. Present plans show that the proposed action will not require a U.S. Department of the Army Permit.

Kauai General Plan

The Kauai General Plan was updated in 2000. The land use section of the General Plan designates the project area as Open. The proposed action involves improvements to an existing utility and is consistent with the land use policies of the General Plan.

Kauai Zoning Ordinance

Since the project area is located in the State Conservation District, the County relinquishes land use control over the area to the State Board of Land and Natural Resources. There are no County zoning requirements for the area.

Required Permits and Approvals

Permits and approvals required for the proposed action are a Building Permit, Grading Permit and Flood Zone District Regulations Compliance from the County of Kauai.

IX. SUMMARY OF MAJOR IMPACTS

Construction Impacts

Heavy construction equipment will be used during construction of the replacement pipeline, pavement covering, and Well No. 3 site improvements.

The replacement line will require a trench measuring approximately 6 feet deep and 12 to 18 feet wide, placement of the pipeline encased in concrete, backfill composed of boulders, precast cutoff walls, and tremie concrete.

Approximately 1,370 cubic yards of material will be excavated for the trench and shoulder area. After the pipeline is installed, a layer of base course and concrete slab or pavement covering will be laid in place. The hard covering will also serve as a replacement road for the adjacent dirt road and the boulder-backfill will provide improved drainage within the project area. The excavated material from the trenching operation will be used to cover the existing access road.

Although the pipeline replacement site will require clearing of vegetation to make way for the pipeline and pavement cover, the area is not considered a critical habitat occupied by rare, threaten or endangered wildlife. The species that occur in the area are common and extremely mobile. They would occupy other sites in the vicinity during construction and return to the area after construction is completed.

At the well site, excavation will be required for the buried retaining wall. Trenching during the construction phase will be done to establish a base for the new structure. The buried feature will be constructed of reinforced concrete and have a length and vertical measurement of approximately 94 feet and 8 feet, respectively. The top of the wall will be at grade with the site.

Approximately 400 cu. yd. of material will be excavated during trenching. The excavated material will be stored on site during the trenching operation and backfilled after the wall is completed. The backfill will be compacted and a layer of base course will be installed. The asphalt concrete that currently covers the rest of the well site will be removed and a new layer of concrete will be laid over the entire property.

Since the retaining wall will be located further in from the well site boundary and the new pavement will be laid within the retaining wall, the paved portion of the well site will be smaller than the original asphalt concrete area. As described above, other improvements also will be made to the control building, well pump, and piping.

Construction at the replacement pipeline and well sites will involve the use of a backhoe, dump trucks, a boom-mounted truck, dozer and mini roller. Dust and noise are expected to be generated, and groundwater may be encountered in the trenching work near the river for the replacement pipeline. Construction

equipment is expected to be stored on site to minimize mobilization on the local roadways between the construction yard and project site.

Potential runoff from the construction site to the adjacent river may occur during heavy rainfall. Hence, runoff control measures are planned to prevent or reduce discharges to the river. These measures are discussed in the next section, entitled Proposed Mitigation Measures.

Operational Impacts

The proposed improvements will result in permanent ground features that do not call for any active operational activities except for periodic maintenance. Once completed, the project impacts would be primarily visual. Notably, the improvements are designed to blend with the surrounding environment. Rock material common to the region will be used in the construction, and the pavement covering will conform to the natural grade in the area. Further, the pavement covering will minimize erosion, and the boulder-backfill along either side of the pavement covering will allow rapid ground percolation and improve the area's drainage.

Well No. 3's retaining wall will stabilize and establish a strong foundation and support for the site. Surface drainage from the well facility will be less since the paved portion of the property will be reduced from the original site. No on-site operational activities are anticipated except for periodic maintenance.

X. PROPOSED MITIGATION MEASURES

Mitigation measures will be employed by the construction contractor to insure that the least amount of project impacts occur on the surrounding environment. Except for a lone dwelling, there are no residences near the project site. Implementation of dust control measures, thus, would not be critical. If dust do become a major effect and impact the nearby residence, earth-stirring activities will cease until wind conditions are calm, areas of exposed dirt will be covered, and/or dust screens will be installed, if necessary.

Generated construction noise will be in compliance with the State noise control standards and requirements. Compliance would be part of the construction contract and the responsibility of the selected contractor.

Prior to construction, the DOW or its construction contractor through an archaeology consultant will prepare an archaeological mitigation plan for review and acceptance by the State Historic Preservation Division. During construction,

the plan will be implemented to insure that no significant archaeological features are adversely impacted.

Erosion and sedimentation control measures will be employed to insure that no runoff from the construction site flows into the adjacent river. If water is encountered during trenching operations for the replacement pipeline, a dewatering process involving discharge of water back into the back trenches or into a sedimentation pond will be used. No discharge of trench water to the river will occur.

All solid waste or debris generated on the property during construction will be collected and hauled away from the site to a public landfill.

XI. ALTERNATIVES CONSIDERED

No Action

If no action occurs on the project site and conditions are allowed to continue as they have, the existing pipeline will progressively deteriorate and have an increased possibility of a line breakage or leak. This may result in a loss of water and a disruption in water service to the Hanapepe community. Well Site No. 3 will continue to erode on the downslope side, and eventually, the erosion will weaken the site and damage the well equipment. This option is not acceptable.

Exposed Pipeline

This alternative calls for placement of a cover over the exposed line either with concrete or additional earth material. It would provide short-term temporary relief, however in the long-term, the pipeline would probably be exposed again or another section of the line that is unprotected would be exposed and deterioration would occur. The area is subject to periodic floods that make the site's long-term topographic condition unpredictable. Thus, a long-term permanent solution would reduce the risk of failure and be more appropriate for the project.

River Crossing

Several alternatives were explored for the pipeline replacement across Hanapepe River. One alternative involved the use of a bridge to carry the pipeline across the river. Another involved the reconstruction of the ford with the replacement pipeline buried in the new crossing. A third alternative

involved the placement of the new pipeline in an expanded width of the existing crossing.

After a review and analysis of these alternatives, none were selected. The choices proved to be extremely expensive and involved numerous environmental considerations. Although the existing pipeline across the river is old, it is still in acceptable condition and is protected by the existing concrete ford. The DOW has decided that this section of the pipe will be kept intact and only the section beyond the ford where definite signs of deterioration appear will be replaced.

Alternative Alignment

An alternative alignment for the replacement pipeline will not be feasible. The proposed route follows the existing access road which also serves as a secondary drainage course for the overflow waters of Hanapepe River. The pavement cover for the pipeline provides protection for the utility as well as stabilization for the access road and drainage course. A significantly different alignment would not work with the existing condition of the area.

Well No. 3 Site Restoration

An alternative to construction of the buried retaining wall for Well Site 3 is to restore the site to its pre-collapse condition. This solution would return the site to its originally developed status and maintain the same potential condition that resulted in the failed slope embankment.

The new buried retaining wall would be designed to provide more stability to the sloped site and withstand more severe erosional effects from heavy runoff over the property.

XII. DETERMINATION

This Environmental Assessment demonstrates that the proposed action will have no significant adverse impact on the environment and that an Environmental Impact Statement is not warranted. A Finding of No Significant Impact, therefore, is determined for this project.

XIII. FINDINGS AND REASONS SUPPORTING DETERMINATION

The following findings and reasons indicate that the proposed action will have no significant adverse impact on the environment and consequently support the above determination.

- o Alternative designs were considered to provide the best solution for replacing and repairing the existing water system without placing an irrevocable commitment to loss or destruction on the area's natural resources. An archaeological mitigation plan will be prepared prior to and implemented during project construction to insure that no significant archaeological features are adversely impacted.
- o The proposed action calls for replacement, repair and enhancement of an existing utility. No new uses are planned. The proposed improvements do not call for changes that would curtail the range of beneficial uses of the environment.
- o As demonstrated in this document, the proposed action is consistent with the State's long-term environmental policies and guidelines as expressed in Chapter 344, HRS.
- o The proposed action is expected to sustain the positive economic effects that a utility provides to a community. Further, the construction activity associated with the proposed improvements will generate jobs and infuse business and personal income into the local economy. No negative effects on the social welfare of the local community are anticipated.
- o The proposed improvements will not result in the use of hazardous materials or construction methodology that would be detrimental to the public health of the area residents.
- o There will be no significant adverse social impact generated by the proposed project. The proposed action will not change the existing land use nor generate increased resident population. It will not result in significant negative impacts on traffic or overburden existing public facilities and services.
- o The proposed action is intended to replace, repair, and improve conditions to an existing water system. No long-term degradation of the natural environment nor negative impact from a larger project is anticipated.

- o No rare, threatened, or endangered wildlife or flora species will be affected by the proposed action.
- o The anticipated impacts associated with project construction, such as dust and noise, are short-term and temporary. These impacts will be minimized by implementation of mitigation measures in accordance with applicable laws, statutes, ordinances, and rules and regulations of the federal government, State of Hawaii, and County of Kauai. Erosion and sedimentation control measures will be implemented to prevent construction-related runoff from impacting adjacent water resources.
- o Although the site is subject to periodic floods, the proposed improvements are designed to receive river overflows and allow their passage over the project area.
- o The proposed improvements are ground improvements that do not disrupt existing view corridors.
- o The proposed improvements will not require excessive energy consumption during their operation.

XIV. COMMENTS FROM AND RESPONSES TO PUBLIC AGENCIES AND PRIVATE INDIVIDUALS

A Draft Environmental Assessment for this project was transmitted to the following agencies, organizations, and individuals for review and comment. The parties that responded are indicated below and a copy of their correspondence with a response from the proposing agency is attached to this section. Comments from these agencies, organizations and individuals have been incorporated, where applicable, into this Final Environmental Assessment.

<u>Federal Agencies</u>	<u>Agencies Responded</u>	<u>Agencies Responding w/No Comment</u>	<u>Agency Letters & Responses Attached in this Section</u>
Department of the Army, U.S. Army Corps of Engineers	X		X
Department of Agriculture, Natural Resources Conservation Service			

<u>State Agencies</u>	<u>Agencies Responded</u>	<u>Agencies Responding w/No Comment</u>	<u>Agency Letters & Responses Attached in this Section</u>
Department of Business, Economic Development and Tourism, Office of Planning			
Department of Health			
Department of Land and Natural Resources, Historic Preservation Division	X		X
Department of Land and Natural Resources, Land Division	X		X
Department of Land and Natural Resources, Water Resource Management Commission	X	(meeting- see Belt Collins response [1/22/02] to OEQC comment letter)	
Office of Environmental Quality Control	X		X
Office of Hawaiian Affairs	X		X
<u>City & County Agencies</u>			
Department of Planning	X		X
Department of Public Works	X		X
Police Department			
Fire Department			
<u>Utility Companies</u>			
The Gas Company	X		X
Kauai Electric			
Verizon Hawaii			
<u>Property Lessees and Residents</u>			
Mr. Lawrence Vidinha			
Ms. May Makaanui Hoopii Corr			
Mr. Richard Corr			
Ms. Wilma Holi			
Mr. William Makaanui, Jr.			
Ms. Blanche Corr			



DEPARTMENT OF THE ARMY
U S ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

SENT TO
ATTENTION OF

August 30, 2001

Regulatory Branch

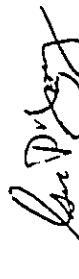
Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Thank you for the opportunity to review the Draft Environmental Impact Statement for the Pipeline Replacement and Well Site Repairs, Hanapepe, Hawaii, dated August 2001. The comments contained in my letter to you dated June 13, 2001 are still appropriate. The information requested in that letter has not yet been included in the document.

If you have any questions concerning this matter, please contact William Lennan of my staff at 438-6986 or FAX 438-4060, and reference File No. 200100531.

Sincerely,


George P. Young, P.E.
Chief, Regulatory Branch



January 22, 2002
1999-74-2000 / 02P-12

Mr. George P. Young, P.E., Chief,
Regulatory Branch
U.S. Army Engineer District, Honolulu
Department of the Army
Fort Shafter, Hawaii 96858-5440

Dear Mr. Young:

Environmental Assessment
Proposed Pipeline Replacement and Well Site Repair
Hanapepe, Kauai, Hawaii TMK 1-8-04: 3 and 1-8-05: 7, 8, 19, & 24

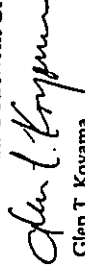
Thank you for your letter of August 30, 2001 regarding the Draft Environmental Assessment for the proposed pipeline replacement and well site repair work in Hanapepe, Kauai.

Pursuant to your earlier letter of June 13, 2001, there are no wetlands in the project area and all construction work will occur above the ordinary high-water mark of the river. Figure 3 of the Draft EA shows the location of the proposed improvements.

We appreciate your comments on the project.

Sincerely yours,

BELT COLLINS HAWAII LTD.


Glen T. Koyama

Honolulu
Aieaha
Guam
Heng Fong
Malaysia
Philippines
Suva
Singapore
Thailand

GTK:jf

cc: William Eddy, Kauai County Department of Water



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Lanikuhoua Building, Room 5615
801 Kalia Boulevard
Honolulu, Hawaii 96813

DELLAMARE A. CAVETT AND
GOVERNOR OF HAWAII
COMMISSIONER OF LAND AND NATURAL RESOURCES

DEPUTY
JANET E. LAWRENCE
LAND, TERRESTRIAL

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCES
MANAGEMENT
CONSERVATION AND RESOURCES
MANAGEMENT
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND

LOG NO: 28168 ✓
DOC NO: 0109NM12

October 5, 2001

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Blvd., 1st Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

SUBJECT: *Historic Preservation Review – Draft EA of Pipeline
Replacement and Well Site Repairs
Hanapepe, Kona District, Island Of Kauai
TMK: 1-8-04: 3 and 1-8-05: 7, 8, 19, & 24*

This letter reviews the EA and the accompanying archaeological assessment (Kikiolo, Borhwick & Hammit 2001. An Archaeological Assessment of Proposed Waterline and Well Site B, Hanapepe, Cultural Surveys Hawaii ms.). The traditional and cultural assessment will be reviewed separately by our Culture and History Branch.

The background section of the report indicates that in pre-European and early 1800s times, this general area was used for habitation and agriculture (irrigated and dryland). The fieldwork (an inspection of the surface) found no historic sites in the existing well area, and the area proposed for the waterline replacement appears to be altered extensively, and no historic sites were seen. However, in areas nearby the waterline, agricultural sites were observed, and the report states that it is not known how extensive the previous plowing was in this area. It does seem possible that although the surface part of agricultural sites have been destroyed, subsurface portions might survive – since the extent of past plowing is uncertain. Some archaeological testing appears to be needed to evaluate this situation.

Thus, before we can concur with the conclusion that no historic sites are in the project area, archaeological testing should take place in areas of the waterline corridor where it is unclear if extensive plowing destroyed historic sites. An addendum report documenting this testing work needs to be submitted to our Division for review.

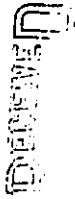
We will await the addendum report. If you have any further questions, please contact Nancy McMahon of our office at 742-7033.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

NM:amk

c. KIBC
Dee Crowell, County of Kauai



1 2001 DEC 19 P 3:33
BELT COLLINS HAWAII
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
Kakuhewa Building, Room 555
601 Kamohala Boulevard
Kapolei, Hawaii 96707



GLAUCIE E. SOLOMON-KAMAILI CHAIRPERSON
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPUTY
JAMIE E. LAMWOLD
LEWIS, MISSOURI

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSIONER OF WATER RESOURCES
MANAGEMENT AND RESOURCES
DEPARTMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PLANS

December 6, 2001

Mr. Glen T. Koyama
Belt Collins Hawaii LTD.
680 Ala Moana Blvd., First Floor
Honolulu, Hawaii 96813-5406

LOG NO: 28774 ✓
DOC NO: 0112NM01

Dear Mr. Koyama:

SUBJECT: Historic Preservation Review - Draft EA of Pipeline Replacement and Well Site Repairs and An Archaeological Assessment of Proposed Waterline and Well Site B, Hanapepe, Kona District, Island Of Kauai (Kukui, Borthwick and Hammett, CSH, 2001).
TMK: 1-8-04: 3 and 1-8-05: 7, 8, 19, & 24

We received a fax of the grading limits for this project from your consultant archaeologist, Cultural Surveys Hawaii. To clarify our previous comments, early maps and adjacent areas clearly still have agricultural features. It is not known how extensive the previous plowing has been in the project area.

So we believe that further archaeological testing should take place where it is unclear that extensive plowing has destroyed historic sites along the waterline corridor. This work can be done during the grading work. Once the results of this testing are in then we will be able to make a determination of the effect of this project on historic sites. An addendum report documenting this testing work shall be submitted to the State Historic Preservation Division for review and approval.

If you have any further questions, please contact Nancy McMahon of our office at 742-7033.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

NM:amk

c. Dee Crowell, Planning Dept.



January 22, 2002
1999-74-2000 / 02P-13

Don Hibbard, Ph.D., Administrator
State Historic Preservation Division
Department of Land and Natural Resources
Kakuhewa Building, Room 555
601 Kamohala Boulevard
Kapolei, Hawaii 96707

Dear Dr. Hibbard:

Environmental Assessment
Proposed Pipeline Replacement and Well Site Repair
Hanapepe, Kauai, Hawaii TMK: 1-8-04: 3 and 1-8-05: 7, 8, 19, & 24

Thank you for your letters of October 5, 2001 and December 6, 2001 regarding the Draft Environmental Assessment for the proposed pipeline replacement and well site repair work in Hanapepe, Kauai.

As you recommended, further archaeological testing will be done along the pipeline corridor where it is unclear that extensive plowing has destroyed historic sites. This testing will take place during grading work. The results of the testing will be reported to your office immediately for review and approval and will be included in an addendum to Cultural Surveys Hawaii's report entitled, *An Archaeological Assessment of a Proposed Water-Line and Well Site B, Hanapepe, Kona District, Island of Kauai* (TMK: 01-08-04, 05), prepared in October 2000.

We appreciate your comments on the proposed project.

Sincerely yours,

BELT COLLINS HAWAII LTD.

Glen T. Koyama

GTK:kif

cc: William Eddy, Kauai County Department of Water

Honolulu
Austin
Oahu
Honolulu
Maui
Philadelphia
Seattle
Singapore
Tulane

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PHONE (808) 594-1188



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPOLAHU BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

FAX (808) 594-1185

HRD01-283

September 13, 2001

Glen T. Koyama
Bell Collins Hawaii, Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, HI 96813-5406

Subject: Draft Environmental Assessment Pipeline Replacement and Well Site Repairs
Hanapepe, Hawaii I, TRK 1-8-04; 3 and 1-8-05; 7, 8, 19 & 24

Dear Mr. Koyama,

Thank you for the opportunity to comment on the draft environmental assessment (EA) for the above-referenced project.

CULTURAL RESOURCES

The draft EA states that the Department of Water will prepare an archaeological mitigation plan for acceptance by the State Historic Preservation Division. This plan will be important as the archaeological assessment indicates that no archaeological projects have been conducted in this area. OHA requests that the plan include provisions for a cultural monitor as the project will require extensive ground disturbing activities and given Hanapepe's rich history. A cultural monitor works in conjunction with the archaeological monitor to ensure that cultural deposits which are inadvertently discovered are handled in a manner that is culturally appropriate. The cultural monitor should have some understanding and practice in the use of Hawaiian cultural protocol, ability to relate with sensitivity to the handling of Native Hawaiian remains, and possess traditional knowledge of families, the history and genealogy of the area. OHA also requests that the plan be included in the EA and subject to public review as a means of determining the adequacy of the plan in its protection of cultural resources. At the very least, OHA asks the DOW to provide our agency with a copy of this plan prior to groundbreaking.

The Traditional and Cultural Practices Assessment, with its heavy emphasis on the history of Hanapepe, does not appear appropriately directed toward the impact of the project on traditional and customary practices in the present day. This misdirection is indicated by the fact that the assessment's recommendation is not on point with respect to practices; the assessment concludes "Based on the findings from the traditional cultural practices assessment, no further archaeological research or work appears warranted." This statement does not address the project's impacts on

cultural practices as a traditional and cultural practices assessment must do, distinct from the archeological assessment.

GROUNDWATER SUPPLY

The draft EA states that groundwater was encountered at depths of 6 and 7.5 feet below. The replacement pipeline requires a trench measuring 6 feet deep which means that the likelihood of impacting groundwater sources is high. The EA's mitigation for this is vague, revealing only that a dewatering process will discharge water into back trenches or into a sedimentation pond. OHA requests that the EA sufficiently assess dewatering impacts and describe the process to be used. The EA should include specific measures to ensure that disposal of the discharged water will be done in accordance with applicable federal, state, and city law. Coordination with and approval from Department of Health maybe required.

If you have any questions, please contact Sharla Mantley, Policy Analyst at 594-1944.

Sincerely,

Colin C. Kippen, Jr.
Deputy Administrator

CK: sam

cc: OHA Board of Trustees
Clyde W. Namu'o, Administrator
Kawai CAC



January 22, 2002
1999-74-2000 / 02P-14

Mr. Colin C. Kippen, Jr., Deputy Administrator
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Kippen:

**Environmental Assessment
Proposed Pipeline Replacement and Well Site Repair
Hanapepe, Kauai, Hawaii TMS 1-8-04: 3 and 1-8-05: 7, 8, 19, & 24**

Thank you for your letter of September 13, 2001 regarding the Draft Environmental Assessment for the proposed pipeline replacement and well site repair work in Hanapepe, Kauai.

The request for a cultural monitor does not appear to have any mechanism for public administration or review for compliance. There is at this time no agency responsible for "cultural monitoring." We anticipate that there will be a monitor for archaeological sites and deposits and if and when any of these samples are uncovered, the State Historic Preservation Division and Office of Hawaiian Affairs will be notified. Work will be temporarily ceased and will not recommence until proper treatment occurs. At that time, OHA could decide on an appropriate inspector to determine if further cultural assessment and mitigation is necessary.

Attached is a list and accompanying information of cultural resource persons who have contributed to the traditional and cultural practices assessment for the project. This information should indicate that the study did not rely on just historic background data. Notably, the interviews have provided extensive personal accounts in the area.

The Department of Water (DOW) is proposing to discharge accumulated water from the construction trenches into back or previous trenches or into sedimentation ponds to avoid the release of such water into the nearby river. The basic concept of the DOW's intent provides the parameter for the final construction design. The DOW will provide specific language defining the contractor obligation to implement water quality control measures and to comply with all applicable federal, state, and county laws. The final mitigation plan will be prepared by the construction contractor based on the actual site condition and the available technology and equipment.

We appreciate your comments on the proposed project.

Sincerely yours,

BELT COLLINS HAWAII LTD.

Glen T. Koyama
Glen T. Koyama

GTK:lf
Attachment
cc: William Eddy, Kauai County Department of Water

Belt Collins Hawaii Ltd
600 Al Moana Boulevard, First Floor • Honolulu, Hawaii 96813 USA
Tel: 808 521 5351 • Fax: 808 538 7818 • hawaii@belcollins.com • www.belcollins.com

TABLE: Results of Community Consultations for Hanapepe Project

Key:
Y = Yes
N = No
A = Attempted (at least 3 attempts were made to contact individual, with no response)
S = Some knowledge of the 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	Referrals	Comments
Ms. La France Kapaka-Arboleda	Kauai Island Burial Council, Chair	Y	N	Y	suggested 4 persons
Mr. Kai'ana Markell	Historic Preservation Burial Staff	A	--	--	no response to letter or phone call
Mr. Nathan Napoka	Department of Land and Natural Resources, Culture and History Branch Chief	A	--	--	not in Hawai'i at this time
Ms. Holly McEldowney	Department of Land and Natural Resources, Culture and History	Y	N	Y	suggested contacting Ms. Kapaka-Arboleda & Ms. Wilma Holi
Ms. Nancy McMahon	State Historic Preservation Division, Kauai Office	Y	S	Y	suggested 5 persons, 1 in addition to those already provided by Ms. Kapaka-Arboleda
Mr. Collin Kippen	OHA, Legal Department	Y	--	--	no response to letter
Mr. Donald Cataluna	OHA, Kauai Island member	Y	--	--	no response to letter
Mr. Kaiipo Akana	former Kauai Burial Council member, archaeologist with Cultural Surveys	Y	S	Y	family member owns nearby property

Honolulu
Aiea
Oahu
Kauai
Niihau
Puuhi
Kauai
Niihau
Kauai
Niihau

Name	Affiliation	Contacted	Personal Knowledge	Referrals	Comments
Ms. Molly Summers	Kaui'i Community College professor of Hawaiian language	Y	N	Y	2 referrals
Ms. Cheryl Lovell-Obatake	former KIBC member	Y	N	N	1 referral
Ms. Wilma Holi	former KIBC member, local resident; family associated with Hanapepe	Y	Y	Y	all day interview and visit to site. Declined recorded interview
Ms. May Makanui Hoopii Corr	83-year old abutting land owner; her childhood spent in the project '31	Y	Y	N	family of K. Akana; phone interview 2 times for approx. 1 hour each time; Makanui family only persons living in that part of the valley in late 19 th and early 20 th C.
Mr. Richard Corr	Son of Ms. May Corr Hanapepe laro farmer	Y	Y	N	W. Holi & K. Akana referral; Holi & Creed interviewed him informally for about 1/2 hour
Ms. Judy Naumu-Stewart	local resident, grew up in the area	Y	-	-	no phone number - no response to letter
Mr. Kenneth Chang	82-year old former resident of Hanapepe	Y	N	Y	1/2 hour phone conversation with Mr. Chang through his granddaughter Nanette
Ms. Aletha Kaohi	member of long-time Hanapepe family	Y	-	-	never responded due to a family crisis

Name	Affiliation	Contacted	Personal Knowledge	Referrals	Comments
Mr. Richard Paganawan	Iua Kumu, cultural specialist, former Queen Emma Trustee	Y	N	-	1/2 hour phone interview on practice of Iua
non disclosed names	Samuel and Rachel Moke family members, ancient Hanapepe residents	Y	S	N	3-hour personal conversation - persons declined to be interviewed but shared Hanapepe cultural information

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division
Honolulu, Hawaii

Ref:RD.DT

OCT 25 2001

Mr. Glen Koyama
Belt Collins Hawaii
680 Ala Moana Blvd., First Floor
Honolulu, HI 96813

Subject: Conservation District Use Application for a Water Pipeline
Replacement and Well Site Repair by the Kaula County
Department of Water at Hanapepe, Kaula, Hawaii, TMK 1-8-
04:03 and 1-8-05: 7, 8, 19 & 24

Dear Mr. Koyama,

Thank you for submitting Conservation District Use Application (CDUA) for a Water Pipeline Replacement and Well Site Repair on behalf of the Kaula County Department of Water at TMKs 1-8-04-03 and 1-8-04: 07, 08, 19 and 24.

Our records show that CDUA KA-1423 was approved in 1982 for installation of a 900 gallon per minute water pump and related infrastructure, and pertains to the same TMK parcels and structures as the subject CDUA. And, as a result of a telephone conversation between yourself and staff planner Dawn Takeuchi on October 24, 2001, it was agreed that the proposed project generally does not go beyond the scope of the CDUA KA-1423 project. Rather, the replacement of the pipeline, construction of the concrete pavement and the repair of a failed slope embankment should be considered either accessory structure, or replacement or reconstruction of existing structures.

Therefore, we find that a CDUA is unnecessary for the proposed project. We are returning the application as well as the accompanying \$200.00 application fee, thereby denying acceptance of the application pursuant to Chapter 13-5-31, Hawaii Administrative Rules.

Alternatively, under Chapter 13-5-23, Hawaii Administrative Rules, construction or placement of structures accessory to an existing structure under an existing conservation district use permit requires a site plan approval. Therefore, please submit construction, grading or any other site plans for the proposed project to the department for review and approval along with a \$50.00 application fee.

Should you have any questions regarding this matter, please contact Dawn Takeuchi of our Planning Branch at (808) 587-0380.

Aloha,

Harry Yada, Acting Administrator



January 22, 2002
1999-74-2000 / 02P-15

Mr. Harry Yada
Land Division
Department of Land and Natural Resources
State of Hawaii
1151 Punchbowl Street, Room 220
Honolulu, Hawaii 96813

Dear Mr. Yada:

Environmental Assessment
Proposed Pipeline Replacement and Well Site Repair
Hanapepe, Kaula, Hawaii, TMK 1-8-04: 3 and 1-8-05: 7, 8, 19, & 24

Thank you for your letter of October 25, 2001 regarding the Conservation District Use Application for the proposed pipeline replacement and well site repair work in Hanapepe, Kaula.

We acknowledge your determination that a new Conservation District Use Application is not necessary for the proposed work at the above-described site.

We appreciate your comment on the proposed project.

Sincerely yours,

Glen T. Koyama
Glen T. Koyama
BELT COLLINS HAWAII LTD.

GTK:lf

cc: William Eddy, Kaula County Department of Water

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MARYANNE W. KUSAKA
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PLANNING DEPARTMENT

September 13, 2001

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PLANNING DIRECTOR
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Glen T. Koyama
Belt Collins Hawaii Ltd.
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Honolulu, Hawaii 96813-5406

SUBJECT: Draft Environmental Assessment - Pipeline Replacement and Well Site Repairs
Hanapepe, Kauai, TMKs: 1-8-04: 3 and 1-8-05: 7, 8, 19, and 24

We have reviewed the Draft Environmental Assessment for the pipeline replacement and repair of the existing well site and have no objections to the proposed project. However, please be aware that the project is situated in the Conservation State Land Use District. We recommend that the State Department of Land and Natural Resources (DLNR) be contacted.

Should you have any questions, please feel free to contact Keith Nitta of my staff at 241-6677.

SHEILAH N. MIYAKE
Deputy Planning Director

cc: Water Department

Kapule Building • 4444 Rice Street, Suite 473 • Lihue, Kauai, Hawaii 96766
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January 22, 2002
1999-74-2000 / 02P-17

Ms. Sheila N. Miyake
Deputy Director
Planning Department
County of Kauai
4444 Rice Street, Suite 473
Lihue, Kauai, Hawaii 96766

Dear Ms. Miyake:

**Environmental Assessment
Proposed Pipeline Replacement and Well Site Repair
Hanapepe, Kauai, Hawaii, TMKs: 1-8-04: 3 and 1-8-05: 7, 8, 19, & 24**

Thank you for your letter of September 13, 2001 regarding the Draft Environmental Assessment for the proposed pipeline replacement and well site repair work in Hanapepe, Kauai.

The State Department of Land and Natural Resources (DLNR) has determined that the proposed pipeline replacement and well site repair are covered within an existing Conservation District Use Permit (CDUA KA-1423) issued in 1982. Hence, we have been instructed by the DLNR only to submit construction plans of the project for consistency with the existing permit.

We appreciate your comments on the proposed project.

Sincerely yours,

BELT COLLINS HAWAII LTD.

Glen T. Koyama

GTK:if

cc: William Eddy, Kauai County Department of Water

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APPENDICES

APPENDIX A

**An Archaeological Assessment of a Proposed
 Water-line and Well Site B, Hanapepe, Kona District,
 Island of Kauai (TMK: 01-08-04;-05)**

by
 Scott Kikilo, B.A.,
 Douglas F. Borthwick, B.A.,
 and
 Hallett H. Hammatt, Ph.D.

Prepared for Belt Collins Hawaii Ltd

Cultural Surveys Hawaii
 October 2000

TABLE OF CONTENTS

LIST OF FIGURES ii

I. INTRODUCTION 1
 A. Project Background 1
 B. Project Area Description 1
 C. The Scope of Work/ Methodology 1

II. HISTORICAL BACKGROUND 6
 A. Mythological and Traditional Accounts 6
 B. Early Post-Contact Period (1778-1847) 7
 C. The Kauhū Rebellion of 1824 7
 D. Land Commission Awards (LCAs) 1848-1849 8

III. PREVIOUS ARCHAEOLOGICAL RESEARCH 11
 A. Archaeological Studies 11
 B. Inadvertent Burial Findings 12
 C. Summary of Documentary Research 13

IV. RESULTS OF FIELD SURVEY AND RECOMMENDATIONS 14

V. REFERENCES CITED 16

VI. PHOTO APPENDIX 19

LIST OF FIGURES

Figure 1 Portion of USGS Topographical Map 7.5 Minutes Series, Hanapēpē Quadrangle, showing Project Area. 2
 Figure 2 Map of Project Boundaries, including concrete ford crossing portion, and well site B portion of Project Area. 3
 Figure 3 Map of well site B portion of Project Area. 4
 Figure 4 1919 Hawaii Territory Survey Map of Project Area in 1848, Showing LCAs and Cultivated Lands within Hanapēpē. 9

PHOTO APPENDIX

Figure 6 Access Road through Existing River Overflow Channel, Channel Visible to Right Side of Photograph (View to Northwest) 20
 Figure 5 View of Hanapēpē River Ford and Existing Dirt Access Road (View to West) 20
 Figure 7 Existing Well Site B. Showing Collapse of Fence Line and Ground Surface on Eastern Side of Well (View to North) 21
 Figure 8 River Side Embankment below Collapsed Section of Well Site B, Showing Tangle of Vegetation Falling Downslope to River (View to West) 21

I. INTRODUCTION

In September, 2000 Cultural Surveys Hawaii, Inc. (CSH) was contacted by Glen Koyama of Belt Collins Hawaii Inc. in regards to doing an archaeological assessment of a proposed water line replacement and Well Site B improvements in Hanapēpē on the island of Kauai. This report is a preliminary assessment of the project area, incorporating a general background search of archival sources and historical documents along with a one day field inspection sufficient to assess the area for archaeological potential.

A. Project Background

The proposed project (Figure 1) includes the construction of a waterline replacement at an existing stream ford, across the Hanapēpē River and the repair and upgrading of an existing well site located on the west embankment of the Hanapēpē River (Figure 2).

B. Project Area Description

The study area includes, a roughly 350 foot long by a maximum of 150 foot wide section of the Hanapēpē River, where the existing ford is located, and the eastern or riverside embankment of existing well site "B" (Figure 3). Elevation is about 500 feet above sea level. The mean yearly rainfall for the shoreline area is 500-750 cm. (Giambelluca et al., 1986:86) with the annual temperature range between 60° and 80° (Armstrong 1974) while the upper part of the *chupuo'o* has an annual rainfall of 8,000 cm. or between 4-500 inches a year with an average temperature of 65°.

Hanapēpē is geologically located to one side of a single collapsed volcanic shield that is deeply eroded, and partly veneered with much later eruptions. The soils in the Hanapēpē upland area are characterized as being Hanalei-Kokolo-Pakala associated soils. These soils are usually found on Kauai along banks of rivers from the mouth of the bay inward 2+ miles. These soils are deep, nearly level, poorly drained to well-drained and have dominantly moderately fine textured or medium-textured subsoil underlying material. This association is used for irrigated sugarcane, pasture, woodland, and wildlife habitat.

C. The Scope of Work/ Methodology

The assessment includes background research and field inspection. This archaeological assessment does not meet the requirements of an inventory-level survey per the rules and regulations of State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR). However, the level of work is sufficient to address site types, locations, and allow for future work recommendations.

One hundred percent of the project area was covered by pedestrian investigation.

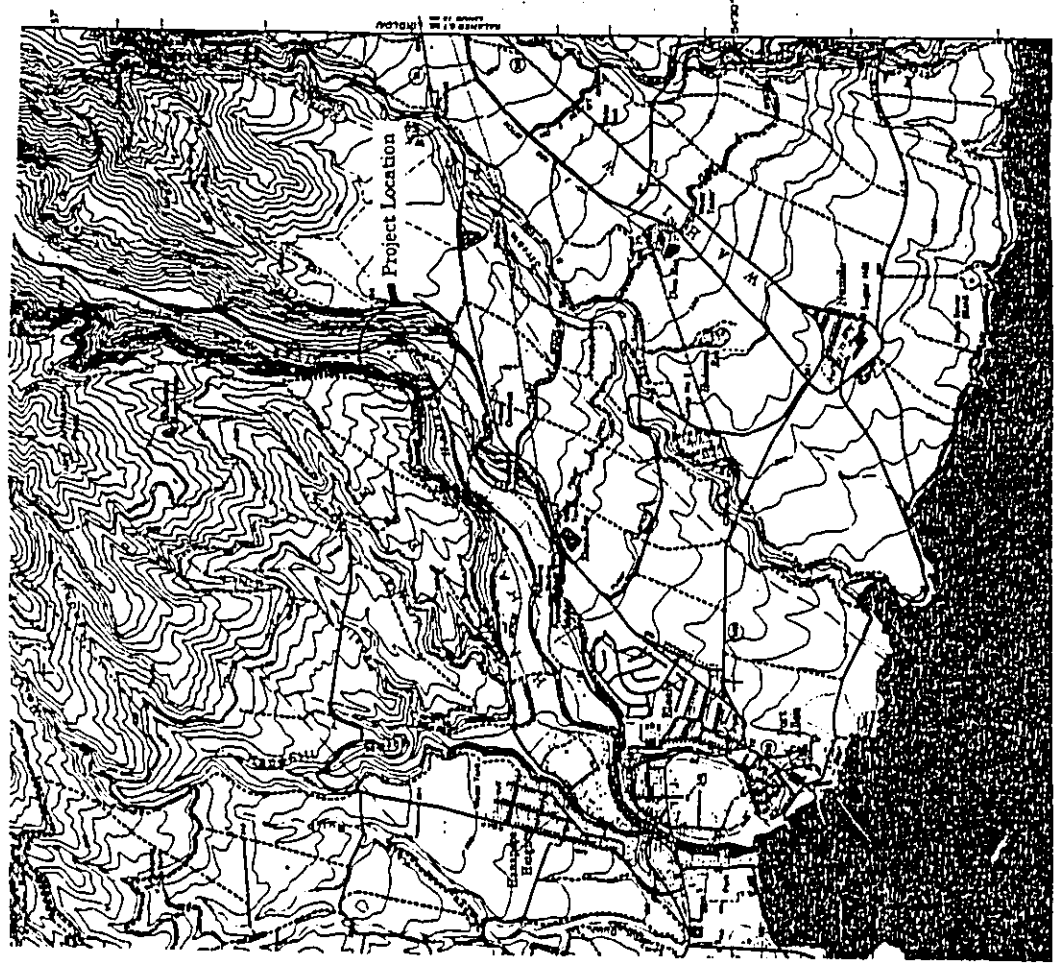


Figure 1 Portion of USGS Topographical Map 7.5 Minutes Series, Hanalei, Kauai, showing Project Area.

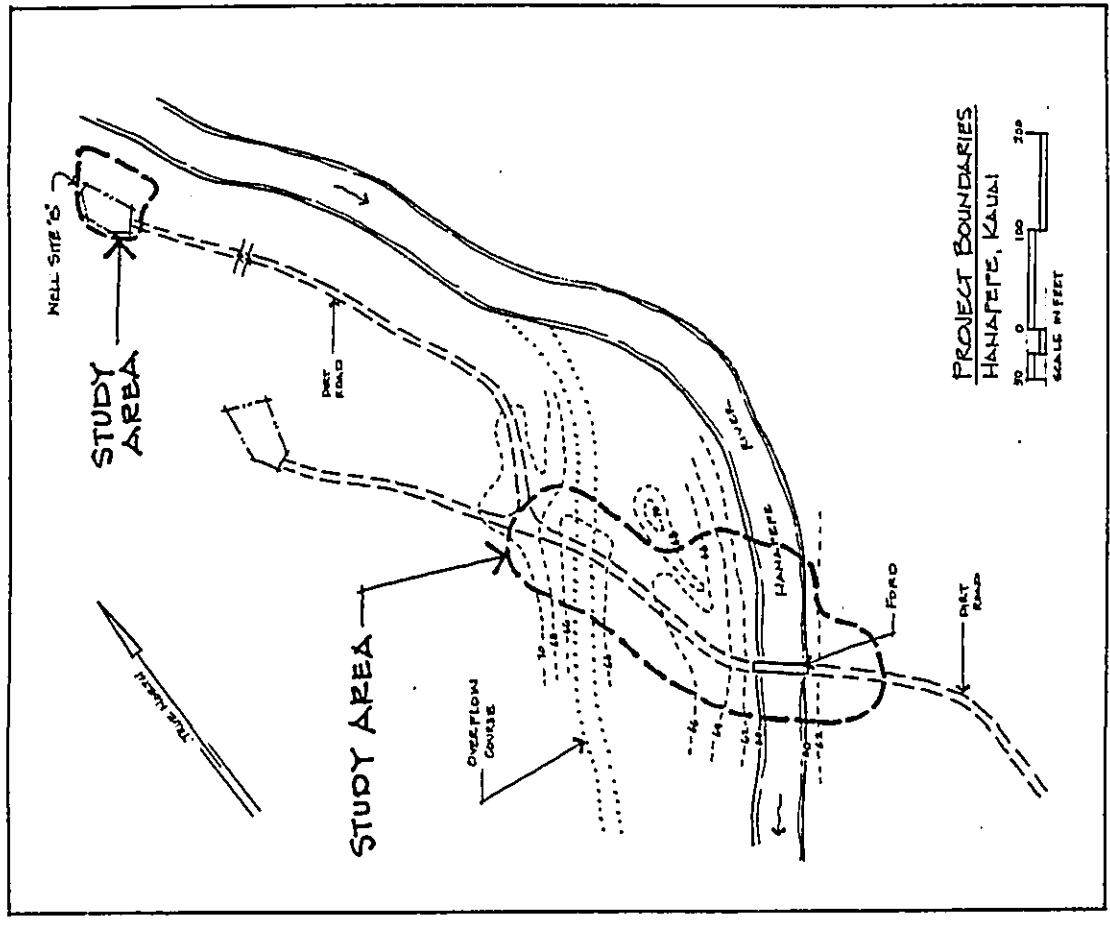


Figure 2 Map of Project Boundaries, including concrete ford crossing portion, and well site B portion of Project Area.

The scope of work was as follows:

1. Historical research to include study of archival sources, historic maps, Land Commission Awards and previous archaeological reports to construct a history of land use and to determine if archaeological sites have been recorded on or near this property.
2. Field inspection of the project area to identify any surface archaeological features and to investigate and assess the potential for impact to such sites. This assessment will identify any sensitive areas that may require further investigation or mitigation before the project proceeds.
3. Preparation of a report to include the results of the historical research and the fieldwork with an assessment of archaeological potential based on that research, with recommendations for further archaeological work, if appropriate. It will also provide mitigation recommendations if there are archaeologically sensitive areas that need to be taken into consideration.

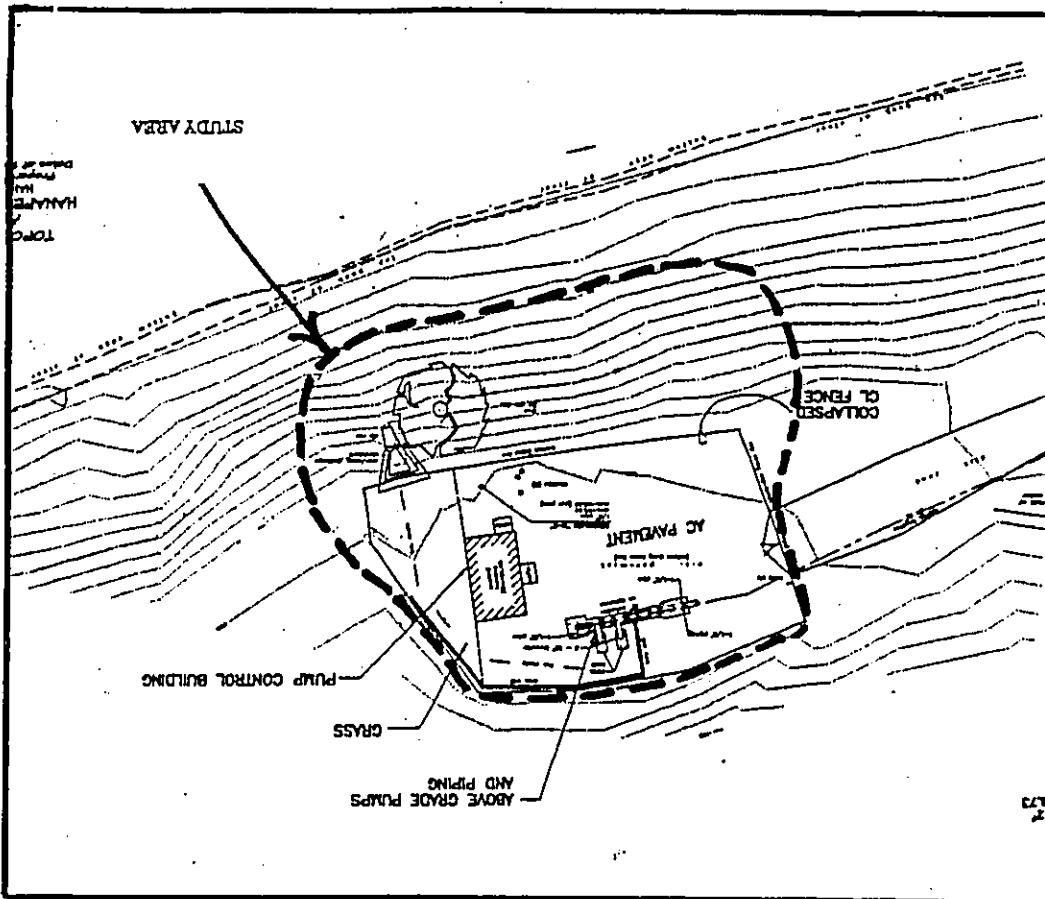


Figure 3 Map of well site B portion of Project Area

II. Historical Background

A. Mythological and Traditional Accounts

The history of the Hanapépé region of Kaua'i has been documented in a number of materials including, but not limited to, Forrander's *Hawaiian Antiquities and Folk-Lore* (1959), Pierce's *Russia's Hawaiian Adventure* (1965), Joesting's *Kaua'i: The Separate Kingdom* (1984), and Frazier's (1979) *The Great Māhele: Revolutionary Changes in Land Ownership in Hawaii*. All of these studies detail the legendary history and oral traditions, the legendary rulers and personalities, the early historic accounts, land ownership and utilization changes during and following the Māhele, and the changes in land use from traditional to modern times. Likewise, later studies such as Creed et al's (1994) *Archaeological Inventory Survey of a Househol in Hanapépé*, and Spear's (1992) *Archaeological Inventory Survey of the Hanapépé First United Church of Christ*, provided a more detailed and summarized background of the Hanapépé history. With so many sources already documenting this area rich historical and cultural past, the purpose of this section is only to orient the present project area within the overall historical and cultural setting.

Perhaps the earliest and most famous mentioning of the area Hanapépé comes from the legendary account of a Kaua'i hero named Kawelo, who became ruling chief on the island in the 16th century. A shortened account of the story (Forrander 1959) tells of how Kawelo, who is born on Kaua'i in Hanama'ulu and raised by his grandparents in Wailua, travels to O'ahu and returns to earn his royal title. The action of the tale begins when his grandparents travel to Waikiki to see their other grandchildren, taking Kawelo with them. Kakuhihewa is the ruling chief of O'ahu at the time, and in Waikiki, Kawelo learns the skills of battle and how to wrestle and other important skills. He marries his teacher's daughter. Having learned these skills, the occasion arises for him to prove himself. 'Aikanaka, the chief of Kaua'i, takes Kawelo's parents hostage and Kawelo sails to Kaua'i to do battle. With skill and cunning and the help of his warrior wife, Kanewahineikioaha, he succeeds in killing off all of the opposition. 'Aikanaka, his priests, and family manage to escape and proceed to the uplands of Hanapépé, at Koula, where they take up residence." The banishment takes 'Aikanaka to an area as removed from power as possible.

'Aikanaka... Lived in the uplands of Hanapépé and in great poverty. He had no lands, no honors, no food, no meat, no kapas, and no home. All that 'Aikanaka did was till the ground to raise food for their future use (Forrander 1959: 102).

Kawelo's adopts a son, Kaeleha, part of the conquest party, and awards him the district of Puna as his part in the conquest. One day Kaeleha travels to Hanapépé and befriends 'Aikanaka who had come down to Wahiawa to fish and to take a swim in the sea. Kaeleha stays, marries 'Aikanaka's daughter and eventually plots to overthrow Kawelo. Kawelo hears of this and promptly comes to Hanapépé to do battle and after many feasts and acts of cunning he kills his traitor son and 'Aikanaka, and returns to live with his wife and parents in Hanamaulu and to peacefully rule the island of Kaua'i.

B. Early Post-Contact Period (1778-1847)

The first mention regarding Hanapépé in the early historic literature is from *Russia's Hawaiian Adventure 1815-1817* (Pierce 1966) in the diary of Georg Scheffer of the Russian American Company. Scheffer was a Russian Trader who scouted out sandal wood and other trading goods for his company. Among the lands he was given are the *ahupua'a* of Hanalei, land in Waimea for plantations and factories, and the *ʻiʻi* of Mahimuali in Makaweli followed shortly thereafter by a gift of the *ʻiʻi* of Kuuloa in Hanapépé.

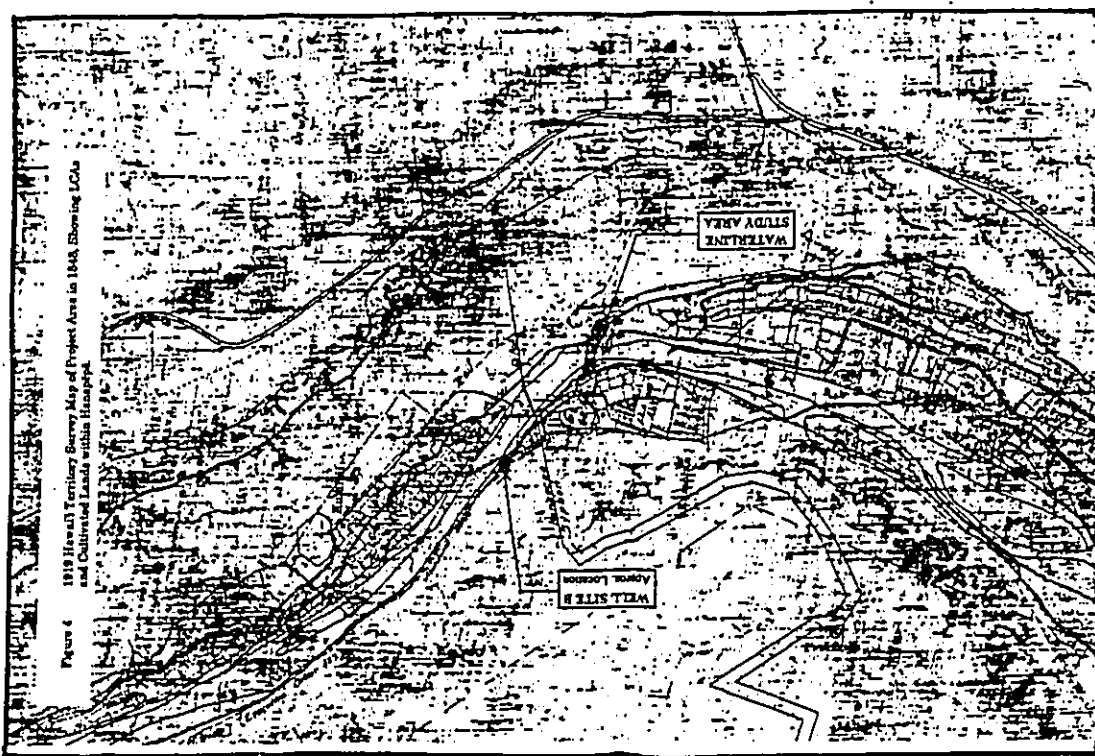
(October) 14 [1816] ... I spent two days in Hanapépé, where I received for the Company from the chief Obana Platov [Obana Tupigea - Opana Kupiheia renamed Platov by Scheffer] a village with eleven families. It lies in the province of Hanapépé on the right bank of the river Don and is called Tuuloa Platov [Kuuloa] (Pierce 1966: 185).

Shortly after Scheffer departed, the Ruggles, a missionary family, moved eastward (from Waimea) in 1822 to establish a mission station at Hanapépé (Kauai Bicentennial Comm. 1978:33).

C. The Kaua'i Rebellion of 1824

In 1824 Kalanimoku sailed to Kaua'i to settle government affairs and land disputes that were tied to the annexation of Kaua'i Island to the Kamehameha Monarchy. Until his death, Kaunuali'i was allowed to retain his hereditary control of Kaua'i Island, as long as he pledged his allegiance to the Kamehamehas and agreed to forfeit this power following his death. At Waimea, Kalanimoku (Kamehameha III's representative on Kaua'i) called a council of chiefs and announced that lands would continue as they did before and that Kahala'i'a, was the new ruler over Kaua'i affairs (Kamakau 1961:268). However, the leeward Kaua'i chiefs, under Kia'imakani and supported by Ka'umuali'i's son, Humehume (or George Kaunuali'i), wanted the land re-divided under a new rule, as was normal when a chief died, but Kalanimoku refused. These leeward chiefs opted to rebel and stormed the fort at Waimea but most were killed. Those that lived set up a fort at the Hanapépé-Wahiawa border but they didn't count on the ten ships of men and arms sent from Maui and O'ahu, including Hosiipi'i (ruling chief of Maui), who were sent to support Kamehameha's claims against Humehume.

On August 8 [1824] the battle of Wahiawa was fought close to Hanapépé. The Hawaii Island forces were at Hanapépé, the Kauai forces at Wahiawa, where a fort had been hastily erected and a single cannon (named Humehume) mounted as a feeble attempt to hold back the Kamehameha Government. Large numbers of Kauai soldiers had gathered on the battleground, but they were unarmed save with wooden spears, digging sticks, and javelins. No one was killed on the field, but as they took to flight they were pursued and slain. ... For ten days the soldiers harried the land, killing men, women, and children. Humehume had ridden away to the mountains with his daughter and his wife, Pake. Many fled to the rest took prisoners and



brought them to Oahu and even to Maui and Hawaii. A great deal of property was taken, among other things horses and cattle, which had become numerous on Kauai because the foreigners had given many such to Kaumuuli'i (Kamakau 1961:268-269 citing newspaper articles of April 11 and 18, 1868 from *Ko Nupepa Ku'oko'a*).

D. Land Commission Awards (LCAs) 1848-1849

Land reform mid-nineteenth century was undertaken at the instigation of the Westerners in Kamehameha III's Kingdom. Previous to this land reform (The Mahele) all land belonged to the gods (*akua*) and was held in trust for them by the paramount chief and was supervised by subordinate chiefs. After the call for land reform the land was partitioned among the King and the *ali'i* (other chiefly persons) and this was called the Mahele awards, then among the Crown and the government, and finally among the people living on and cultivating the land. The latter partition was called the Kuleana Act and it allowed fee-simple ownership to those persons who could meet the requirements set up by the legislature. One of these requirements was that the individual would show prior use for cultivation or residence. Mahele Awards to the *ali'i* for large portions of the valley were granted and there are 80 *kuleana* claims for Hanapepe. There are two claims which appear to have no Native Register claims but have testimony saying they have been abandoned.

Of the 80 claims extending from the shore almost 3 mi. into the valley, Hanapepe claimants list 131 *opono* (sections) in use of the 80 (82) claims made by 78 individuals (not including those grants to the King, Queen and Government holdings and part of the earlier Mahele distribution). Some half dozen LCAs do not state an *'ili* location, and 11 claims of land are made by more than one individual where a person who has died since and his/her successor is listed in the foreign or native testimony for the same claim number (11 deaths are noted in the claims).

The great majority of Hanapepe claims are made within the *'ili* of Kaauwaekahi (which includes those of Kalapawai). Thus, 56 of the 131 *opono* or *'ili* are located along the lower Hanapepe river bank. There are 11 *opono* claimed in 'Eie'ele, 10 for Kaawainui, 6 each for Kouls and Kuhumu, 5 each for Kukulolo, Kuiloa, 4 each for Manuahi and Hanapepe generally (unspecified location), 3 each for Ukula, Kamohio and Waikanono, 2 each for Kapewa, Kopouhana, Kahunaone, Punalau and Waiulii, and only 1 for Hanapepehuna, Hikiula, Kaawaiki, Kumimi and Waikoko.

Three of the *'ili* mentioned above fall within the vicinity of the project area (Figure 4). Land commission awards documented the names of three different claimants: Alhi (LCA 8011), Kipani (LCA 9265), and Maka Ilio (LCA 10271:1, :2, :3).

According to testimony, the land area of Kumimi was awarded to Kipani, who claimed one *kula* (named Opulala) and one *kihapai* (named Kaumaeliehi). Historic maps show more than two parcels in that area. Nevertheless, only the *kula* and *kihapai* were mentioned in the records. Land commission award maps show that there are numerous *lo'i* in the area, and a major *ouwai* irrigation ditch running through the parcel. Kipani

testifies in the records that the land was passed down to him by Kaleku in the days of Kaiioewa.

On the west side of the Hanapēpē River is the land area of Kamohia, portions of which lie within lands awarded to Alihi and Maka'ūlo. According to testimony given for Alihi, there are three parts to his land claim that consists of approximately 7 *lo'i*, a house lot, and a hog style corral. Similarly, testimony given by Maka'ūlo reveal that sections 2 and 3 of his award contain *mo'o* under cultivation and *lo'i*. Land commission award maps show that there is a major *ouwai* irrigation ditch running on the east side of the claimants awards.

On the east side of the Hanapēpē River is the land area of Kapouhana. The land award given to Maka'ūlo consisted of numerous *lo'i* and *mo'o* plots, and it had a *ouwai* channel that ran parallel on the west side of the parcel.

Based on the LCA data, the portion of Hanapēpē Valley, where the project area is situated was the location of numerous *lo'i* and probably a few associate house sites.

The advent of commercial sugar cane in the Hanapēpē Area dramatically changed the settlement pattern landscape. The stream flood plain areas that were once terraced for taro *lo'i* were modified for sugar cultivation, where it was practical. Additionally, former *ouwai* were modified for sugar irrigation purposes. Hanapēpē stream and associated tributaries were modified by major water resource(s) projects (e.g. dams, water ditches, syphons, etc.).

Subsequent to the demise of commercial sugar cane diversified agricultural pursuits have utilized the abandoned cane fields. The extent of land modifications by sugar and other modern activities specified to the project area are discussed in the results and conclusions sections of this report.

III. PREVIOUS ARCHAEOLOGICAL RESEARCH

A. Archaeological Studies

Previous archaeological work in the Hanapēpē area has been limited. Archaeological studies in Hanapēpē prior to 1992 consisted almost exclusively of site locations or survey (Gay 1876; Bennett 1931; Thrum 1907). Only six field reports (Barrera 1981; Kikichi 1963, 1982; Hammatt 1990; Spear 1992; Creed et al 1994) have been previously done, along with two articles by Pearson (1962, N.D.) which discuss the agricultural use and population of Hanapēpē. Furthermore, there have been no systematic archaeological excavations in Hanapēpē prior to the subsurface work of Cultural Survey Hawai'i on the grounds of the Hanapēpē Self-Help Housing Parcel in 1994.

A broader view of the Hanapēpē area reveals that there are a number of recorded sites. Along the coast are salt pans (site 49), *heiau* (sites 48, 51, 63), a house site (site 50), a possible fishing shrine (site 52), cave shelters (sites 3050, 3051, 3054), walls (site 3055), and a historic camp (site 3049). Along the interior of Wahiawa Stream there are petroglyphs (sites 3042, 3043), a house site (site 3045), a *heiau* (site 62), terraces (site 61), and a grinding stone (site 3044). Inland from Hanapēpē town are *heiau* (sites 54, 55, 56, 57), a house site (site 57), burial caves (site 3037), and the Hanapēpē complex (site 60). Sites 56 and 57 *heiau* and *heiau*/house site respectively, are situated well down the valley, at Alkawai from the present project area.

The first systematic archaeological survey of the Island of Kaua'i was performed by Wendell Bennett in 1929. Prior to this however, Francis Gay (1875) surveyed the Hanapēpē area and discovered the location of three *heiau*. Later, after the turn of the century, Thomas G. Thrum (1907) conducted a similar survey in this area and recorded seven *heiau* in Hanapepe.

In Wendell Bennett's 1929 archaeological inventory survey of Kaua'i island (1931), he located five of Thrum's *heiau* and added other site types, which included salt pans, houses, agricultural terraces and sand burials for a total of 12 sites in Hanapēpē. Beginning near Puolo Point and going inland his survey included the salt pans (now part of Salt Pond Beach County Park State Site # 50-30-09-49), habitations surrounded by 2-3 foot high walls as well as wind shelters, and fishing shrines. He also mapped Kauakāhānuu, a medium-sized *heiau* dedicated to Kane and Kanaloa and notes sand burials on the northwest side of the river. Bennett also noted the numerous taro terraces farther up the valley. The complex referred to has been allotted State Site 50-30-09-60. The description is probably relevant to areas not under sugar cane cultivation.

"In Hanapēpē Valley the taro terraces are everywhere that the land is irrigable. On some the walls are 3 feet high. House sites are of the usual types. Low caves are utilized by building up in front. There is evidence of people having lived in every turn of the valley. The valley is narrow in most places. Farther on toward the sea the valley broadens and along the sides

there are still house sites built up. One house site of stone was 20 by 30 feet and well built. It was walled 4 to 8 feet in front to make the platform level on a steep, rock slide. It was walled in back 3 feet against this slide. On the sides are walls 2 to 3 feet high in back, and the same in width, though in the front they are much lower."

In the 1960's, Dr. William Kikuchi (1963) performed an inventory survey of the Kona District of Kona 'i from Makaweli to Kipukai. In Hanapēpē he noted that all the newly found sites were located in the valley proper or along the west side of the Bay. The caves he examined had been vandalized (1963:3), and Akowai *heiau* still had standing walls but were in a poor state of preservation (*ibid.*). Kikuchi also did a damage assessment to the Salt Pond County Park (site -3038) (Hurricane Iwa 1982) and recommended that the entire area be data recovered because of the potential for looting and the poor condition of the site from storm erosion. He found 15 mostly fishing-associated artifacts among the storm debris of the park (Kikuchi 1982).

In 1990, Dr. Hallett H. Hammatt did a reconnaissance of 72 acres in the 'ili of 'Eke'e, on almost exclusively cultivated cane lands with the exception of 2 acres of residential property, and he concluded that cultivation of sugar cane on the land since 1884 "would have destroyed all traces of former cultural features which may once have been present" and no sites were found in gulches or in uncultivated areas (Hammatt 1990:10).

In 1992, Dr. Robert L. Spear (1992) documented a cultural layer (Site 50-30-09-497) with traditional artifacts and a date range of 1360 to 1590, supporting the interpretation of a pre-Contact cultural layer at the First United Church of Christ.

B. Inadvertent Burial Findings

A majority of the burial finds in Hanapēpē have been concentrated in the areas fronting Hanapēpē Bayn — no where near the current project parcel. The burials were disinterred as a result of wind and wave action, most notably caused by Hurricanes Ewa and 'Iniki, that left the *iwai* exposed. The result has been a general disturbance and displacement of the prior existing sand dunes, and the disappearance of the beach lots which used to be between Puolo Road and Hanapēpē Bay. In addition, beach front erosion occurred at the Japanese Cemetery (State Site 50-30-09-651) during Hurricane Iniki. Prehistoric burials were identified in the sand dunes fronting Hanapēpē Bay in this area by Bennett (1931). Due to the extent of damage to the previous shoreline, disturbance of *in situ* burial sites has been extensive. This has resulted in the surfacing of fragmentary human remains along the shoreline, discovered not only by contracted archaeologists, but also by private citizens of Hanapēpē.

McMahon (1993) reported that a leg bone and mandible were exposed in sand below the surface of old Puolo Road (State Site # 50-30-09-053, TMK 1-8-08:3) in between Kukamānu Gulch mouth and the Hanapēpē Japanese Cemetery (State Site 50-30-09-651, TMK 1-8-08-14). Additionally, McMahon (1994), in an inspection of the Hanapēpē Japanese

Cemetery, discovered a humerus at the edge of the exposed corner of the cemetery, in a pile of driftwood. The humerus exhibited white discoloration indicating that it had been exposed for some time. McMahon (1994) expressed concern that more remains might be found in the area.

Creed, *et al.* (1994), in a report on the subsurface inventory survey of Hanapēpē Town Lots 100 and 101 (TMK 1-9-10:2,3), discussed the location of two burials (State Sites 50-30-09-704 and 50-30-09-705) and a cultural deposit (State Site # 50-30-09-706). The burials were located at some distance from the sea, did not seem to have been impacted by previous coastal destruction. No analysis of the remains was performed, as they were preserved in place.

Kennedy and Latinis (1995), responding to the exposure of a human skull during Puolo Road construction and revetment repair, located and removed an *in situ* burial from the sandy matrix. They postulated that the burial may have been a feature of Bennett site 50-30-09-53, originally identified by Bennett (1931) as possible ancient sand burials. However, the close proximity to the Japanese Cemetery made this determination inconclusive. Pietrusewsky (1996) examined the skeletal remains to attempt to determine ethnicity. He determined that, "the majority of metric and non-metric observations observed in this skeleton are consistent with Hawaiian (Polynesian) ancestry."

In 1996, archaeological monitoring was conducted for sub-surface excavation which occurred at the Hanapēpē Drainage Improvement Project (TMK 1-8-08:45) between November 1995 and April 1996. No pre-historic cultural deposits were discovered, but one primary coffin burial (State Site # 50-30-09-1987), and several scattered and fragmented partial human burials were encountered. The remains were collected by the archaeologists, and later reinterred at the Hanapēpē Hawaiian Cemetery by the Kona 'i Island Burial Council.

C. Summary of Documentary Research

Although the data is limited, the evidence shown here does support the generalization that the Hanapēpē area was extensively utilized in pre-contact times. *Heiau*, burials, houses, and terraces are known to exist along the Hanapēpē River. These site groupings suggest a settlement pattern that reflects, religious, habitation, and agricultural elements. Based on the review of previous archaeological work this portion of Hanapēpē valley was utilized for habitation and agriculture, both pre-historically and historically. To this date however, no archaeological projects have been conducted in the vicinity of the current proposed project. Furthermore, historical research of the area reveals that there was commercial sugarcane cultivation within the parameters of the project area. However, where commercial cultivation did not occur, there is a likelihood that many of the terrace features and house sites may still be present.

IV. RESULTS OF FIELD SURVEY AND RECOMMENDATIONS

On September 27, 2000, archaeologists Doug Borthwick, B.A., and Ian Masterson conducted the field inspection for the proposed waterline and well site "B" project. The parcel of land to be affected by the proposed Water-line is located on both embankments of Hanapēpē River with the existing well site B on the western bank of the river. One hundred percent of the project area was inspected on foot, doing pedestrian sweeps. Inspection of the project parcel revealed that much of the land was previously altered for sugar cane cultivation and water resource development in recent times.

The waterline portion of the project is centered around the existing dirt access road and the existing concrete ford in Hanapēpē River. The waterline portion measures roughly 300 feet long (N/S) by 100 feet wide (E/W). Additionally a 60 x 100 feet section of the river just upstream of the existing concrete ford was also inspected for a proposed temporary water diversion dam.

The study area corridor proposed for the waterline replacement has been altered by sugarcane cultivation, river or flood control activities, construction of the concrete ford and road way, and water diversion activities. Commercial sugar cane activities have altered much of the landscape within Hanapēpē Valley. The narrow flood plain on either side of the meandering river was formally extensive taro lo'i, which was converted to plowed sugarcane fields where practical. Based on the present survey findings, mechanized clearing and plowing had occurred on both sides of the river in the vicinity of the project area. However where extensive plowing has not taken place, remnants of former agricultural feature were observed, though outside of the actual project area.

Based on correlations with the historic map (Figure 4), the concrete ford crossing is at the approximate location of two 'auwai on the eastern bank and two 'auwai and associated fields on the western bank. The only visible remnant of the former 'auwai and fields was observed off of the existing dirt road leading up to the concrete ford. Observed was a shallow soil ditch, extending down slope (makai, south) beyond the project area. The ditch is a trough like feature that represents an old taro 'auwai that was probably utilized during early commercial sugar cane times. The "ditch" is cut by the existing road in a number of places and has been obliterated where the concrete ford was constructed on the east bank. On the west bank a wide river overflow channel has been constructed, probably where the 'auwai was previously situated. Based on present observations, regular river flooding has washed out 'auwai and downlope lo'i in the project area.

Inspection of the existing well (well site B) included, the access road, well and pump area, and the river side embankment. No features of any kind were observed. The historic map (Figure 2) depicts an old ditch and 'auwai in the vicinity of the well, however no evidence of either was observed.

During the reconnaissance survey, areas outside the present project area were inspected to test the assumptions about mechanized clearing in relation to map depicted

features. A section of the flood plain across the river (i.e. on the east bank) from well site B was checked. In this area which is outside the present project area, terraced lo'i remnants were observed. The lo'i existed only in the areas that mechanized clearing had not occurred. The observations provided a clear framework for areas where mechanized clearing had occurred versus where no clearing had occurred.

Based on the field inspection, no further archaeological research or work appears warranted. The recommendation is contingent upon all proposed work staying within the perimeters of the already disturbed and modified project area.

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Figure 5 View of Hanappé River Ford and Existing Dirt Access Road (View to West)



Figure 6 Access Road through Existing River Overflow Channel, Channel Visible to Right Side of Photograph (View to Northwest)



Figure 7 Existing Well Site B, Showing Collapse of Fence Line and Ground Surface on Eastern Side of Well (View to North)



Figure 8 River Side Embankment below Collapsed Section of Well Site B, Showing Tangle of Vegetation Falling Downslope to River (View to West)

APPENDIX B

ABSTRACT

A traditional cultural practices study was conducted by Cultural Surveys Hawaii for the proposed improvement related to Well Site 3 and associated water line in Hanapēpē (TMK 01-08-04;-05). The historic background study was done from available documents and two informants were interviewed at length. Several other residents, or former residents contributed information about Hanapēpē as well.

Ms. May Makaanui Hoopii Corr, now 83, who owns the nearest private property was willing to share her lifetime experiences (in two lengthy phone interviews) on that nearby property and her way of life there in the early years of the 20th century. Wilma Holi and one of the authors (Victoria Creed) also had the opportunity to talk briefly with Mrs. Corr's son, Richard Corr. Ms. Wilma Holi, a former Kaula 'i'Ni'ihau Burial Council member and multi-generational Hanapēpē resident, also knew the area from her childhood days. These persons generally felt that the proposed repairs are good and would have no adverse effect on traditional cultural practices.

Ms. Holi did indicate, however, that in the event any human remains were encountered during the repairs, all work should be halted and the inadvertent discovery be immediately reported to appropriate agencies.

**Traditional and Cultural Practice Assessment
for the Proposed Hanapēpē River Water Line Project,
Hanapēpē Ahupua'a, Kona (or Waimea) District
Island of Kaula 'i (TMK 01-08-04;-05)**

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Prepared for
Belt Collins & Assoc.

Cultural Surveys Hawaii
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We would particularly like to thank Mrs. May Makaanui Hoopii Corr and Ms. Wilma Holi for sharing their personal knowledge of the Kumimi study area and surrounding Hanapēpē. We would also like to thank Mr. Kenneth Chang for having shared his childhood memories of Hanapēpē; Mr. Richard Corr, for having shared information regarding the current status of the Corr property in the 'ōi of Kumimi/Kamohio. Other members of the multi-generational Hanapēpē family of Samuel and Rachel Moke (now dead), asked that their information not be recorded or written down, but were willing to say that their family traditional cultural practices are maintained to this day.

We would like to thank Kaiipo Akana, Chris Faye, La France Arboleda-Kapaka and Nancy McMahon for their assistance during the consultation process.

We would like to thank Mr. Glen Koyama of Belt Collins Hawaii for coordinating services for this project.

TABLE OF CONTENTS

ABSTRACT	i
ACKNOWLEDGMENTS	ii
LIST OF FIGURES	v
I. INTRODUCTION	1
A. Project Background	1
B. Project Area Description	1
C. Scope of Work	1
D. Methods	7
Identification of Knowledgeable Interview Informants	7
Biographical Sketches of Interview Informants	8
II. NATURAL SETTING	10
A. Historic Setting	10
B. Location	10
C. Geology	11
III. HISTORIC BACKGROUND	12
Heiau	12
Other Archaeological Sites	13
Place Names	17
Population	17
Boundary Surveys	18
Water Resources	18
Legends Mentioning Hanapēpē	19
Early Post-Contact Period (1778-1847)	20
The Kūua 1 Rebellion of 1824	23
Early Descriptions of the Valley	24
Land Commission Awards (LCAs) 1848-1853	25
Well Site 3 Project Area Land Commission Claims	28
Latter 19 th Century	29
Sinclair-Robinson-Gay-Knudsen Clan Records	31
Other Information about Early Hanapēpē	32
Birds and Feathers	33
Snails	35
Rice and Sugar Cane	35
Hula and Chanting	36
IV. SUMMARY AND RECOMMENDATIONS	37
Summary	37
Recommendations	38

VII. REFERENCES CITED 39

APPENDIX A: Named Places in the *Ahupua'a* of Hanalei 1

LIST OF FIGURES

Figure 1 Portion of USGS Topographic 7.5 Minute Series Showing Proposed Hanalei River Water Line and Well Project Area 2

Figure 2 Portion of TMKs 1-806 and 1-8-04 (separated by the ditch), Hanalei Valley, Kauai, Showing Land Commission Awards 3

Figure 3 Map of Well Site 3 Portion of Project Area 4

Figure 4 Map of Project Boundaries in Hanalei *Ahupua'a* for Proposed Improvements to Well Site 3 and Associated Waterlines 5

Figure 5 Portion of 1919 Joseph Iao Map of Hanalei Valley, Hanalei, Kona, Kauai, Scale 1:300, R.M. 2657 showing *Ii* of Kurimi and Kamohio, and Land Commission awards 6

Figure 6 Portion of USGS Topographical Map 7.5 Minute Series, Hanalei Quadrangle Showing Archeological Sites, Scale 1:24,000 (See Inset Portion from Bennett 1971:98) 14

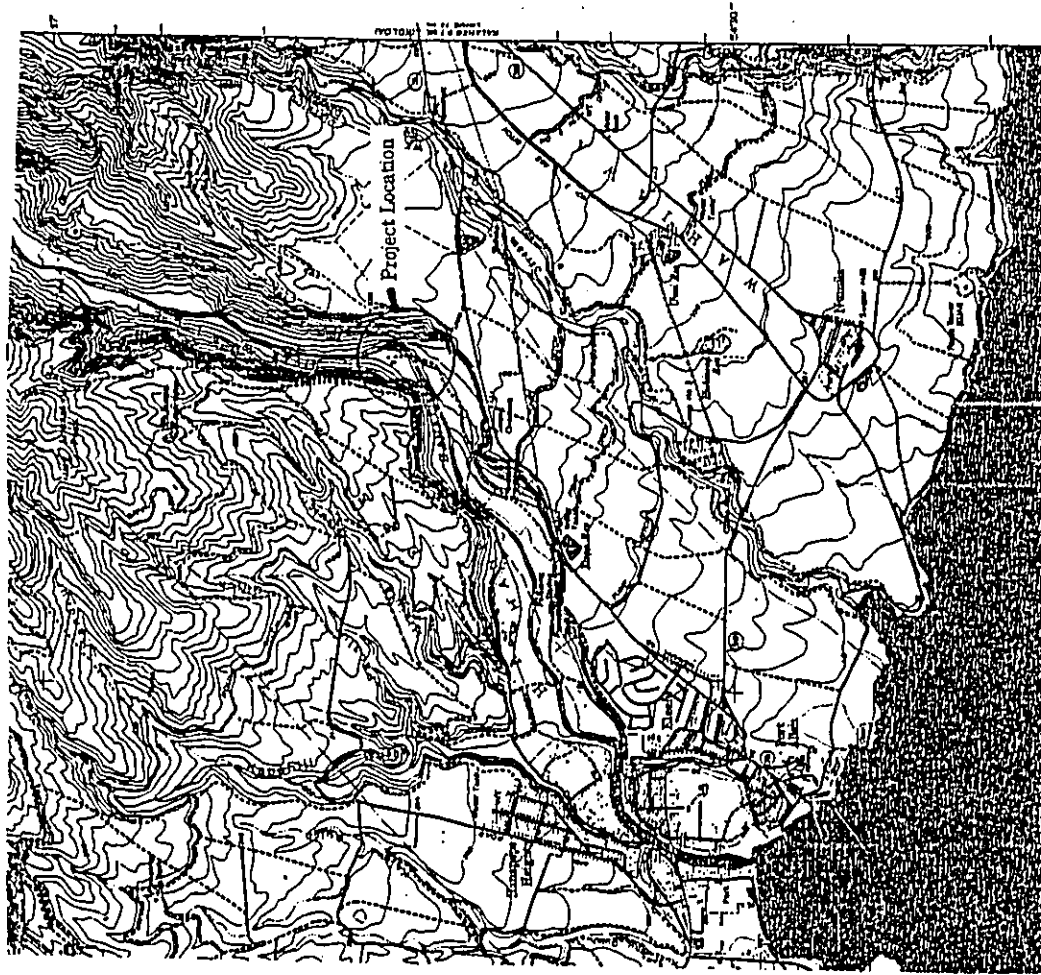


Figure 1 Portion of USGS Topographical Map 7.5 Minutes Series, Hanapépe Quadrangle, showing Project Area.

I. INTRODUCTION

A. Project Background

The proposed project includes the replacement of an existing waterline and repair to existing Well Site 3 fencing and asphalt areas along the Hanapépe River where it has collapsed. Well Site 3 is located on the west embankment of the Hanapépe River. Mr. Richard Corr, son of informant, Mrs. May Corr, said this collapse was due to a landslide some time ago.

B. Project Area Description

The project lies within the 'iji (subdivisions of an *ahupua'a*) of Kumimi and Kamohio (TMK 01-08-04;-05) (Figures 1-5). The elevation is about 70 feet above sea level. The mean yearly rainfall for this lower mid-valley area is 600-750 cm. (Giambelluca *et al.*; 1986:86) with the annual temperature range between 60° and 80° F. (Armstrong 1974) while the upper or *mauka* reaches of the *ahupua'a* have an annual rainfall of 8,000 cm. or between 4-500 inches a year with an average temperature of 65°.

Large non-indigenous trees surround the Well Site 3 area and the nearby river and include many *Opiuma* (*Pytheclobium dulce*), Java Plum (*Syzygium cumini*), monkeypod (*Samanea saman*), *hoole koo* (*Leucaena leucocephala*) trees and wild sugarcane (*Saccharum sp.*) among the rocks. On the May 19th site visit, I saw a mockingbird (*Mimus polyglottos*), chickens, and a rusty brown bird about the size of a mynah, which may have been the Hwamei (*Garrulax canorus*), also known as the Melodious Laughing Thrush or Chinese Thrush.

Where documents cited have used the name Hanapépe without the long vowels marked, the original form was retained. This is true for other place names as well.

C. Scope of Work

The scope for the traditional and cultural practices assessment includes the following items:

- 1) Limited review of the existing archaeological information pertaining to the specific sites in the project area. The existing archaeological assessment will be utilized for this part of the scope of work.
- 2) Conduct limited consultations with persons who are knowledgeable about the historic and traditional practices in the project area and region.

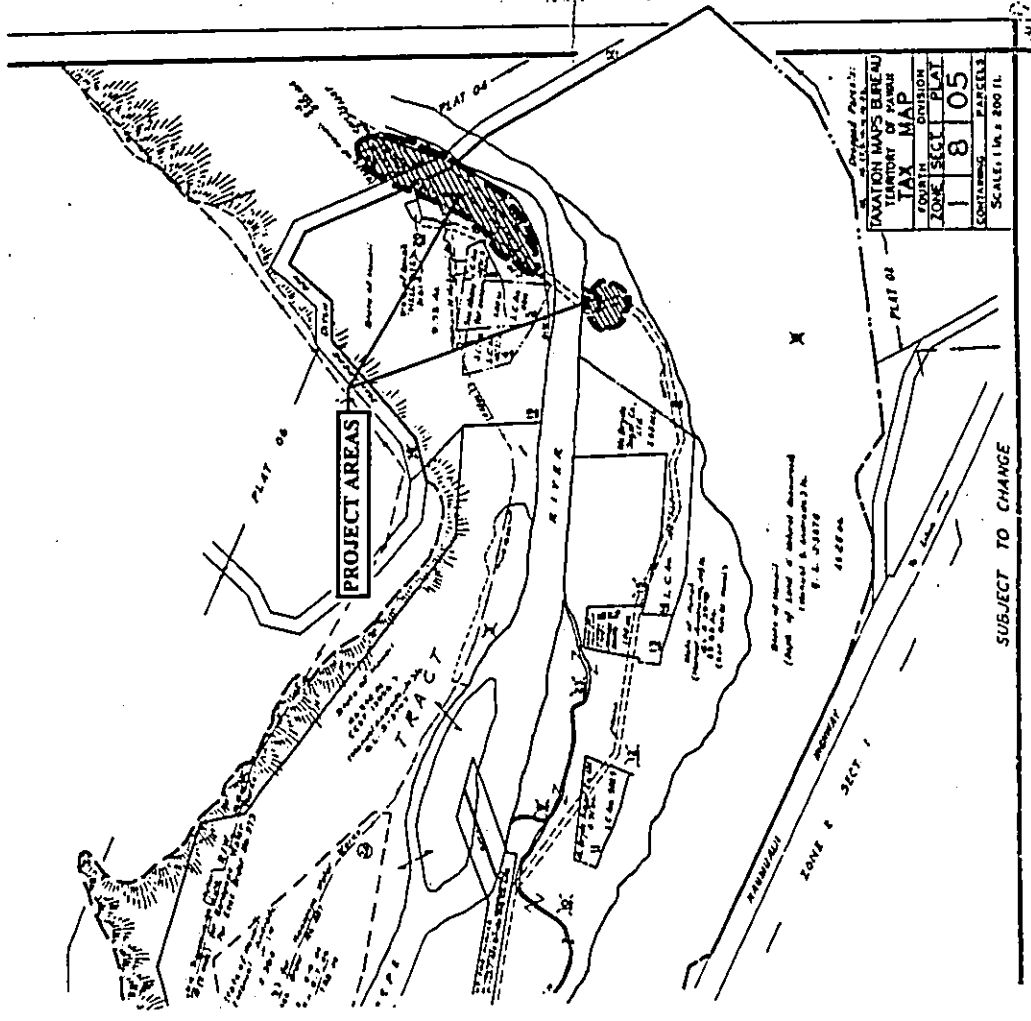


Figure 2 Portion of TMKs 1-805 and 1-8-04 (separated by the ditch), Hanalei Valley, Kauai, Showing Land Commission Awards

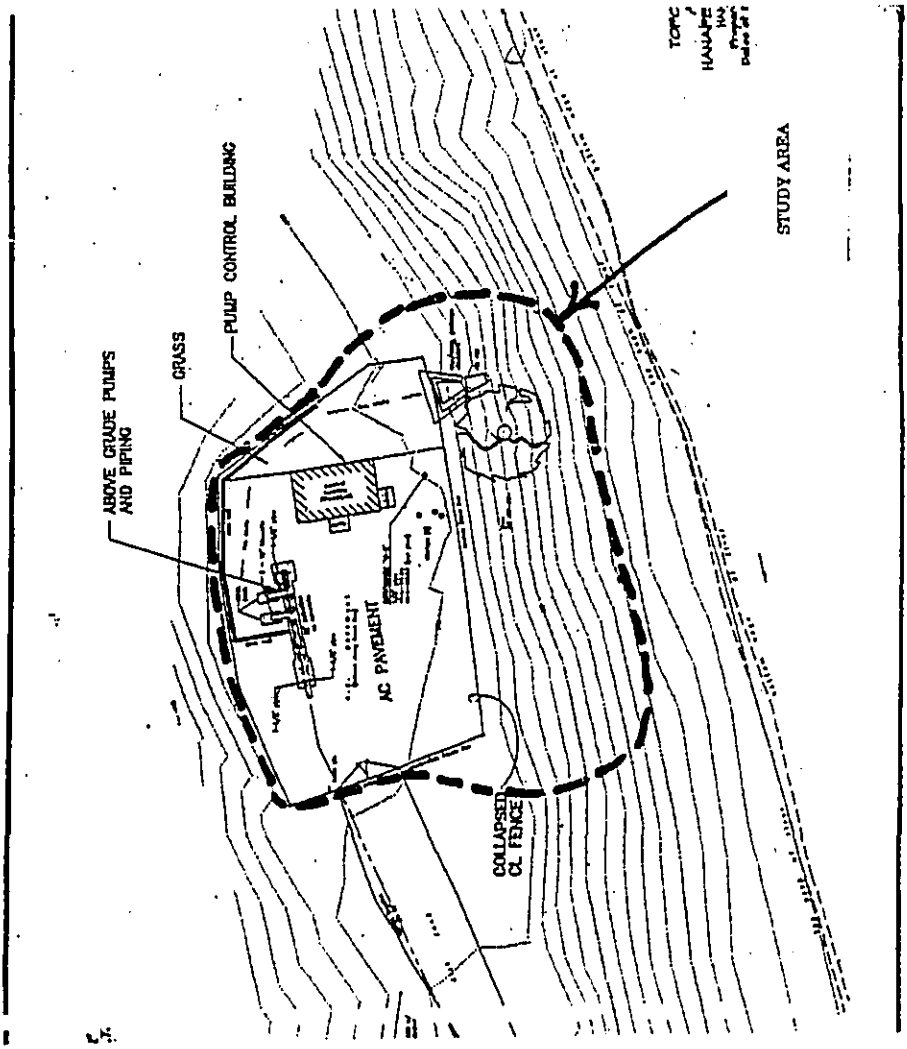


Figure 3 Map of Well Site B Portion of Project Area



Figure 5
 Portion of 1919 Joseph Iao Map of Hanalei Valley, Hanalei, Kona, Kauai.
 Scale 1:300, R.M. 2657 showing 'Ii of Kumini and Kamohio, and Land
 Commission awards

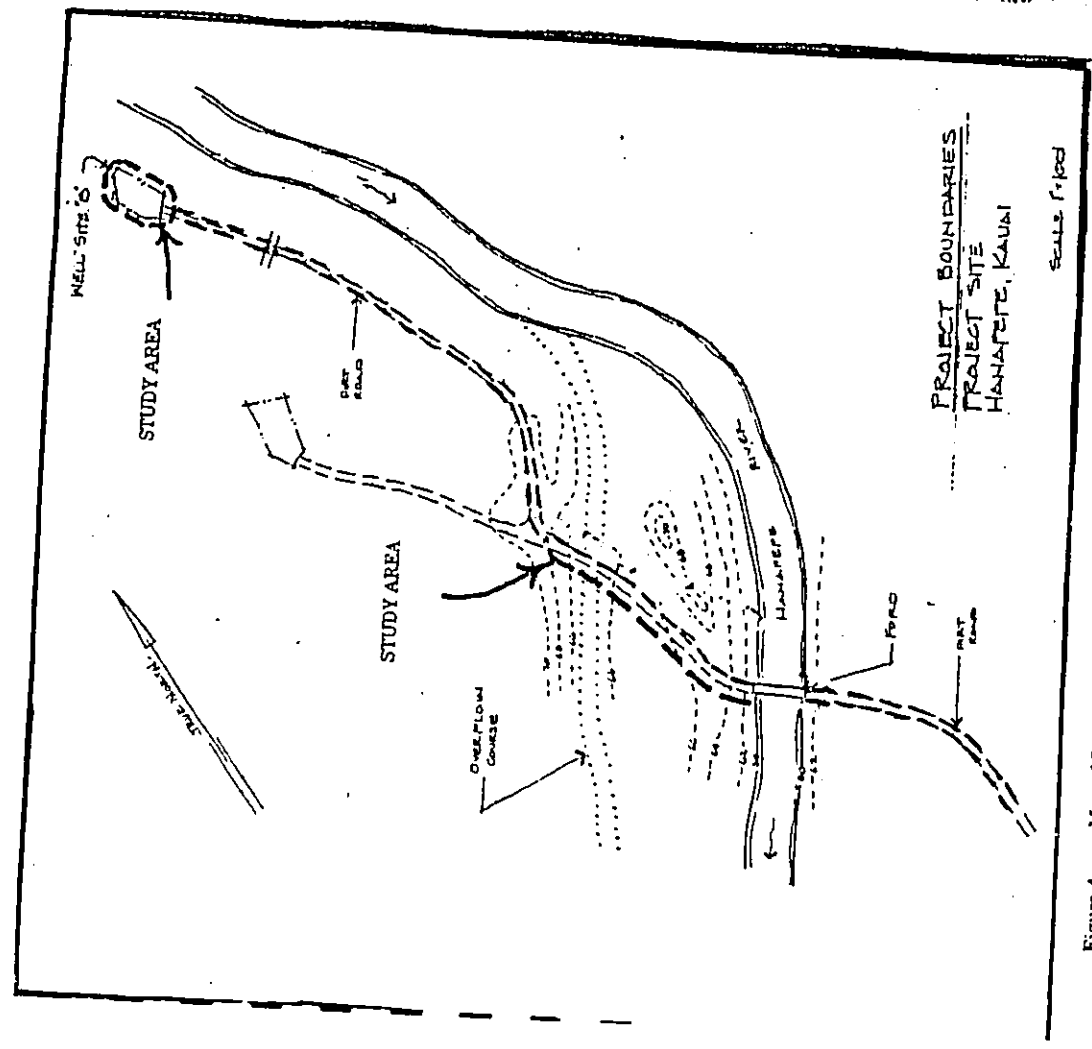


Figure 4
 Map of Project Boundaries in Hanalei, Ahupua'a for Proposed
 Improvements to Well Site B and Associated Waterlines

- 3) Preparation of a report on items 1 and 2 above summarizing and incorporating the results of the archaeological assessment, the information gathered related to traditional practices and land use. The report will assess the impact of the proposed action on the cultural practices and features identified.

D. Methods

Historical documents and maps were researched at the Hawaii's State Archives, the Bernice Pauahi Bishop Museum Archives, University of Hawaii at Mānoa library, The Department of Education, the State Survey office, and the library of Cultural Surveys Hawaii.

The historical background and previous archaeological research for this inventory survey was undertaken in April and May of 2001. The research work consists of an in-depth examination of historical documents, Land Commission Awards, historic maps, previously written reports, particularly on Hanapēpē with specific purpose of identifying traditional Hawaiian and historic land use patterns. The review of existing archaeological and historical information aide us in reconstructing traditional land use activities in the project area.

Hawaiian organizations, agencies and community members on Kaua'i were contacted by letter during the first week in April to request names of potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and the surrounding vicinity. Some of these agencies and organizations include the Office of Hawaiian Affairs, the State Historic Preservation Division and members of the Burial Council. Persons were interviewed in late April and during the weekend of May 18-20, 2001.

Identification of Knowledgeable Interview Informants

As partial fulfillment for the Scope of Work (SOW), informal, summarized phone interviews were to be conducted with several persons recommended by the Hawaiian organizations and agencies on Kaua'i and an informal (not recorded) interview and site visit was made on May 19th 2001. Prior to this, Hawaiian organizations and community members were contacted to identify types of cultural practices and current users of the Hanapēpē Stream, and other persons who were familiar with Hanapēpē, and particularly the area around the ford/dam site. Several persons were recommended who might be knowledgeable about cultural practices in the Hanapēpē area. Letters went out to eight persons, some of whom did not respond and were not available by phone.

The Interview Process

As partial fulfillment for the Scope of Work (SOW), we contacted by telephone and informally interviewed Mr. Kenneth Chang (age 82), and his daughter Nanette, now residents of Kapa'a, Kaua'i for 20 minutes on April 30, 2001. Ms. May Makaanui Hoopii

Corr was also contacted by phone, and consented to being interviewed on May 8, 2001 and the interview lasted 3/4 hour. When contacted again on May 19, she shared more information in a conversation that lasted more than an hour. On May 7, 2001 Ms. Wilma Holi requested and was sent further information and maps. Ms. Holi consented to an informal note-taking interview for May 19th in Hanapēpē. This interview which lasted 6 hours, included a tour of the Hanapēpē Cemetery, nearby Wahiawa, both sides of Hanapēpē lower valley to the end of the roads and the Salt Ponds and Salt Pond Park, but did not include the sugarcane lands on the Makaweli side of Hanapēpē above the canyon.

Another person, who was recommended for interview, when contacted, said she did not know the specific area and was not familiar with that side of the valley. Another recommended informant suffered a personal family loss at this time and was therefore not interviewed. Two other possible informants never responded to requests for information.

During the tour with Ms. Holi, we were able to talk briefly with Mr. Richard Corr, Mrs. May Corr's son, at his taro patch. He had recently been to his family property and had observed repairs to the well site in progress.

Two other informants were met through Ms. Molly "Ka'imi" Summers. Ms. Summers teaches Hawaiian Studies at Kaua'i Community College. Two descendants of the Moke family, who wished to remain anonymous, said their family ancient traditional practices are still being carried out, but that the proposed project would have no adverse effect on those practices. Members who continue *Luau*, say that it is more than martial arts, it is a way of life and involves their daily life and outlook on life. They also stated that to begin to really understand an *ahupua'a* you have to visit the local cemetery and see who is there and know about them. They believed that the Bishop Museum has written records about some of the famous *kahuna* of Hanapēpē, which I might use if I could locate them.

Excerpts from the interviews are used throughout this report, wherever applicable.

Some of the topics researched for this project included: water resources, plant resources of the area, *Io'ou lapa'ou*, *hula*, *luau*, reading omens, seers, chanters, burials and associated practices.

E. Biographical Sketches of Interview Informants

Mr. Kenneth Chang, interviewed by phone on 4/30/01, is 82 years old. He was a young child when he lived in Hanapēpē. He remembers the family house was near the mouth of the Hanapēpē River. His Aunties Maka and Fanny continued to live in Hanapēpē, after his family moved to Kekaha, so he would still visit them. He remembers Auntie Maka would organize expeditions for the family to get taro up in the valley. He does not know exactly where the taro patches were. Everyone would ride horses and they would go up to pull taro and bring bags back on horseback. He enjoyed those trips. His family's stories tell of family expeditions to the waterfall and how they would have to cross the stream 26 times to get there. His aunties also had salt flats and he remembers going with them to the flats. His Auntie Fanny was in charge of fishing along the river. He doesn't

remember where they would fish, but up and down the stream. He has fond memories of Hanapēpē.

Ms. May Mākanui Hoopii Corr, interviewed by phone on May 8, 2001, and again on May 19, 2001, is 83 years old. Her maiden name was Mākanui. She was born on the Kumimi property, lived, married and had her first three children there. She moved away from Kumimi to lower Hanapēpē and after the flood in 1980 or 82 to Kalāheo, but she still owns the property in Kumimi/Kamohio Hanapēpē. She goes to Hanapēpē most days and still works in her son's taro patches in lower Hanapēpē. She did not need a map to know the area. She was familiar with the 'īfi name of Kumimi, and said that is where her family lived when she was young, where she was raised and lived even after she was married. Both her parents were Hawaiian and they were farmers in Kumimi. The family raised taro, rice, and cane when she was little. They would fish in the river and get mullet, 'ōpu and shrimp. The mullet would come way up the stream in the old days, but that is no longer true as the river is blocked below and all you get now is tilapia. She remembers being afraid to swim in the pool in the river because it was so cold and deep. You couldn't see the bottom, but now, she says, you can see the bottom (the river being much shallower). In the old days, she said, you would never starve there. There was always plenty of good things all around to eat. Her son, Richard, has his taro patches in the lower valley, several blocks in from the old "Seto" store. The family still has the Kumimi property, and they use it to pasture their horse. There used to be a shed there but it burned down so now there is only a concrete block where it used to be.

Mrs. Corr remembers being told that the name Kumimi meant "to stand and urinate" from a story about a man standing high on the hill above Kumimi and urinating. She also was always told that Kumimi was one of the "sacred places" and she remembers that lots of offerings were made in that area, particularly in the area of the "pool" in the river. She does not recognize the family names of Kipani, Alihi or Makaulio which were the Land Commission Awards (1848-1853) in that area.

Mrs. Corr's son, Richard, in a short conversation during the tour with Ms. Wilma Holi, said that the Corr land is leased at present and the house there belongs to the tenant.

Ms. Wilma Holi, a former member of the Kāua 'Ōhi' ihau Burial Council and from a multi-generational family in Hanapēpē, was familiar with the subject area at the time she was a youngster and with the well site in modern times. Before all the gates were put in with locks, she said she and other children wandered throughout the valley. She remembers swimming at the "Deep Hole" or "Black Hole" in the Hanapēpē River, near the project area. Recreational swimming and long walks up the valley when she was young, were the only activities she associated with the subject area.

Ms. Wilma Holi said that pig hunting and perhaps pheasant hunting continue in the upper valley, probably done mostly by McBryde Plantation people who have keys to the back of the valley.

Both Mrs. Corr and Ms. Holi have family salt plots at the Hanapepe Salt Park.

II. NATURAL SETTING

A. Historic Setting

Hanapēpē has a rich and fascinating background, probably because it was outside the pre-historic traditional chiefly centers (such as Waialua, Waimea and Hanalei) and of the early historic periods, (such as Lihū'e, Kōloa, or Waimea). In modern times, even though it has had a boat harbor at 'Ele 'ēle for much of the historic period, Hanapēpē (like other southwest Kāua'i communities) has fostered many of the long-time cultural practices and the "old" knowledge. There is a long-established pattern of keeping the "old" ways alive and a tolerance and appreciation of traditional knowledge.

Traditional cultural practices can be detected in many events from legends to modern-day history in Hanapēpē. Briefly, in the Kawelo legend, the chief Aikanaka, is banished by Kawelo. Aikanaka goes to the *kuahūua* or mountain area of Hanapēpē. Kaumuāli'i, the last ruling chief of Kāua'i attempted to use the Russians to challenge the Kamehameha Kamehameha dynasty. In the 1824 rebellion against the Kamehameha dynasty, the Kāua'i chiefs wanted to maintain the traditional re-distribution of land after the death of Kaumuāli'i. This was denied them by the new regime. The Kāua'i forces came together in Wahiawa and Hanapēpē, their rebellion ultimately failed when the Kamehameha forces arrived with armies and guns.

During the Māhele (1848-1853), some claimants in Hanapēpē stated their claims according to their own tastes, one in a very poetic manner, rather than according to advice or formulas provided by *konohiki* or missionaries and commissioners in *chupua'a* elsewhere. Another document shows the banished *hūla* practices continued in Hanapēpē when it was forbidden (1864), ten years before the *hūla* revival under King Kalākaua.

B. Location

The Well B project area (TMK 01-08-04;-06) is halfway up the lower valley in the 'īfi of Kurāimi and Kamohio in the *chupua'a* of Hanapēpē along side the Hanapēpē River, which is a perennial stream. The *chupua'a* of Hanapēpē is located on the western plain of south Kāua'i between the *chupua'a* of Makaweli and Wahiawa in Kōna (also known as modern Waimea District). Waimea District is the largest (the southwestern quarter of the island incorporating 92,646 acres) of the 5 districts or *moku* of Kāua'i (Gay 1875:146). The *chupua'a* of Hanapēpē consists of a long narrow canyon valley, with some plateau lands above the canyon on the Makaweli side, and is located near the eastern end of Waimea district.

Privately owned property in the vicinity of the project area, belongs to Ms. May Corr. The names, May M. Corr and Louisa Mākanui (Mrs. May Corr's deceased sister), are shown on 1943 TMK 1-8-05 as the owners of parcel 5 on the lower or *makai* side of the old augareano siphon (which corresponds to Land Commission Award 8011) and May Corr is listed as the owner for parcel 24, on the upper side of the same siphon/ditch (see Figure 7, 1919 Map of Hanapēpē by Joseph Iao and Figure 2 Tax map). Although the May Corr property on tax maps encompasses the Land Commission Award 8011 to Alihi, Mrs. Corr did not recognize the Alihi family name.

C. Geology

Geologically, Kaua'i consists essentially of a single great shield volcano, deeply eroded, and partly veneered with much later volcanics ... [This shield] rises 17,000 feet above the surrounding sea floor. At the top of the shield was a caldera 10 to 12 miles across - the largest in the Hawaiian Islands. The southern flank of the shield collapsed to form a fault-bounded trough, the Makaweli graben, or depression, some 4 miles wide. Lavas erupted in the caldera gradually filling it, except on the higher northwestern side, and eventually spilled over its low southern rim into the graben, down which they flowed into the sea (Macdonald and Abbott, 1970:381). Hanapēpē is to one side of the collapsed shield, and probably was in part formed by the action of the collapse. Hanapēpē Bay and the salt flats at Ukula are probably at the extreme edge of the infilling from the overflow. Ethel Damon refers to it as "the long earth crack believed to have been rent asunder by volcanic action rather than worn down by erosion" (Damon 1931:220).

The soils in the Hanapēpē area are generally the 1) Makaweli-Waiawa-Niu association along the shore but not along the river bank; deep, nearly level to steep, well-drained soils that have a fine-textured or moderately fine-textured subsoil; on uplands; 2) Hanalei-Kokololo-Pakala association along banks of river from mouth of the bay inward 2+ miles; Deep, nearly level, poorly drained to well-drained soils that have dominantly moderately fine-textured or medium-textured subsoil or underlying material - on stream bottoms and flood plains; and 3) Rough mountainous land-rough broken land - Rock outcrop association along all upper valley and inland, well-drained to excessive drained, very steep to precipitous lands of mountains and gulches.

In the project area the soils at this bend in the river are designated as HrB, Hanalei silty clay with a deep water table, rRH river wash, rRR rough broken land, and PFXC Pakala extremely stony sandy clay. The Hanalei silty clay soils are associated with taro, pasture, sugarcane, and vegetables. The riverwash consists of nearly level bars of sand, gravel, and stones along perennial and intermittent streams. It is nearly bare of vegetation and is subject to overflow and shifting during normally high water. Accessible areas of riverwash are typically sources of materials for roadbuilding and other types of construction. Rough broken land consists of very steep land broken by numerous intermittent drainage channels. Runoff is rapid and geologic erosion is active. In most places some weathered rock fragments are mixed with soil material. This land type is used primarily for watershed and wildlife habitat. The Pakala extremely stony sand clay is similar to Pakala clay loam except that it is extremely stony and includes areas where the soil is gently and moderately sloping. Runoff is low and erosion hazard is slight. This soil is used for pasture and woodland.

The Well Site 3 area is just above one of these flooding overflow areas of the river and landslides are common in the area.

III. HISTORIC BACKGROUND

Heiau	Francis Gay (1876) identifies and gives the location of three Hanapēpē heiau: 1) Maloku, Small heiau at the top of Kahalau land [Manuahij]; 2) Kauakahiuu [Where-the-little-heiau-stands - Gay] A small heiau or uru, close to Kalihij; and 3) at West Palelele, small heiau at top of flat where ridge runs up to top of ridge below Peapea peak [Manuahij].
	Thomas G. Thrum recorded seven heiau in Hanapēpē (1907):
Nihoana	'Ele'ele. A small heiau, about 20 x 30 feet, low walled. Destroyed.
Makole	On Makole Bluff, Hanapēpē. A small heiau of platform character on side of bluff destroyed in the sixties [1860s]; portion of wall said to be still seen.
Pualu	Kapahili, Hanapēpē. A partly walled paved heiau at base of hill, built up some six feet in front and filled in with stones, now in greatly disturbed condition: its front is also badly fallen away in places. Rear wall stands 4 feet above the heiau floor in good state though not over 4 feet thick. It measures straight on the back 135 feet, on west end 40 feet, curving on the front so as to give 54 feet at the middle and rounding off to a point at the east end. Of pookanaka class. Kane its deity.
-[name unknown]	Akawai, Hanapēpē. A small paved heiau of about 50 feet square, in bad condition. Said to have been erected by Kaunualii. Class unknown. Destroyed about 1865.
Kuwiliwili	Hanapēpē Valley. A large high walled enclosure of pookanaka class; now destroyed.
Kauakahinunu	Puolo point, Hanapēpē. A walled heiau of medium size, at the shore; part of walls still standing. Kane and Kanaloa its deities. Class unknown.
Moloku	Hanapēpē, near peak of Kuopoo ridge at junction with Kahalau; an open platform heiau, in fair condition.
	Martha Beckwith, in <i>Hawaiian Mythology</i> , lists a prayer "given by Kane when he began to offer prayer in the heiau of Kuikahi, at Hanapēpē, Kauai, near the stream of Manawai-o-puna" which calls upon the lesser Kane gods to do their duty and aid him (Beckwith 1970:53). Manawaiopuna stream is in the 'iif of Ko'ula, far up in the valley.

Local resident Wilma Holi identified the Kapahili valley heiau (Pualu) as the site of the male hula heiau.

Other Archaeological Sites

In his archaeological survey of Kaua'i island (1931) Wendell Bennett located five of Thrum's heiau and added other site types, which included salt pans, houses, agricultural terraces and sand burials for a total of 12 sites in Hanapēpē. Beginning near Puolo Point and going inland his survey included the salt pans (now part of Salt Pond Beach County Park State Site # 50-30-09-49), habitations surrounded by 2-3 foot high walls as well as wind shelters, and fishing shrines. He also mapped Kauakahūnu, a medium-sized heiau dedicated to Kāne and Kaneloa and notes sand burials on the northwest side of the river. Bennett also noted that:

In Hanapēpē Valley the taro terraces are everywhere that the land is irrigable. On some the walls are 3 feet high. House sites are of the usual types. Low caves are utilized by building up in front. There is evidence of people having lived in every turn of the valley. The valley is narrow in most places. Farther on toward the sea the valley broadens and along the sides there are still house sites built up. One house site of stone was 20 by 30 feet and well built. It was walled 4 to 8 feet in front to make the platform level on a steep, rock slide. It was walled in back 3 feet against this slide. On the sides are walls 2 to 3 feet high in back, and the same in width, though in the front they are much lower.

Bennett's sites for Hanapēpē include (Figure 6):

- 30-50-09-48 Kuwiliwili heiau. Said to have been located just below Makaweli Camp 3, which site is now in the cane fields. Thrum describes this heiau as, "A large, high walled enclosure of *pookanaka* class now destroyed." (This site appears within the Hanapēpē *ahupua'a* boundaries).
- 30-50-09-49 Salt pan, near Puolo Point, Hanapēpē.
- 30-50-09-50 House sites, at Puolo Point, Hanapēpē.
- 30-50-09-51 Kauakahūnu heiau, at Puolo Point, Hanapēpē.
- 30-50-09-52 House site or fishing shrine, at Puolo Point, Hanapēpē, just east of Site 51 at the shore.
- 30-50-09-53 Sand burials. In the sand on the northwest side of Hanapēpē bay, burials are found.
- 30-50-09-54 Makole heiau, on Makole bluff, Hanapēpē.
- 30-50-09-55 Puolu heiau, on the east side of Kapaehili gulch about one quarter mile from the road, and at the base of the second pali.
- 30-50-09-56 Akowai heiau, at a place called Akowai on the steeply sloping side of a bluff.
- 30-50-09-57 House sites, at Akowai, Hanapēpē near Site 56.
- 30-50-09-58 Taro terraces, in Manuahi Valley. Like Site 60 this site is completely terraced for taro and contains similar house sites (this site is located in the mauka portion of the valley and is not shown on figure 6)
- 30-50-09-59 Moloku heiau, in Hanapēpē near the peak of Kuopoo ridge at its junction (this site is located in the mauka portion of the valley and is not shown on figure 6).

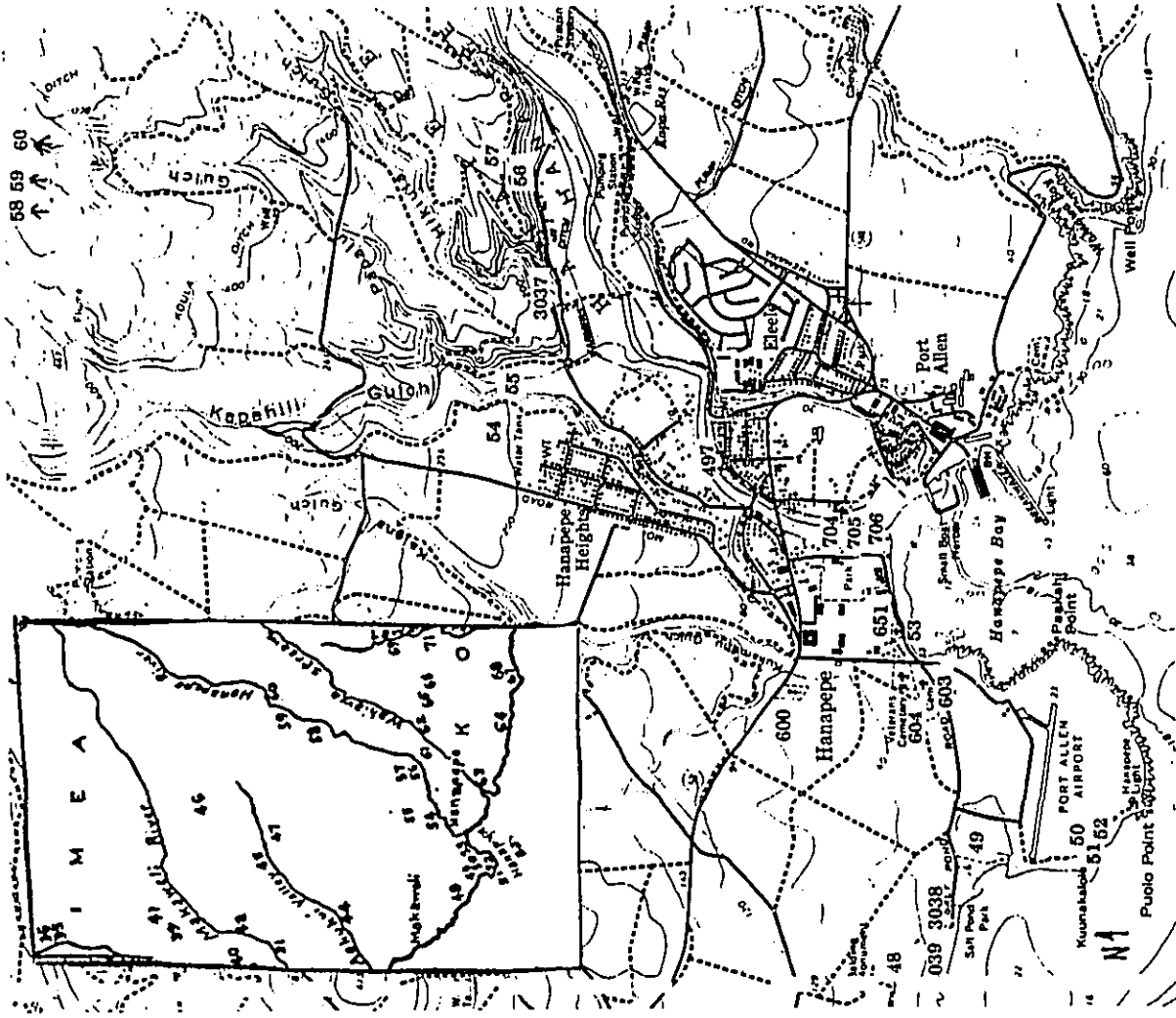


Figure 6 Portion of USGS Topographical Map 7.5 Minute Series, Hanapēpē Quadrangle Showing Archeological Sites, Scale 1:24,000 (See Inset Portion from Bennett 1971:98)

30-50-09-60 Taro terraces and house sites, Hanapēpē Valley (this site is located in the mauka portion of the valley and is not shown on figure 6)

Other archaeological sites in the Hanapēpē area are (See Figure 6):

30-50-09-497 Hanapēpē First United Church of Christ Burials & Cultural Layer (TMK 1-09-04:11) "limited pre-Contact deposit ... basalt flakes, flakes with polish, an edge altered flake, a basalt drill, volcanic glass and sea urchin spine files were found" (Spear 1992:20) (Kikuchi 50-30-09-BC12)

30-50-09-600 Filipino Cemetery (Kikuchi 50-30-09-B003)(Kikuchi & Remoaldo 1992)

30-50-09-603 Cemetery, Catholic/Chinese (Quad 9) (Kikuchi 50-30-09-B004) (Kikuchi & Remoaldo 1992).

30-50-09-604 Veterans Cemetery (Kikuchi 50-30-09-B005) (Kikuchi & Remoaldo 1992)

30-50-09-651 Cleveland's Japanese Cemetery (Kikuchi 50-30-09-B002) (Kikuchi & Remoaldo 1992)

30-50-09-704 Burial (Creed, Folk & Hammatt 1994).

30-50-09-705 Burial (Creed, Folk & Hammatt 1994)

30-50-09-706 A cultural layer (Creed, Folk & Hammatt 1994)

30-50-09-3037 Burial Caves - Kaalawiki (Kikuchi Site 1) (Kikuchi 1963:3)

30-50-09-3038 Salt Pond County Park Shoreline deposit (Kikuchi) (Kikuchi 1982)

30-50-09-3039 Fishing Shelter (Kikuchi Site 4) (Kikuchi 1963:6)

Sites where numbers are unknown or have not yet been recorded in the State of Hawai'i numbering system:

Hanapēpē Heights Japanese Cemetery (Kikuchi 50-30-09-B008) (Kikuchi & Remoaldo 1992)

Fort Allen Cemetery (Kikuchi 50-30-09-B001) (Kikuchi & Remoaldo 1992)

Baldwin Monument (Kikuchi 09-12 erected by Japanese workers in Makaweli to honor Mr. Benjamin Douglas Baldwin) (Anon. 1974, *Archaeology on Kaula*, Vol 3, No. 1:1-5)

While the cemeteries and First United Church burial are not pre-historic (Kikuchi 1992), nor is the Baldwin Memorial, the rest of the burials, caves, walls, and house foundations are presumed to be prehistoric sites.

Not listed in any of the above sites was a *heiau* to guide canoes at night. Early Hawaiians set up their own "lighthouse" on the high land north of Hanapēpē Bay. The hill for the beacon fire was centrally located on the south coast, where much of the fishing activity took place. This fire was burned at a *heiau* dedicated to Lono, the god of agriculture, wind, cloud, and sea; it was called Kukui-o-Lono, meaning "light of Lono" (Dean 1991:138).

Bennett shows Kukuilono at Kilauea, and Dean does not list her source for this information, but it is not unlikely that such a fishing beacon would have existed. There are several places where this might have been, and one of them is at Kūku'i Point which is just west of Anakua Point (on the Makaweli Hanapēpē border). Also there is a hill named Kukuilono on Imlay's 1891 map - but in Kalaheo north and west of Hanapēpē Harbor. There is however today a light at Kūku'i Point and this light is atop a 22-foot pyramidal tower, 47 feet above the sea (Dean 1991:150). This description of the location would argue also for Kūku'i Point being the location of an early Hawaiian fishing beacon. The Hanapēpē Light marks a small bay that was once an important canoe landing for ancient Hawaiians. The beacon ... was built in 1902 and was one of the last lights to be established by the Hawaiian government. The modern automatic light is similar to the one that marks Kahala Point (Dean 1991:152, her source is the National Archives).

Another light, Hanapēpē Light, is at Puolo Point near the Ukula salt flats which was also the site of Kuahanui, described by Francis Gay as a canoe landing. Dean explains that after the sugar industry developed (by 1884) there were "lanterns showing red lights to distinguish them from plantations at [among other places] Hanapēpē (Dean 1891:139). She also describes a lamp raised 36 feet to the top of a tower at 'Ele'ele Landing, to guide interisland traffic. By 1908 the Light House Board had established these "lighted aids" such as at 'Ele'ele Landing and Puolo Point. There are probably remnants of Sites 51 & 52 still extant at Puolo Point (Pers. Comm. Nancy McMahon 1995).

Dr. William Kikuchi documented numerous archaeological resources of the Kona District in 1963. In Hanapēpē, all the cliffside caves he examined had been vandalized (1963:3); Akowai *heiau* he noted still had standing walls but they were in a poor state of preservation; Site 3 is the Salt Pond Beach Park (which he studied again in 1983 see below); Site 4 Fishing Shrine near Site 3 which he determined was also used as a living area; Kuwiliwili *heiau* had a marker where the *po okonaka* class *heiau* was said to be located; Site 6 (See Bennett Site 40) was the salt pan, a large area where salt was produced from sea water (the practice is still continued); Site 7 (Bennett's Site 50), the Pu'olo Point *heiau* sites, of which Kikuchi noted "Only a few walls may still be seen" (Kikuchi 1963).

Dr. Kikuchi also did a damage assessment to the Salt Pond County Park (site -3038) (Hurricane Iwa 1982) and recommended that the entire area be data recovered because of the potential for looting and the poor condition of the site from storm erosion. He found 15 mostly fishing-associated artifacts among the storm debris of the park (Kikuchi 1982).

Dr. Robert L. Spear (1992) documented a cultural layer (Site 50-30-09-497) with traditional artifacts and his carbon date sample had an A.D. range of 1360 to 1590, supporting the interpretation of the pre-Contact cultural layer at the First United Church of Christ and Hanapēpē Town.

Dr. Hallett H. Hammatt did a reconnaissance of 72 acres in the 'iti of 'Ele'ele, on almost exclusively cultivated cane lands with the exception of 2 acres of residential property, and he concluded that cultivation of sugar cane on the land since 1884 "would have destroyed all traces of former cultural features which may once have been present" and no sites were found in gulches or in uncultivated areas (Hammatt 1990:10).

None of the above-mentioned archaeological sites is within the present project area.

Place Names

William Hyde Rice, speaker of Hawaiian and a Kāua'i inhabitant claimed to think in Hawaiian, would translate into English the feeling of the words. He believed "the fruitful season" or "time of plenty" (Rice 1977:237) best described the meaning of "Kāua'i." The modern equivalent is, "The Garden Isle." The name cited by the earliest voyagers in their commentaries is "Atōoi."

Hanapēpē (or Hanapepe) literally translates as "crushed bay," which is attributed to its landslide. Hanapēpē was also an ancient surfing area (Pukui, Elbert and Mookini, 1974:41). A List of Named Places in Hanapēpē appears as Appendix A. Most of these names are taken from Francis Gay's 1873 Kāua'i Place Name manuscript. To Gay's names we have added names found in Land Commission claims and Boundary Commission records. This combination of place names is specific only to Hanapēpē.

The project area is situated in two 'i'i, one named Kūmimi and the other Kamohio. Kūmimi, Francis Gay says, means a poisonous crab. Pukui and Elbert note they are small crabs used in sorcery and which are inedible (Pukui & Elbert 1986). Margaret Titcomb further elaborates among different Kūmimi, noting that although they were considered inedible by Hawaiians and are reportedly poisonous at certain times of the year when the water is murky, the term poisonous arises from inaccurate translations of the words 'auwa and 'ouwa'auwa, meaning bitter, sour, poisonous, and notes that F.L. Tabrah, has heard

these small creatures, squeezed in the hand, produce enough toxic substance to poison a man" (Tabrah 1967 IN Titcomb 1978:367)

and that the large red kūmimi (*E. spendidus*?) was "highly poisonous, very bitter, and was used in medicine, sometimes as a heart stimulant" (Titcomb 1978:367). This latter kūmimi is found in the deep sea.

Former resident, Mrs. May Corr understood from her family that Kūmimi meant "to stand urinating" from *Ku* and *mimi*.

The two meanings are not mutually exclusive, since Hawaiian has different levels of meaning and different meanings at different times are also quite possible. The meaning of the name Kamohio is not known from Gay, but might possibly be *ka-mōhio*, which literally means the draft or gust of wind (Pukui & Elbert 1986).

Population

Early visitors to Hanapēpē mention a population of 700 inhabitants (Brigham 1847 *inter alia*). Coulter's 1853 map of Kāua'i population distribution, shows Hanapēpē as the next good-sized community coming east from Waimea, although population along the shoreline is fairly constant. In 1930 Hanapēpē had 1,088 inhabitants (Territorial Planning Board 1939:30). The 1980 census gives the population of Hanapēpē as 1417 and that of 'Eie 'eie (in modern times in a different ahupua'a) as 580 totaling almost 2,000 inhabitants. Although the population was around 700 at the time of the Land Commission Awards, the newly introduced viruses and diseases had reduced the population by conservatively

between 40% and 66% and perhaps by much more (Stannard 1989:46) so it is possible that Hanapēpē may have once had a population more in the neighborhood of 1200-1300 inhabitants before the time of Western contact.

The two 'i'i (Kūmimi and Kamohio) at the time of the Māhele (1848-1853) had three *ku'aua* with house sites, so there were perhaps three families living there. In the early 1900s, when Ms. May Corr was a child, she was one of a family with 16 children, but they did not play with or go to school with other children, so perhaps other families no longer lived in the area. No other names are shown on the 1943 tax map. At the present time, the May Corr property is leased and the lessee has a house on the site.

Boundary Surveys

In the 1870s the Boundary Commission was called upon to survey the four largest 'i'i within the ahupua'a of Hanapēpē. The Estate of Queen Kapiolani requested the survey of the 'i'i of Kūloa (1870); Eliza Sinclair the 'i'i of Kōula (Kō'ula) (in 1873 after she bought it from the estate of V. Kamamalu); C.R. Bishop the 'i'i of Manuahi for King Lunalilo - Kamehameha III (1873) and John Dominis the 'i'i of 'Eie 'eie on behalf of his late Majesty Kamehameha V (1873). Finally, John Dominis also requests surveys for the entire ahupua'a of Waimea, Hanapēpē, Anahola and Hanalei as they are Crown Lands (1873). James Gay is the surveyor, but gives no overall acreage for Hanapēpē as the other aforementioned 'i'i are within this larger area. Within Hanapēpē there are 21 smaller 'i'i in the ahupua'a, among which are the 'i'i of Kūmimi and Kamohio in which the project is located.

E.S. and Elizabeth Craighill Handy described Hanapēpē valley, which they explored in 1964, as about nine miles long from its mouth to the waterfall at the head of the valley (Handy and Handy 1972:431). The U.S.G.S. map appears to show approximately 12.5 miles from shore to the upper limit of the valley, but the ancient ahupua'a was even larger when we account for the mile or so out to sea that was part of the ahupua'a up through Māhele times

Water Resources

Most of Hanapēpē Valley is a canyon land of streams and stream valleys. Hanapēpē Stream runs from the confluence of Kōula and Manuahi Streams to the sea. All are permanent streams. They, in turn, are the results of many other mountain tributaries (See Appendix of Valley Names). Each of these undoubtedly has intermittent streams as well. The large upper valley of Kōula, served as a place of retreat for missionaries and large property owners and many early travelers mention going to Hanapēpē to view its waterfalls. A land with abundant waters was considered a rich land (Handy and Handy). The Hawaiian word for wealth is "waiwai," or much water. The project area of Well Site 3 is along the Hanapēpē River and informant Ms. May Corr recalls that there was always food in that area. Even when the river would flood, she said, it would merely mean that the taro patches had to be replanted, but their home was never flooded as it was back from the river.

Legends Mentioning Hanapēpē

Forannder recounts a long tale of the hero Kawelo, who became a ruling chief of Kaula'i. The gist of the story is that Kawelo, who is born on Kaula'i in Hanamaulu and raised with his grandparents in Wailua, travels away to O'ahu and returns to earn his royal title. The action of the tale begins when his grandparents travel to Waikiki to see their other grandchildren, taking Kawelo with them. Kākūhewa is the ruling chief of O'ahu at this time (16th century). In Waikiki Kawelo learns the skills of battle [including *lua*] and how to wrestle and other important skills. He marries his teacher's daughter. He has many adventures as he proves himself to be wise, strong, cunning and favored by the gods. Having learned these skills the occasion arises for him to prove himself. Aikanaka, the chief of Kaula'i, has taken Kawelo's parents' lands and all they have to eat is hair lice! Of course, Kawelo sails to Kaula'i to do battle with Aikanaka. With skill and cunning and the help of his warrior wife, Kanewahinekinohā (who was particularly skilled at the *pi'ikoi*, swinging club) he succeeds in killing off all of Aikanaka's warriors. Aikanaka, his priests, and family manage to get away and "proceeded to the uplands of Hanapēpē, at Kōula, where Aikanaka took up his residence." The banishment takes Aikanaka to an area as removed from the reigning power as possible.

Aikanaka ... lived in the uplands of Hanapepe and in great poverty. He had no lands, no honors, no food, no meat, no kapa and no home. All that Aikanaka did was to till the ground to raise food for their future use (Forannder 1959:102).

The plot thickens as Kawelo's adopted son, Kaeleha, is awarded the district of Puna as his part in the conquering party, but one day travels to Hanapēpē and befriends Aikanaka who had come down to Wahiawa to fish and to take a swim in the sea. Kaeleha stays, marries Aikanaka's daughter and eventually plots to overthrow Kawelo. Kawelo, of course, hears of this and promptly comes to Hanapēpē to do battle and after many feasts and acts of cunning, he kills his traitor son and Aikanaka and returns to live with his wife and parents in Hanamaulu and to peaceably rule the Island of Kaula'i.

This tale refers to Hanapēpē in the 16th century as removed from the sphere of power. While this is a legend it probably refers to real people and real events, no doubt embroidered with heroic details, much as were the people and events of the King Arthur legends on the opposite side of the world. One of the inhabitants of Hanapēpē at the time of the *Kūleona* awards carries this legendary name of Aikanaka.

In another legend involving the pig/man god, Kamapua'a, Makali'i, Kamapua'a's enemy, is banished also to the mountains of Kaula'i where Makali'i then lives with all his people (Forannder, 1918 [reprint 1999]V:352).

These tales indicate that the mountains of Kaula'i (including upland Hanapēpē) served as a refuge for banished people. Certainly, the uplands of Hanapēpē, such as the *'i'i* *kupono* of Kōula, appear to have a wealth of resources, many old taro terraces can still be seen (Wm. Kikuchi, personal communication), birds were abundant, and there are a variety of fresh water shrimp in the pools and rivers, so this was probably not such a bad place to seek asylum.

In "Concerning the Soul After A Person's Death,"

the soul also lives on a dry plain after the death of the body; and such places are called *ka leina o ka uhone* (the casting-off place of the soul). This name applies to wherever in Hawaii nei people lived.

For Kaula'i people this place is at Hanapepe (Forannder 1918 [reprint 1999]V:576).

Early Post-Contact Period (1778-1847)

Archibald Menzies, doctor and botanist under Captain Vancouver, on one of the earliest English ships visiting the Hawaiian Islands, came to Waimea in 1792 and describes a grass fire burning over the plains several miles to the east (which would be in the area of Hanapēpē). Captain Vancouver first supposed it to be a signal of hostilities but was told it was the annual burning to rid the plains of the old shriveled grass and stumps so the new grass crop would come up clear and free and such practice would provide the best grass for thatching houses (Menzies 1920:32).

Ethel Damon describes the bounty at Waimea for the early British fur traders "At Waimea these hardy voyagers 'wooded and watered', and found 'plenty of pork and salt to cure it.' Salt taken aboard ship at Waimea may well have come from the *'i'i* of Ukūla in Hanapēpē as these salt lands were quite large. She describes the use of salt by Hawaiians

Owing to the presence of several salt lakes in the Sandwich Island, and to the advantage of the longer dry season, the natives here had formed the habit of drying out salt in its crystal form, and storing it carefully and of using it freely in the preservation of fish, as well as directly with their meals (Damon 1931:228).

The first mention regarding Hanapēpē itself in the early historic literature noted is in *Russia's Hawaiian Adventure 1815-1817* (Pierce 1965) in the diary of Georg Scheffer of the Russian American Company. Scheffer was a Russian trader who scouted out sandalwood and other trading goods for his company. He tried to convince Russia to annex Hawaii and wanted to help Kaumuali'i recapture all the other islands for which Scheffer would be entitled to all the sandalwood. For several years he was on good terms with the ruling chief Kaumuali'i and his high chiefs. Among the lands he was given by Hawaiian *ali'i* are the *chupua'a* of Hanalei (renamed Schäfferthal or Scheffer's valley), land in Waimea for plantations and factories, the *'i'i* of Mahinuali in Makaweli, followed shortly thereafter by a gift of the *'i'i* of Kūloa in Hanapēpē.

(October 14 [1816] ... I spent two days in Hanapepe, where I received for the Company from the chief Obana Platov [Obana Tupigea - Opāna Kupikea renamed Platov by Scheffer] a village with eleven families. It lies in the province of Hanapepe on the right bank of the river Don [Hanapepe] and is called Tuiloa Platov [Kūloa] (Pierce 1965:185) (bracketed information added

¹ Pierce notes that these dates are of the Julian calendar rather than the Gregorian calendar used exclusively today and are therefore about twelve days behind (Pierce 1965:ix)

for this report).

Document 24: Grant of Land by Princess Naona of Kaua'i to Scheffer, October 1, 1816 and Document 25: Grant of Land by Chief Ovana Platon to Schäffer, October 1, 1816 (Pierce 1965:80-81) are transcriptions of Scheffer's records. Scheffer renames the chiefs, the rivers and valleys of Kaua'i for ones in his homeland. His diary mentions that he has scouted out the entire island and has been given much sandalwood. Pierce claims Scheffer evidently relished the enmities between Kamehameha I and Kaumuali'i and hoped to profit handsomely if the Russians would come to the aid of Kaumuali'i. Scheffer states in his diary that he doesn't care what the islanders do because this "island belongs to the Russian American Company. Scheffer also has environmental and economical concerns. He plans, while cutting sandalwood, to put in new plants so there will be a permanent supply. He writes about his ideas of agriculture and notes that "Cotton should be Russia's main objective in the Sandwich Islands" as it "yields in a short time more return for a small expenditure and effort than all the fur trade on the Northwest coasts." He wants to import people from Hindustan, Africa, or China for their knowledge of how to grow and process it, "so as to teach the Russians, Aleuts, and the natives" (Pierce 1965:191). Scheffer soon puts these ideas into practice. A month later in 1816 his diary records:

[November] 30 I set out for Hanapepe, inspected the estate of Platon on the river Don, and found it extremely rich in taro fields. I ordered the dry land planted into cotton, tobacco, maize, and also transplanted here sufficient orange, lemon, and olive trees. I delivered there a number of brood sows and assigned two old Aleuts as watchmen (Pierce 1965:187).

and later:

[December] 23. Taboo. The wives of all the chiefs visited me today. The queen's sister Tainoa, who previously gave the company land, today transferred also the valley of Mainauri, while Queen Monolau, whom I cured of illness, presented me with land in the Georg (Kainakahi) Valley in the Hanapepe province. I gave her a piece of silk material (Pierce 1965:192) (Pierce's parentheses and brackets).

The grant from Chief Obana Platon (Opana Kupikea?) for "Tuiloa on the River Don" and "Mainauri" and "Georg" are both dated October 1, 1816 (Pierce 1965:80). "Georg" is described as "a large piece of land nine versts long and fifteen wide between the port of Waimea and Hanapēpē, along the seashore where one could gather a great deal of salt" (note: 1 verst = 66 miles)(*op. cit.*:127). This description seems to indicate that the area included the 'i'i of Ukula (SW of Hanapēpē Bay). Pierce believes that Mainauri and the salt land may be in Makaweli, 'i'i of Mahinauli, but these salt lands may have included the 'i'i of Ukula. The section of salt lands which remains today has been preserved as the Salt Land State Park in Hanapēpē. Barrett mentions that a Russian ship from O'ahu to Sitka carried as much as 50 tons of salt in the 1809-1819 period (Barrett 1988:356). However, there is little information about Kaua'i trading. Since salt was such a precious commodity for the Russians in Sitka, one might suppose Kaua'i sent its share.

In a January 1, 1817 entry Scheffer talks enthusiastically about the high quality of the cotton he has grown. He notes that taro and maize are two important Sandwich Islands crops that "are unrivaled as foodstuffs, and extremely suitable for transport and for prolonged storage" and he expects a high return of a new crop, little grown in the islands before his time - tobacco - which is of far better quality than Russian snuff tobacco. Another fortune-making venture he foresees is for salt, which is plentiful in the islands. Sugar in the islands, he says, "is of a height and quality which I have never seen anywhere else." He dreams great dreams:

The oil nut (*kuku*) brings no small return. Grapes grow twice in a year; I have planted enough of one kind which if carefully prepared ought to make wine which should surpass Madeira. I need not mention the fruits of the bread plants, pineapples, coconuts, oranges, lemons, bananas, melons, etc. These items will bring no small price and if correctly handled can upset in one blow the trade of the English and Americans in China, etc.; of this I am convinced (Pierce 1965:196).

As might be expected, the American traders felt very threatened by Scheffer and soon plotted to put a quick end to his empire.

Edward Joesting's version of the rivalry in 1822 between Georg Scheffer (Schäffer), and the Americans and by King Kamehameha notes that the Americans spread the word that America and Russia were at war and Scheffer rushed from where he was staying in Hanapēpē to Waimea to protect his ship where the Hawaiians and Americans made him leave Hawai'i immediately without allowing him to take any of his possessions (Joesting, 1984:84). Pierce's collection of Scheffer correspondence contains a letter dated May 17, 1819 noting that Dr. Scheffer "had spent about 170,000 rubles in money and goods belonging to the company for the purpose of buying lands for the Company, for gifts to Kaumuali'i, his wives, and relatives, for the establishment of factories and plantations which were abandoned without any profit to the Company" (Pierce 1965:138).

Shortly after Scheffer departed, the Ruggles, a missionary family, moved eastward (from Waimea) in 1822 to establish a mission station at Hanapēpē (Kauai Bicen. Comm. 1978:33).

Small houses of rough stone laid up in mud mortar were built for the white families, a cellar being a requirement for each dwelling (Damon 1931:252).

However, Kaumuali'i's death bought about the 1824 rebellion and reprisals for people in Hanapēpē participating in the rebellion.

The Kauai Rebellion of 1824

After the long peaceful reign, the death of Kaumuali'i caused an attempted rebellion Kalanimoku sailed to Kauai for Kamehameha III to proclaim the dead chief's will and to settle government affairs and land disputes, since Kaumuali'i had finally sworn allegiance to the Kamehameha dynasty. At Waimea, Kalanimoku (Kamehameha's representative on Kauai) called a council of chiefs and announced to them that "those of the chiefs who hold land, they are well off; the commoner who holds property is fortunate; the chief or commoner who has no portion is unfortunate. The lands shall continue as they now stand. Our son, Kahala'i, shall rule over you" (Kamakau 1961:268). This did not please the Kauai chiefs. The leeward Kauai chiefs, under Ki'aimakani and supported by Ka'umuali'i's son, Humehume (or George Kaumuali'i), wanted the land re-divided under a new rule, as was normal when a chief died, but Kalanimoku refused. Before Kaumuali'i's death the Kamehamehas did not administer the Kauai lands, as Kaumuali'i had control of them until he was abducted by Ka'ahumanu and when he pledged his allegiance to the Kamehamehas, he was allowed to retain his control of Kauai. After his death, Kauai fell to the Kamehameha dynasty. These leeward chiefs opted to rebel and stormed the fort at Waimea but most were killed. Those that lived set up a fort at the Hanapepe-Wahiawa border but they didn't count on the ten ships of men and arms sent from Maui and Oahu, including Hoopili (ruling chief of Maui), sent to support Kamehameha's claims against Humehume.

On August 8 [1824] the battle of Wahiawa was fought close to Hanapepe. The Hawaiian men were at Hanapepe, the Kauai forces at Wahiawa, where a fort had been hastily erected and a single cannon (named Humehume) mounted as a feeble attempt to hold back the enemy. In the evening there was advance made, but the forces of Hawaii retired to Hanapepe for the night. A hard rain prevented the Kauai men from firing the grass that night and making a rush in the morning as they had intended. There had been a rainbow, and Hoopili predicted, "if the base were on the other side and the tip here we should be defeated tomorrow, but since we have the base and they the tip we shall be the winners. I believe not one of our men will fall." ... Large numbers of Kauai soldiers had gathered on the battleground, but they were unarmed save with wooden spears, digging sticks, and javelins. Many women were there to see the fight. The men acted as if death were but a plaything. It would have been well if the gods had stepped in and stopped the battle. No one was killed on the field, but as they took to flight they were pursued and slain. ... For ten days the soldiers harried the land killing men, women, and children. Humehume had ridden away to the mountains with his daughter and his wife, Pake. Many fled to the mountains until amnesty for all was declared. Kalaiheana neither killed nor injured any prisoner, neither did Hoopili or Kalanimoku. All the rest took prisoners and brought them to Oahu and even to Maui and Hawaii. A great deal of property was taken, among other things horses and cattle, which had become numerous on Kauai because the foreigners had given many such to Kaumuali'i. On Oahu there were only a few which had been brought in by John Young and Kamehameha from Kauai in 1809; afterwards more were brought in by Don

Marin. ... Some Kauai chiefs were with the chiefs on Maui attending the burial of their dead ruler, some fought loyally against the rebels; yet their lands were seized with the others. The last will of Kaumuali'i, who had the real title to the lands, was not respected. ... The lands were again divided. Soldiers who had been given lands but had returned to Oahu had their lands taken away, chiefs who had large lands were deprived of theirs, and the loafers and hangers-on (*pa'au'au'elo*) of Oahu and Maui obtained the rich lands of Kauai (Kamakau 1961:268-269 citing newspaper articles of April 11 and 18, 1868 from *Ka Nupepa Ku'oko'o*).

It is said that the many men, women and children were killed and left for the dogs or pigs to eat and were not allowed a burial. People from Oahu and the Island of Hawaii acquired Hanapepe land after this rebellion, and Kaubi mentions he acquired his land when Hanapepe was "colonized" after the war of 1824 (in Land Commission Award or LCA 9790). Several other claimants also mention getting their land after the war.

Francis Gay's manuscript (1873) has a section where he describes the "kama'ina" living in Hanapepe and he notes some who came originally from the Big Island. This section also provides additional confirmation that by 1873 cattle were being raised in various places in the valley

J. Kauai and Kamaku, his wife, and Wai'aloa her mother, ... they came from Kona, Hawaii. That is, Wai'aloa was born in Kona of Awahua (k) and Nukee (w) and came to Honolulu as a child and was raised by the chiefs and married Panniani (k) [Mahele Award 55] and came to Koula with their daughter, then married to J. Kauai of Hana, Maui. (This was copied from old note book) ... Panniani was given the tit of Koula which brought them to Kauai ... a tall good looking man called Pamaiaulu ... His wife, Wai'aloa, was with him, a tall good looking woman from Laaloa, Hawaii. She died not long after their return to Laaloa and he married again the widow of Makahiaa, Umi (w). (Gay 1873).

Early Descriptions of the Valley

An early description of Hanapepe was made by Rev. Bingham in 1847:

...[Hanapepe] lies six or seven miles east of Waimea. It is a pleasant, fertile, well watered valley, about 175 rods in width, along a mile or two from the sea-shore, diminishing in breadth and increasing in depth, as it recedes toward the mountains, till it becomes a very deep and narrow ravine, curving between precipitous and lofty cliffs, and grass-covered hills. A beautiful stream from the mountainous interior leaps down from high basaltic rocks, and forming a high cascade at the head of the valley, flows through it to the sea. Like the Waimea river and others at the islands, it is, at its mouth, obstructed by sand, by which the surf seems incessantly endeavoring to prevent its entrance into the ocean. Where it is thus retarded in its flow, it is from ten to twenty rods in width and three or four feet in depth, where we cross it in a canoe, or on horseback. It escapes by a narrow channel, where it cuts through a sand-bank.

For the first half mile from the sea, the valley seems sterile, and is little cultivated, but has a pleasant grove of coconut trees. The rest of the valley, more fertile and more cultivated, is sprinkled with trees and shrubs, embracing a few orange trees, and being walled up on the east and west by bold, precipitous bluffs, rising higher and higher toward the mountains, from fifty feet to fifteen hundred, appears from one of the palis, like an extensive, well-watered plantation, interspersed with *kafo* beds and one hundred and forty cottages, and furnishes employment and sustenance to some seven hundred inhabitants. The immense and irregular precipices shut in by each other toward the interior, obstruct the vision of the spectator looking up the valley, but beyond the pleasant opening towards the sea, the eye reaches the distant line where the ocean seems to meet the sky ... Near one of these palis, about a mile from the ocean, Mr. Ruggles chose his station and built a temporary cottage, had a house of worship erected, and opened a school, with the expectation of having a preacher from America stationed there permanently. ... His humble and now desolate cot, of the common stones of the valley, laid up in mud and stubble, and thatched with grass, ... was surrounded by a pleasant court in which grew bananas, grapevines, pine-apples, cotton and Palma Christi shrubs, lettuce, and a variety of other plants, useful and ornamental.

Here, for a time, under Kupileea and Kiaimoku, the two chieftains of Hanapepe, Mr. Ruggles, with his wife and two children, resided as the shepherd of the valley, esteemed by many of its seven hundred inhabitants and of the ten thousand of the island (Bingham 1847 IN Handy and Handy 1972:431 and Damon 1931:317-318).

Land Commission Awards (LCAs) 1848-1853

Land reform mid-nineteenth century was undertaken at the instigation of the Westerners in Kamehameha III's Kingdom. Previous to this land reform (The Māhele) all land belonged to the gods (*akua*) and was held in trust for them by the paramount chief and was supervised by subordinate chiefs. After the call for land reform the land was partitioned among the King and the *ali'i* (other chiefly persons) and this was called the Māhele awards, then among the Crown and the government, and finally among the people living on and cultivating the land. The latter partition was called the Kuleana Act and it allowed fee-simple ownership to those persons who could meet the requirements set up by the legislature. One of these requirements was that the individual would show prior use for cultivation or residence. All Kāua'i claimants for land on Kāua'i presented their claims in the year 1848. Supporting evidence to the claims is found in the Native and Foreign Testimony during the years 1850-1852. We know from travelers' accounts previous to the Māhele that the lower valley was extensively cultivated and cultivation also extended into the upper valleys. Māhele Awards to the *ali'i* for large portions of the valley were granted and there are 80 *kūleana* claims for Hanapēpē. There are two claims which appear to have no Native Register claims but have testimony saying they have been abandoned.

Of the 80 claims extending from the shore almost 3 mi. into the valley, the most *mauka kūleana* shown on the tax maps for the area is LCA 8035. This claim is for a mo'o of land to Alaiki in Koula (also shown on the 1873 Gay map up toward Hululu Falls). Francis Gay's memories of the *kama'āina* of Hanapēpē mentions Alaiki (Appendix B). The Boundary Commission survey map of 1873, which is updated for Tax Map Key 1-8-01 (Manuahi and Koula), which would show LCAs that were awarded shows only the Robinson family holding of more than 1,000 acres in Manuahi. However a claim was made there (LCA 9654) by Kauli and his heir, Koikoi. The Survey map (also TMK 1-8-01) shows what may be *kūleana* land holdings, but have no numbers.

Hanapēpē claimants list 131 *opana* (sections) in use of the 80 (82) claims made by 78 individuals (not including those grants to the King, Queen and Government holdings and part of the earlier Māhele distribution). Some half dozen LCAs do not state an *'i'i* location, and 11 claims of land are made by more than one individual where a person who has died since and his/her successor is listed in the foreign or native testimony for the same claim number (11 deaths are noted in the claims). Some claims are contested by the *kono'hiki*⁷, where he has taken an *opana* from a claimant, claiming *kono'hiki* rights for the orange trees growing there.

The great majority of Hanapēpē claims are made within the *'i'i* of Kāua'uakahi (which includes those of Kalapawai). Thus, 56 of the 131 *opana* or *'i'i* are located along the lower Hanapēpē river bank. There are 11 *opana* claimed in 'Eie'e, 10 for Kaawainui, 6 each for Koula and Kuhumu, 5 each for Kukuiolo, Kuloa, 4 each for Manuahi and Hanapēpē generally (unspecified location), 3 each for Ukula, Kamohio and Waikanono, 2 each for Kapewa, Kapouhana, Kahumone, Punaiau and Waiulli, and only 1 for Hanapēpēluna, Hikula, Kawaiki, Kumimi and Waikoko. There are three awards in the vicinity of the project area in the *'i'i* of Kumimi and Kamohio.

Because of the Kāua'i rebellion Hawaiians from other islands were awarded lands in Waimea District, and in Hanapēpē. Hanapēpē *ahupua'a* was part of Kamehameha III's private lands. Eight claimants mention receiving their land at the time of the rebellion.

Ali'i of the Kamehameha line received Hanapēpē lands at the time of the Māhele Awards in 1848: Queen Kapiolani received the *'i'i* of Kuloa. LCA 7712 awards to Mataio Kekuana'o a, Governor of Oahu and Kāua'i, the *'i'i* of 'Eie'e (1,071 +/- Acres). Kekuana'o was of the Kamehameha line, a descendant of Lono i Kamakahi, he married Pauahi and had a daughter, Ruth Keelikolani (McKinzie 1983:40). Later he married Kinau, daughter of Kamehameha I and at this time became Governor of O'ahu. He was also the father of Kamehameha IV and V and Victoria Kāmamahu (*op. cit.*:95). He had large land holdings on Hawai'i, O'ahu and Kāua'i. LCA 8559B is titled to William Lunaliilo, (King Lunaliilo, Kamehameha III) for the *'i'i* of Manuahi (867 Acres).

⁷ Under the Hawaiian land system a *kono'hiki* is the head person of an *ahupua'a* is in charge of regulating land matters for the island chief. This practice continued beyond the time of the Māhele and was the land agent for the land owner.

Those *kuleana*s which were claimed in the Hanapepe Valley after the Mahele were for the subsistence cultivation of individual families. They would have grown very little more than what was required to feed the families, since the political system had collapsed and there was no market for taro on Kauai. The aboriginal population, on the other hand, would have required not only enough taro-producing land to feed itself, but also enough to support the king and the *ai'i* (Pearson 1962:381).

The LCAs present testimony of cattle enclosures and sugar cane cultivation by 1848.

Well Site 3 Project Area Land Commission Claims

Two smaller *ahupua'a* units, *'i'i*, surround the project area. The *'i'i* names are Kumimi to the north and Kamohio to the south. In these two *'i'i* there are three Land Commission claims: Kipani (LCA 9265) in Kumimi, and Maka 'i'io (LCA 10271:1, :2, :3) and Alihi (LCA 8011) has a claim in Kamohio and an unawarded hog corral in Waikoko (Figure 5).

The land area of Kumimi was awarded to Kipani, who claimed one *kula* (named Opulala) and one *kihapai* (named Kaumaelieh) in one piece. Historic maps (Iao 1919, R.M. 2657) show many taro and/or rice patches in that area. However, in 1848, only the *kula* and *kihapai* were mentioned in the records. Also shown on the 1919 Iao map, in that area, is a major *'ouwai* (irrigation ditch) running through the parcel, as well as the plantation sugar siphon ditch crossing south of the parcel.

On the west side of the Hanapepe River is the land area of Kamohio, portions of which lie within lands awarded to Alihi and Maka 'i'io. According to testimony given for Alihi, there are three parts to his land claim, which consists of approximately 7 *lo'i*, a house lot, and a hog sty/corral at Kamohio. He has two other men who cultivate *kihapai* (gardens) under him, one of whom is Makai'io (see below), and Makai'io is the one who has the *'i'i*. Alihi's hog corral is in a more *makai* *'i'i* - Waikoko - outside the present project area. His Section 1 parcel is bounded on East by stream, west by pali, north and south by other *mo'o*. The present owner of the parcel on which LCA 8011 lies is a Mrs. May Makanui Hoopi'i Corr, who is one of the informants for this project area. LCA 8011 states Kamohio as the *'i'i* in which the property is located, however it is next door to Kumimi. The present-day property owned by Mrs. May Corr and Luisa Makaanui and shown on tax map 1-08-04 encompasses Land Commission Award 8011 as well as another parcel *mauka* of the siphon/ditch which is in the *'i'i* of Kumimi. Mrs. Corr stated that her property is in Kumimi. And as noted above, Mrs. Corr did not recognize the name of Alihi.

The Native Register document filed by Makn 'i'io says that he is living on the land of Kapouhana. He also has a *loko* (pond) there, 2 *mo'o*, a *lo'i*, and an *'i'i*. The *kula* and house lot are within the *pali*. The 1919 Iao map shows the same *'ouwai* that runs through the Kumimi claim runs through the Kamohio and Kapouhana claims, and again, the sugar siphon ditch runs to the north of Kamohio.

Máhele Award (M.A. 55) to Paniani (from the Big Island) is for ¼ of the *'i'i* of Koula. Two other such awards are listed: M.A. 19B to Kanehiwa for the *'i'i* of Kukulolo and M.A. 29 to Kanunu which is subsequently given in Grant 1151 for ¼ of the *'i'i* of Punalau. The majority of claimants profess to have occupied their places of residence or cultivation from 1839 or before (1839 - time of Kaikioewa). Fifteen claimants date their claims to the time when Kaumuáli'i was still alive (pre 1824).

The claims mention 528 *lo'i* or taro plots (including the 200 claimed by Opae (10458), 29 *kula* (where dryland crops like sweet potatoes were raised). There are 46 *páhaale* or house lots. Many of them noted as in villages, 10 *mo'o* (crops unspecified), 10 are pastures or *mo'o* specified as pastures, and 16 others which are described as including gardens, pastures, *loko* (fish ponds), a pig sty and salt lands at Ukula. Therefore, of the 629 uses claimed, 84% are for taro *lo'i*, 5% *kula*, 7% house lots, 1.5% *mo'o*, and almost 2.5% for other uses. This, of course, does not detail the amount of land involved in the *lo'i*, but from early descriptions and archaeological sightings *lo'i* were along all the major streams.

In March 1818, about 150 natives were garrisoned at the fort [at Waimea] (Corney 1896:88-89). For their subsistence, these government soldiers were allowed use of cultivatable lands nearby - these were the fort lands. One of these soldiers, Commander Pa'ele, claimed lands in Waimea, Makaweli and Hanapepe.

Though there were only sixteen soldiers at the fort, including Pa'ele, at the time of the Máhele (1848-1852), the previous taking of lands at Kaho'omano may have been the impetus for establishing fort lands elsewhere (Hammatt and Ida 1993). Pa'ele describes 1 claim in Waimea, 3 in Makaweli and 1 in Hanapepe (shows up on Hanapepe maps as 3 pieces).

Rev. George B. Rowell, a missionary, is the only apparent *haole* to receive a Land Commission Award in Hanapepe (1314.71 Acs). He is also listed as the scribe for many of the LCA Kona District claims. Frances Frazier noted Mr. Rowell's "solicitude for the Hawaiian claimants of land, in order that their claims might be approved by the land commission" in contrast to several cases where "Governor Kanoa destroyed claims that were on dirty paper or not properly written" (Frazier 1979:10). The Boundary Commission reports and survey maps note his place near the border of Wahiawa in an area called Hanapepéluna. Another missionary named in the historical literature as living in Hanapepe in 1822 was Samuel Ruggles, who had a stone house built for him with a cellar. This house was completely ransacked during the rebellion. However, Ruggles had been transferred to Hilo before the 1824 rebellion (Joesting, 1984:109). This property was not located during the present research. Another possible *haole* listed in the index of the *kuleana* awards and for which a Royal Patent was awarded was to Hannah Sigalas, as noted earlier, there are no documents attached to the award.

In addition to a Protestant missionary, Hanapepe LCAs list a Catholic teacher (presumably a Hawaiian) named Hii claiming land. The Native Testimony recounts that Hii came by his lands through marriage and through his mother (N.T. 10332 70-71v11). It is only a half century later that a Catholic church is shown in the *'i'i* of 'Ele'ele (Harvey

Makailio (10271)'s witness in the Native and Foreign Testimony state that Makailio's first two sections are in the 'ili of Kamohio. The first section - a mo'o - is bounded by another mo'o to the north, the Hanapēpē river to the east, a rocky place (Keanaa) to the south and Hanapēpē poi to the east. Section 2 - a lo'i - is bounded north by poalima lo'i (patch worked for the benefit of the konohiki), east by the river, south by another mo'o, and west by Hanapēpē poi. Section 3 - a mo'o in Kapuhana 'ili and Section 4 - the 'ili of Moonui are to the south and outside our project area. The witnesses in the Native and Foreign Testimony documents state that the house and kula are in Section 4. The statement that Makailio has the 'ili probably means that he is the konohiki of that 'ili.

Based on the LCA data, the portion of Hanapēpē Valley in which the project area lies, at the time of the Māhele was the location of numerous lo'i, at least one associated house lot (perhaps more), and garden type area of (22 *kūkūa* - embankments between taro patches; Fukui and Elbert).

Later 19th Century

In 1849, William D. Alexander, head of the Hawaiian government survey between 1850 and 1869, toured Kaunā'i and in his journal he describes his journey to see Hanapēpē Falls:

entry for May 23.

This morning about ten o'clock we started in company with Dr. Smith's family for Hanapepe. We arrived at noon at the Mission house on this side of the valley. After getting a hasty dinner we set off with Dr. Smith to see the well known Hanapepe falls. We rode about a mile along the edge of the valley, & then descending a high & steep pali we rode as far up the valley as was practicable for horses. We then hitched our horses, & went on foot. We had to cross the stream 8 times on our way to the falls. The scenery was grand, & beautiful. The sides of the valley were from 300 to 1000 feet high, now rising into abrupt precipices, & now clothed with the richest green. In crossing the stream in one place, I slipped off a rock into deep water, & got a complete ducking. As however I kept warm by exercise, it did me no injury. The scenery in the upper part of the valley is enlivened by many beautiful little cascades, dashing & foaming down its sides. The principal waterfall is at the head of the valley, 4 or 5 miles from the sea. It was concealed by the turn of the valley till we were very near, when it suddenly burst on our view. The stream pours in a jet for 20 feet, when it strikes the rocks, & spreads out like a fan the rest of its descent. The whole fall is about 200 feet in height. We got back to the house about 5 o'clock, & determined to pass the night there. I passed a comfortable night except that I was terribly stung by fleas (Kaunai Bicen. Comm. 1978:133).

Hanapēpē Falls also attracted a William T. Brigham, Bishop Museum's founding director and a botanist visiting Kaunā'i in 1864 and 1865. He wrote in his journal:

... Tuesday morning I set out for Hanapepe Falls. The path led down the side of the valley over ridges of deep red earth with blocks of imbedded basalt. The walls of the valley were nearly perpendicular, and from four to five hundred feet high, exhibiting in many places an irregular prismatic structure. In one place this was very beautiful where a projecting point had been naturally terraced, the portions between each flow being covered with grass and convolvulus vines which formed a drapery over the cold dark lava. In some places a prismatic vein had been broken through by an irregular mass of clayey lava running across the direction of the valley.

The stream was very rocky and as the valley was very narrow and the wall almost perpendicular, the path went from one side to the other and thus crossed the stream eighteen times. Ohias and bananas were abundant; several dykes crossed the walls at various angles, little canyons on either side opened into the gorge showing beautiful cascades at their upper end in almost every variety of form. The Falls as I measured them, were 326 feet high, and I should judge the walls on either side were at least five hundred. The water was not a large stream but fell against the rocks in such a way as to have a very beautiful effect. A branch joined the river just below the Falls, and near by were some fine orange trees. A mist came down in the afternoon. Lobelias were abundant on the hillside; ducks and herons were plentiful, and the latter had carried many seashells onto the rocks to eat; small fish were in the stream which no doubt were food for these birds (Lydegate 1991:149)

In early correspondence Abner Paki, father of Queen Liliu okalani, states in a letter to the Minister of Interior that Hanapēpē belongs to the King and that the *akule* (Big-eyed sea fish - *Thaichirops crumenophthalmus*) is the tāboo fish (letter of April 20, 1852). According to Titcomb this fish is eaten raw, broiled, or cooked in a ti-leaf bundle placed over the taro in the imu, is good for poi which she says is used in a relish; and is also a favorite fish for drying (Titcomb 1972:62). In discussing fishing taboos, Mary Kawena Pukui noted that "Summer was the time when fish were most abundant and therefore the permitted time for inshore fishing. Sait was gathered at this time, also, and large quantities of fish were dried" (Titcomb 1972:14) and she elaborates saying that when the *kahuna* had decided conditions were favorable for fishing "For several days it remained the right of the chief to have all the sea foods that were gathered, according to his orders, reserved for his use, and that of his household and retinue. After this, a lesser number of days were the privilege of the *konohiki*. Following this period the area was declared open (*noo*) to the use of all" (Titcomb 1972:14).

In the book *Sandwich Island Notes (by a Haole)*, early traveler George Bates spent 1853 visiting various islands and wrote his book which "purports to give an account of what the author saw and heard" (Kuykendall 1938, vol 1:419). In his book Bates describes "Hanapēpē Valley was dotted with numerous plantations of taro, small cocoa-nut groves and native dwellings" (1854:4,224 IN Coulter 1971:15).

By 1864, in a letter from Valdemer Knudsen, an early Norwegian settler in Waimea,

marries Valdemer Knudsen, living across the channel at Wainā and Eliza Sinclair "wanting to provide an inheritance for her two older daughters and their children" bought the *ahupua'a* of Makaweli in 1865 from Victoria Kamamalu for \$10,000. Makaweli had become the property of the Kamehamehas at the time of the 1824 Kāua'i revolt. At the time of the Māhele it was the property of Victoria Kamamalu. After they buy Makaweli, the Sinclair clan bought the adjoining district of Hanapēpē (Joesting 1983:190-199) and by 1873 had the entire Kōna district in their possession and they still own much of the same land today. "In 1873 the young men were beginning to raise cattle." This remarkable clan was known for its love of literature, botany, art, music, exploring and recording information about the Hawaiian islands so it comes as no surprise that the early preservation of place names, stories about places and *kama'āina* was done by one family member, Francis (François) Gay.

Gay describes the uplands of Hanapēpē and Makaweli (in 1873):

"The road to Puulehua came up to Kuapoo through Kaluasalea Valleys, to Halulu and Keolomea and up to Olonawehi Ridge. Other road was on the other side of Manuahi Valley, up Kawaiipuna to Kuahua (junction of Kepani and Manuahi Ridges) to Makaopihī and to Puulehua, to the three bird lands of Makaweli, Manuahi and Koula. Kamakaoipihī or Kealaokaoipihī was on the west side of Makalaha. At mauka end of ridge notches were cut in the soil of the cliff, making steps down to the saddle of ssid ridge. Mauka of this was a water filled hollow where people camped in going to Puulehua by way of Nakalaha (Gay 1873: End of section on Kuapoo Ridge [p.28]).

Other Information about Early Hanapēpē

Wendell Clark Bennett's survey of Kāua'i in 1928-29 found evidence of habitation in the upper canyon area and its side valleys including house sites, caves, terraces, burials, an *'ūlu maika* court and *'auwai* (1931: 108-110).

Francis Gay mentions Kapuhīhi Cave. In James Gay's survey of 'Ele'ele, he mentions that there is a cave at the SE boundary between Hanapēpē and Wahiawa. Robert L. Spear locates a cave in his archaeological study (1992) up in the valley but the map shown in his work does not seem far enough into the *ahupua'a* to be in the 'iti of Kō'ula where Francis Gay's Paoahaku caves are, nor Poakua cave which Gay describes as on a ridge looking into Manuahi Valley.

James Gay, the boundary surveyor also mentions a cave named Nihowana, near the boundary of Keawe's *kuleana* and a cave called Heana near the north corner of Kulioa.

Francis Gay mentions several trails going *mauka* into the mountains and a government road is mentioned in several LCAs and shown on early maps. This government road is seen on early maps in its customary location near the shore. Before the 20th century the Hanapēpē River had to be forded to go between Waimea and the east. But by 1919 several Hanapēpē river bridges are apparent on maps (See Joseph Iao map), including the railway bridge. Trails into the mountains, to Halulu and Hanapēpē Falls are also present on the early maps.

Kāua'i, to J.O. Dominis, Prime Minister for King Kamehameha III, Knudsen requests the right to raise the rents on Hanapēpē leased lands "since the King owns little *kalo* or rice land in Waimea, but a lot in Hanapēpē, and there is not one idle patch in Waimea, but only a few are planted at Hanapēpē" and he mentions that "the people there hula from morning to night" (Archive Correspondence Hanapēpē Nov. 1, 1864). In 1865 Knudsen is appointed *keohiki* of Hanapēpē *ahupua'a* and a year later he leases Hanapēpē from the King for \$500 a year for 25 years (Archive Letter July 9, 1866). Knudsen's complaint not only emphasizes that a substantial amount of *kalo* and rice land existed in Hanapēpē, but also indicates that the practice of *hula* was being seriously pursued, and by some sizeable number of persons, despite missionary efforts to discourage it. Carol Ramelb in her small pamphlet on the *hula* records that for Hawaiian people "Before a written language, the *hulas* and the chants accompanying them were their history and poetry" (1976:3). She also notes that after the coming of Christianity "In distant villages, some continued to dance behind closed doors" (Ramelb 1976:5). She adds that the *hula* was not officially revived until the 1870's during King Kalākaua's reign. Another impetus she notes for its practice, besides the traditional religious commitment, was for the entertainment of the sailors of the whaling and trading ships. The roadstead of Waimea, as a nearby center of shipping interests may have helped keep the traditions alive at Hanapēpē or there may also have been there some very strong Hawaiian traditionalists, or both. After King Kalākaua, *hula* became "seen as the lone surviving art of an ancient people" (*op. cit.*:6). The people of Hanapēpē helped to keep the art alive.

Eric Knudsen, son of Valdemer Knudsen, mentions passing by Hanapēpē on his first trip around the Island of Kāua'i in 1895.

We rode through the Makaweli Plantation and soon entered the beautiful valley of Hanapepe and the town of the same name--in those days it was only a small village (Knudsen 1991:150).

Sinclair-Robinson-Gay-Knudsen Clan Records
Joesting (1983) dates Eliza Sinclair's purchase of Makaweli to 1824 and notes that the purchase of Hanapēpē came soon after.

Because the Sinclair-Robinson-Gay-Knudsen clan in early historic times owned most of the district of Waimea and began ranching and sugar cane plantations throughout the area a brief family history here describes their ties.

Settlers in New Zealand, the Sinclair family was comprised of Captain Francis Sinclair, his wife, Eliza, oldest daughter Jean and her husband Captain Thomas Gay (previously a widower with a 5-year old son) and their four children, a second daughter Helen (married but separated from Charles B. Robinson) and her son Aubrey, and their youngest daughter Annie, and two other sons Francis and James Sinclair. The family originally came from Scotland via New Zealand. Captain Sinclair and the eldest son were lost at sea sometime while the family was living in New Zealand. Mrs. Eliza Sinclair and all the rest of the family decide to immigrate to British Columbia but then move on to Hawaii in 1863. They buy the island of Ni'ihau for \$10,000. The youngest daughter, Annie,

Handy explains that the inhabitants of the far inland areas are called *kua'zina* or "backlanders." He theorizes they had little or infrequent contact with the coastal area and its resources (Handy, 1940:397-398). If the Kawelo/Aikanaka legend holds any truths, people in the upland did occasionally come down to the shore to swim, surf and fish.

Birds and Feathers

During Cook's Third Voyage visit to Waimea Kaua'i (January 1778) besides inspecting a large *heiau* in Waimea, he describes a feather cape and helmet he received and took to England and they are today in the British Museum in "as good a state of preservation as the day they were obtained" (Cook 1993:350). Feathers were collected in the uplands of Waimea, Makaweli and Hanapepe (Gay 1875).

Amongst the articles which they brought to barter this day, we could not help taking notice of a particular sort of cloak and cap. The first are nearly of the size and shape of the short cloaks worn by the women in England. The ground of them is a network, upon which the most beautiful red and yellow feathers are so closely fixed, that the surface might be compared to the thickest and richest velvet, which they resemble, both as to the feel and the glossy appearance.

The cap is made almost exactly like a helmet, with the middle part or crest sometimes of a hand's breadth, and it sits very close upon the head, having notches to admit the ears. It is a frame of twigs and osiers covered with a network, into which are wrought feathers in the same manner as upon the cloaks, though rather closer and less diversified. These probably complete the dress with the cloaks, for the natives sometimes appeared in both together (Cook 1993:350).

While the origin of the feathers of this cape and cap is not known, it is not inconceivable that some may have come from Hanapepe. This upland region of the birdcatchers is described by Francis Gay:

Puu-lehua [Lehua hill] -- A peak at head of this ridge is the highest part of Waialeale, 4775 feet. Junction of all ridges from Olokele to Kahili range Koloa, Puukui is peak makai of Puulehua. This peak, Puulehua divides the land where birds are found at Olokele, Manuahi, Puulehua. Puulehua is the upper end of Manuahi. It is on the upper end of the ili of Manuahi. Above this, Olokele and Koula join to the top of Kawaikini which is the face of cliff of Kawaikini, facing Koula (Gay 1875: end of first section).

Two other entries by Gay for Hanapepe also describe bird-related activities:

1. Kapohakukilomanu [(Ka-pohaku-kilo-manu) Stone from which to watch the birds] -- Valley and stone at Puhi, a branch of Manuahi Valley.
2. Kilo-manu [Watch for birds] -- A stone look out for birds. Top of ascent on Manawai ridge. Puhi is the mauka part of Manawai ridge to Puuonahau [Koula].

The most touchingly lyric mention of birds can be found in a Land Commission Award for the area at the confluence of Koula, Manuahi and Hanapepe rivers at the time of the Mahele. This land claim is by far the most beautiful expression of a land holding in the entire 14,500 claims.

The description of the house lot is: the land is Kapewa, with the breadfruit before your eyes, and the bunches of bananas hanging in the doorway of the house, and the milo tree; on the east is the hill of Holoimui, on the west is a noni grove, a rocky section is on the north; a heaped up row of palis is on the west of me. The trees/ bearing the ripened fruit eaten by the O'u bird, the lo is where lives the landshell, chirping in the dawn, the split /fruits of the white flowered ohia, food for the O'o bird, are on the south (Nakapa LCA 10349).

The Kauai O'o (*Moho braccatus*), formerly thought to be extinct, was found in the depths of the Alakai Swamp in 1968. The birds were found in undisturbed ohia forests between 3,750 and 4,250 feet elevation, and more often were seen or heard in high canyons than on forested ridges. There may be no more than a dozen surviving Kauai O'o (Berger 1972:106-107). The O'u (*Psittirostra psittacea*) is the most common bird in the Alakai Swamp region of Kauai but the birds are found only in the ohia rain forest at elevations between 3,500 and 4,250 feet. The birds frequently perch in the tops of dead ohia trees and in the uppermost clusters of leaves in lapaalapa trees" (Berger 1972:119). It feeds on many fruits, native and introduced.

In some localities the bird pays great attention to the red flowers of the Ohia, and I have repeatedly noticed, both on Lanai and Kauai, that it visits these one after another on the tops of the tallest trees, thrusting its head among the numerous stamens . . . the O'u may not yet have entirely lost the nectar-eating habit. . . . The O'u feeds its young very largely with caterpillars, especially those of Geometridae, and at times, when frequenting the forests of lofty Koa trees, itself partakes of hardly any other food. It generally seeks these in the bushy tops of the very tallest trees and is not always by any means easy to get sight of. . . (Berger 1972:120).

The call of the O'o is described as "typically loud, mellow whistles," the most common of which was transcribed as *whip-poor-weee* (op. cit.: 106) while for the O'u "Three or four very distinct and penetrating whistled notes form the beginning of its full song, and are highly characteristic. It sings very freely in the early morning hours, especially just before nesting season, and when singing delights to perch on the loftiest dead branch that it can find (Berger 1972: 120).

The lapaalapa (*Cheirodendron*) is also known elsewhere by the name *ehu* and *kouila*. The name *lapaalapa* is presumably an onomatopoeia for the sound made by the leaves as they flutter in the wind" (Hochreutiner in Wagner et al. 1990:225, 227).

Three birds were noted on the project area on the May 19th site visit. All were imported birds, the mockingbird, chickens, and a medium-sized rusty-brown bird, possibly the Kua'i Chinese Thrush. There are probably many other birds present that were not seen.

Snails

The Bishop Museum has a collection of nearly 5,500 specimens of land snails belonging to the genus *Carelia*, and most of these specimens come from the Island of Kauai. Many of these specimens were collected by the Knudsen, Sinclairs and Baldwins, among others. The C. Montague Cooke study details the species, localities and differences among the genus, and in several cases (as for the *Carelia knudseni*), Hanapēpē is mentioned.

From its [*Carelia knudseni*] resemblance to *C. glossema* [another land snail] it [this shell] was undoubtedly taken from some locality between the Waimea and Hanapepe drainage basins, a region which has, except for Makaweli and Olokele, received little or no attention from collectors (Cooke 1931:82).

Inland from the project area where the two upper valleys meet the lower Hanapēpē valley, Nakapa describes, in LCA 10349, "the lo is where lives the landshell, chirping in the dawn." For a long time it was a commonly held belief that the snails actually made a chirping noise and Kamehameha's III's summer home on O'ahu was called "Kaniakapupu" for the singing snails, but it turns out that the "swordtail cricket which shares the snail's habitat actually provides the tunes (Foster 1993:34).

Rice and Sugar Cane

The 1919 Iao Map shows rice and taro lands, but does not distinguish which are rice and which are taro. Informant, Mrs. May Corr in her interview, said that she was born in the valley, and lived there as a young married woman until after the birth of her third child. She said her family, Hawaiian farmers, grew taro, rice and cane on their lands in Kumimi (or Kamohio). Although we do not have documentation for rice between 1864 and 1919 we do know that sometime after 1918 Mrs. May Corr's family cultivated rice in the vicinity of the project area. We know from a Valdemer Knudsen letter (Hawaii State Archives, Hanapēpē correspondence) that the King owned a lot of rice and taro land in Hanapēpē in 1864, but only a few are planted at that time.

The advent of commercial sugar cane under the auspices of Hawaiian Sugar Company in the Hanapēpē Area and it dramatically changed the settlement pattern landscape. The Hanapēpē Ditch was begun in the same year as the incorporation of the sugar company, in 1889, and completed in 1891. The longest siphon 1923 feet crosses the project area. The system was able to irrigate 3000 acres of cane (Wilcox 1996:87-88). The stream flood plain areas that were once terraced for taro lo'i were modified for sugar cultivation, where it was practical. Additionally, former 'auwai were modified for sugar irrigation purposes. Hanapēpē stream and associated tributaries were modified for major water resource(s) projects (e.g. dams, water ditches, siphons, etc.).

Subsequent to the demise of commercial sugar cane diversified agricultural pursuits have utilized the abandoned cane fields. The extent of land modifications by sugar and other modern activities specific to the project area are discussed in the findings and conclusions sections of this report.

Hula and Chanting

Hula, as noted above, has been practiced in Hanapēpē from early times, continued even when it was prohibited. A troupe from Hanapēpē was one of the 2001 winners in the Merrie Monarch Festival. Piheleo, a chanter of a Hanapēpē family, is associated with early historic dancers, Keahi and 'Iolani Luahine. His chanting was also known to have special powers. Piheleo was called upon to chant a special *mele* to allow the famed stone or *po'ohu*, Kauai Iki, to be moved from one place in Wahiawa to another. There is a saying to the effect that "you had not traveled around Kauai until you walked around this Kauai-Iki. Once Piheleo completed his rituals the stone was easily moved (Pukui 1936:4). Today, it resides in the Stone Garden at Kuku'iolono Park.

IV. SUMMARY AND RECOMMENDATIONS

Summary

Hanapepe history is rich and exciting. Because of its location, just slightly away from the ruling centers of power and scrutiny of those in power, cultural traditions have continued, perhaps, unbroken, for many centuries. Kumimi and Kamohio 'i'i, land divisions that contain the location of the water facilities repair project have their own set of traditional cultural practices associated with them. At the time of the Mahele, the area was used as taro patches and *kuakua*, small garden patches, perhaps on the banks of the taro patches and the family names attached to the area were Kipani, Makaliio and Ahihi. None of the informants interviewed were familiar with those names.

Kumimi, one of the 'i'i areas encompassing the project area, is the name of a crab, used in sorcery or medicine (Gay 1873, Pukui and Elbert 1986, Titcomb 1979, and Tabrah 1967), and its use may have been as a heart stimulant (Tabrah 1967). How the area came to have its name, is of course, unknown. But one may hypothesize that some event occurred related to Kumimi, gave its name to the area.

The Makanui (Mrs. May Makanui Hoopii Corr comm.) family lived there shortly after the turn of the century or, perhaps before. They were a Hawaiian planter family. Mrs. May Corr had always been told that the 'i'i was "one of the "sacred places." She said lots of offerings were made in that area, especially near the deep pool in the river. She noted that, associated with planting taro, her father would always make the traditional first offering of harvests at the deep pool.

Mrs. May Corr's mom had 16 children and 2 husbands and her dad had 7 or 9 children. She was the 13th child and is the last one alive of the children as her younger brother died last year. The whole family would work in the taro patches most of the time.

Poi was made at home by the Makanui family and everyone had their own poi pounder. However, at some point her father brought home a meat grinder and after that the poi was first ground and then pounded, making it much faster and easier to get smooth. To supplement their basic poi diet, they fished for mullet and had easy access to river shrimp and *o'opu* (goby fish). They would build a barricade in the river - cut little and big sticks and make a trap and catch lots of *o'opu*. These they put on strings in a rice bag and would steam them on top of the taro and then eat them all together.

The Makanui family used traditional medicine from plants. The Makanui are related to the Moke family, a family of powerful men and women *kahunas*. What remedies a family would know and use were supplemented in special cases where one of these more powerful *kahunas* in the kinship group would be consulted. Plants were used to cure and to drive out evil spirits in a sick person.

The entire canyon type valley is subject to constant erosional forces. Landslides are common, as in the present project area. Ms. Wilma Holi pointed out numerous burial caves on both sides of the valley walls, that had been revealed after landslides, but noted, like

Dr. William Kikuchi that the caves had been looted and they were now empty (Kikuchi comm. 1963). Burials are also possible where there are old house sites or their remains.

Recommendations

Based on findings from the traditional cultural practices assessment, no further archaeological research or work appears warranted. The recommendation is contingent upon all proposed work staying within the perimeters of the already disturbed and modified project area.

Ms. Holi noted that in the event any human remains were encountered during the repairs, all work should be halted and the inadvertent discovery immediately reported to the State Historic Preservation Office (Ms. Nancy McMahon 742-7033). Once the report has been made, the State Historic Preservation Division will follow Chapter 13-300 Hawai'i Administrative Rules regarding practice and procedure relating to burial sites and human remains.

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APPENDIX A: Named Places in the *Ahupua'a* of Hanapepe

The translation in brackets after the word are from Francis Gay's list of Place Names for Western Kauai. Where Gay has listed his places with West and East before place names, here they are reversed so the Hawaiian word comes first.

Aaka [Bad-tempered]
 —The rocky point above Kaluaiki.(Gay);
 "Dead trees or old trunks [of naio] are called *Aaka*" by the natives (Rock 1913:429)
Aalii-nui [Big-saili-tree]
 —Stream and flat above Kawaiinui.
Aalii-nui makai of Kapilou a stream and the flat above falls.(Gay); (*Dodonaea viscosa* L.). The wood of the *oaii* is of golden-brown color, with black heartwood, and is extremely hard. "Undoubtedly the wood was employed by the natives for various purposes but no information can be obtained from this generation. The leaves were used as medicine (Rock 1913:279)

Aalololo, East [(Aa-lololo) Turned over in sleep]
 —Valley makai of O-iki [Koula].(Gay)

Aawela [(Aa-wela) Burning root]
 —Peak at head of ridge from Manuahi up to Konkahi's fence.(Gay); peak on boundary between Hanapepe and Makaweli (U.S.G.S. 1983).

Ahuacikuu [(Ahu-eli-ku) Dug up mound]
 —Peak at boundary of Hanapepe.(Gay); boundary between Makaweli and Hanapepe (USGS 1983).

Akau
 —mo'o name in Koula 'ili (LCA 8035), literally right or north (Pukui & Elbert).

Akia 'ili
 —'ili name (LCA 8011), name of an endemic shrub (*Wikstroemia* spp.), the bark

yields a fiber; the bark, roots, and leaves a narcotic used for fish poisoning and according to Kepelino, used in 'ana'ana sorcery (Pukui & Elbert). The *akia*, though harmless to the touch, is extremely poisonous if eaten. Its root and bark were used with certain parts of several other plants as an ingredient for a deadly drink that was designed for suicide, or for the execution of criminals by the order of a chief (Degener 1975).

Akosi/Akama'i
 —mo'o name in Waikanono 'ili (LCA 7920)
Aialua or Walalua
 —koele lo'i name in Kaawaekahi 'ili (LCA 8283), possibly *wala + lua* meaning a *lua* fighting flip? (see Pukui & Elbert).

Alokapapa
 —house lot name in Kaawaekahi 'ili (LCA 9189). Perhaps related to *kāpapa-ua*, to stand facing the wind, as a house exposed to the wind (see Pukui & Elbert)

Amaama, West [Mullet]
 —Land mauka of Ifaana [Manuahi].(Gay); ridge name in Manuahi (Boundary Commission 1873).

Anakua Point
 —South east boundary at sea (U.S.G.S. 1983).

Auhaula
 —mo'o name in Kaawaekahi 'ili (LCA 9189); perhaps day of tribute (see Pukui & Elbert)

Auwa or Kualuauwa [(Kualu-auwa) Sagging chin]
 —Lower part of Mokae Valley, above falls Mololae [Koula].(Gay)

Baldwin Monument
 —monument erected by Japanese workers in Makaweli to honor Mr. Benjamin Douglas Baldwin (Anon. 1974, *Archaeology on Kaua'i*).

Black Pool or Deep Pool
 —swimming hole in Kumimi 'ili (Informant W. Holi)

Ehu
 —mo'o name in Koula 'ili (LCA 10457); possible meaning as variant name for *'ōpapa* (Cheirodendron trees) or among many other meanings 'ehu, for mist or spray (Pukui & Elbert).

Eleele 'ili (Lit. black, Pukui & Elbert)
 —'ili name in Land Commission claims, name of pali in Eleele 'ili (LCA 3284).

Hakauju awa
 —cliff between Kaawanui and Waiulii. (Gay), kula name in Kukuiolelo 'ili (LCA 10010), Pukui & Elbert give Haka'ula a Kāne as a poetic name for a rainbow; perhaps in this case a rainbow seen under the influence of 'awa?.

Hakukala
 —kula name and pali name in Waikanono 'ili (LCA 7321B); perhaps *hoku* master and *kala* sorcerer, as in the prayer to free from evil influence (see Pukui & Elbert)

Halaawiki/Kalaawiki
 —house lot name, Kaawaekahi 'ili (LCA 7993).

Halelauoho, West [(Hale-lauoho) Hair house]
 —Land. (Hale and lauoho, hair) [Koula].(Gay); Hale-lau, house thatched with leaves rather than with *pili* grass; same as Hale lama, taboo house for training *kouka kākāim* and *oho*, hair of head or leaves of plants (see Pukui & Elbert)

Haliilauoa
 —mo'o name in Punalau 'ili (Land claim 9185).

Hahulu [a sound like thunder]
 —Hahulu falls of Palimo takes all of the water of Hauhili and Koalomea branches. Olanawei ridge runs off to Puulehua [Koula].(Gay)

Hahulu, East [Rumble]
 —Old gate opposite Kaleimanuia cliff [Koula].(Gay)

Hana'ilawa
 —kula name in Kaawaekahi of Ukula (LCA 6377).

Hanana [(Hana-(a)-na) Deed]
 —Old pen and valley at cliff [Manuahi].(Gay)

Hanapai
 —house lot name in Kaawaekahi 'ili (LCA 10595).

Hanapepe [(Hanapēpē)]
 —Ahupua'a name. Lit. crushed bay (due to landslides (Pukui, Elbert & Mookini)

Hanapepe Bay
 —name of bay at mouth of Hanapepe River (USGS 1983).

Hanapepe Heights
 —residential area on west side of Hanapepe (USGS 1983).

Named Places, page B

Hanapepe pali
—pali name (LCA 10271).

Hanapepe stream/river
—river name in Hanapepe land claims, main river of the ahupua'a of Hanapepe.

Hauhili [Entangled]
—Valley, east branch of Palieo above Palieo [Koula].(Gay)

Helekalaula (Gay)
—place name in Kūhumu from old-timers held - priest's helper

Heleikalaula
—kula name in Elele (LCAs 3284 & 9189).

Hillewa/Hillewa
—mo'o name in Kaawanui (LCA 5447 & claim 5468).

Hikaula, West [Select and tte]
—Land [Manuahii].(Gay)

Hikiula
—ili name (LCA 7920), gulch on western side of Hanapepe (U.S.G.S. 1983). Perhaps it should be Hikaula (see above).

Hillele [Small water fall]
—Valley mauka of Pohakani [Manuahii].(Gay)

Hiloa, East (Hii-foa) Long water fall]
—Orange tree also. Road is on Kapukaaki Peak [Koula].(Gay)

Holelnui [(Holei-nui) Big holei tree]
—Peak. See Kahonu and Kahoinakala, 2 stones at mouth of Manuahii.(Gay) (claim 8255); The Holei (Ochrosia sandwicensis) is endemic. The natives new how to extract a yellow dye from the bark and roots, wherewith to stain their tapa (Rock 1913:414)

Kaalaa, East [(Kaa-laa) Rolling log]
—Land and pool above Kahekepoo, mauka [Koula].(Gay)

Kaalakalae
—mo'o name in Kaawanui 'ili (LCA 5447).

Kaalillo
—mo'o name in Kaaauwaekahi 'ili (LCA 9189).

Kaana [Apportion]
—A large stone on ridge between Pohaka Kilomani and Kawaiupua Valley.(Gay)

Kaape, West [(Ka-ape) The ape plant]
—Land and valley mauka of land across and opposite from Kalae'hiku [Manuahii].(Gay)

Kaaauwaekahi/Kaaauwaikahi
—'auwai name in Kūhumu 'ili (LCA 3284)

Kaaauwaeluna
—ili name in land commission claims (LCA 9190).

Kaawa-iki, West
—on west side of valley opposite Kaawanui and Punalau.(Gay), 'ili name (LCA 10349).

Kaawanui, East [(Ka-awa-nui) The-big-awa-plant]
—Land below cliff from Hakaalawa to Punalau. ...from Punalau nui to Naoakala's place. (Gay); Kaawanui 'ili (Land Commission claim); 'auwai name (LCA 5447)

Kaawewe
—Waterfall from Wahiawa rivulet (LCA 387)

Kae pali
—pali name in Manuahii 'ili (LCA 9654).

Named Places, page 4

Kahaawe [(Ka-haawe) Pack on back]
—Round peak and land at junction of Palianu and Manawai branches, Koolau [Koula].(Gay)

Kahaha, East [Astonished]
—Mauka part of Kano adjoining Koula.(Gay); place on boundary of Koula (Boundary Commission 1873)

Kahaiki [(Ka-haiki) The narrows]
—Is the upper end of Palieo, branches from Kawaihatana as far as one can go on foot, where one has to swim to get to falls. Natives went to get duck when moulting [Koula].(Gay)

Kahala, East [(Ka-hala) The hala]
—Land [Koula].(Gay)

Kahalau, East [(Kaha-lau) Leafy place]
—Ridge runs up to Maloku. Small heiau at top Kehalau land [Manuahii].(Gay)

Kahalekukaepuaa, East [(Ka-hale-kukaepuaa) House of hog excrement]
—A kind of grass, or Wailewa. Land opposite Poalepo [Koula].(Gay)

Kahana
—mo'o name in Kamohio 'ili (LCAs 8011 & 10271).

Kahelhei or Kahilhei
—mo'o name in Elele 'ili (LCAs 7925 and 8198).

Kahekapoo, East [(Kahe-ka-poo) Flowing from the summit]
—Falls and valley mauka of Papanui [Koula].(Gay). Stream (Land claim 8255)

Kahelhele or Koholalele
—mo'o name in Kaaauwaekahi 'ili (LCA 7993).

- Kahetekalaula**
—kula name in Kaauwaekahi 'ili, 5 fishponds there, one called Namoe-moe (LCA 10657). Gay cites an old resident Holoholoku, he and his old wife remember Helekaula before planted with rice.
- Kahel or Kahelhel**
—mo'o name in Eleele 'ili (LCAs 7925 and 8198).
- Kahinahina [(Ka-hinahina) The hinahina plant]**
—Valley makai of Kaape. See Mamala [Manuahii].(Gay)
- Kaholo, West [(Ka-holo) Running along]**
—Land and Valley mauka of land opposite and mauka of Pohakani [Manuahii].(Gay)
- Kaholoa, East [(Ka-holo-a) Burning Kaholo]**
—Opposite and mauka of Kaholo [Manuahii].(Gay)
- Kahonu**
—moo name in Eleele (LCA 3284)
- Kahuamoa [(Ka-hua-moa) Hen's egg]**
—On same ridge [as Kaana; Manuahii].(Gay)
- Kahunui**
—mo'o name in Eleele (LCAs 3284 & 9185)
- Kahulala**
—mo'o name in Kaauwaekahi 'ili (LCA 8020).
- Kahumu [To cook in imu]**
—Land in Hanapepe Valley and ridge above it and runs up to above Ahuaelik. (Gay). 'ili name, pali name in Kahumu 'ili (LCA 3284); Kuhumulalo, and Kuhumuluna (LCA 8077).
- Kahunaoe, East [(Ka-huna-one) Bits of sand]**
—Cottage lot, junction of Koula and Hanapepe. Kahunaoe (ili land) from Koula to Punnau-iki.(Gay). (LCA 9135); name of split stone on Koula boundary (Boundary Commission 1873).
- Kai, East [Sea]**
—Ridge [Koula].(Gay), pali name in Koula 'ili (LCA 10457).
- Kailumalle**
—canoe lani name (LCA 7631).
- Kalepapa [(Ka-lele-papa) Iele vines growing closely together]**
—Ridge makai of Poonae Valley opposite Kaape. Orange trees on ridge [Manuahii].(Gay)
- Kailiili**
—pali & kula name in Manuahii 'ili (LCAs 9654)
- Kailipohaku, West [(Kaili-pohaku) Pebbly stone]**
—Land covered with rocks from floods. Puwai, a small valley on the west [Koula].(Gay)
- Kailiili [(Ka-iliili) The pebbles] Sand bench at the middle part of Ukula point.(Gay)**
- Kailiili, West [(Ka-iliili) Pebbles]**
—Land (orange trees; kuleana)(Gay); mo'o name (LCA 8077).
- Kaimukanaka West [(Ka-imu-kanaka) The imu to bake man in]**
—Valley opposite Oopuo'opukaua, Kahaiki mauka part of the valley [Manuahii].(Gay)
- Kaitpo**
—mo'o name in Eleele 'ili (LCA 7925).
- Kalaai**

- Kaloaiki**
—mo'o name in Kaauwaekahi 'ili (LCAs 9232 & 10658).
- Kaloanui**
—mo'o name in Kaauwaekahi 'ili (LCAs 9232 & 10658).
- Kalolanui**
—mo'o name in Kaawanui 'ili (LCA 10275).
- Kalaaki, East [(Ka-lua-ki) The ti root pit]**
—Upper part of Moehinihi Valley at orange trees [Koula].(Gay)
- Kaluaki [(Ka-lua-iki) The small pit]**
—The second flat on the ridge below Owaka.(Gay)
- Kalanui [(Ka-lua-nui) The great-pit]**
—The first flat on the ridge mauka of the public road.(Gay); mo'o name in Kaawanui (LCA 6309, and Land claim 9185), name of pali (LCA 9265), mo'o name in Kukuilolo 'ili (LCA 10526).
- Kalaulehua [(Ka-lau-o-lehua) The tips of the lehua]**
—Ridge mauka of Laupala [Manuahii].(Gay)
- Kalupuaa**
—sub 'ili and mo'o name in Kaauwaekahi 'ili (LCAs 5473 & 8254)
- Kalua, West [(Ka-lua) Nausea]**
—Valley runs up makai of Aalawela ridge, upper part to Kalapa ridge to top at orange tree. (Gay)
- Kamaewaewa**
—mo'o name in Eleele 'ili (LCA 7925).
- Kamahele**
—mo'o name in Kuloa 'ili (Land claim 9039).
- Kalapa, West [(Ka-lapa) The ridge]**
—large peak in Koula (Boundary Commission 1873); Kalai and Manu (Pukui & Eibert)
- Kalapa, West [(Ka-lapa) The ridge]**
—Ridge from Kalua to Kalaukawau [Manuahii].(Gay)
- Kalapunahae, West [(Ka-lu-pu-nahae) The day of the torn whistle]/ Kalapunahai**
—Land at junction of Manuahii and Koula.(Gay); pali place name in Koula (Boundary Commission 1873).
- Kalaulehua, East [The tips of the lehua]**
—Falls mauka of the spring where olona grows [Koula].(Gay)
- Kalahiku, East or Kalachiku [(Ka-lae-hiku) Seven pointed]**
—Land [Manuahii].(Gay)
- Kaleinaku, West [(Ka-leina-a-Ku) Ku's leap]**
—Where Ku jumped over cliffs. Small wet branch opposite Hobei-nui [Koula].(Gay)
- Kalele, East [Lean]**
—Land and ridge [Manuahii].(Gay)
- Kaloha**
—mo'o name in Kaauwaekahi 'ili (LCA 8123).

- Kamalauwai, West** [(Ka-malu-a-wai)
Sheltered water]
—Hollow with water in it [Koula]. (Gay)
- Kamaoa Ridge**
—between Punalau-nui and Punalau-iki.
(Gay), pali (LCA 9135).
- Kamohio**
—Land and cliff opposite Kumimi cliff.
(Gay), 'ili name (LCAs 8011, 9265 &
10271), possibly ka-mōhio, the draft or gust
of wind (Pukui & Elbert).
- Kamoleloa**
—mo'ō name in Kapalawai 'ili (LCA 7919).
- Kanaele**
—mo'ō name in Kaaueackahi 'ili (LCA
7321B).
- Kanaliianu**
—kula name in Ukula (LCA 6377).
- Kaneihuinui**
—mo'ō name in Kuiloa 'ili (LCA 3654)
- Kaneihilelei**
—mo'ō name in Kuiloa (LCA 3654)
- Kanihokeke**
—mo'ō name in Kaueackahi 'ili (LCA
8020).
- Kaohai**
—mo'ō name in Eleele 'ili (LCA 8036).
- Kaohia, East** [(Ka-ohia) The ohia tree]
—Land. Clump of bamboos [Koula]. (Gay)
- Kaolenaula**
—mo'ō name in Kaaueackahi 'ili (LCA
7993).
- Kanikawé, West** [(Kani-ka-wé)
Prolonged sound]
—Land (gate) and Kaumai V. at foot of
- Kanikawe.** (Gay)
- Kanuilima**
—mo'ō name in Koula 'ili (LCA 10475).
- Kaolenaula**
—mo'ō name in Kaaueackahi 'ili (LCA
7993).
- Kaopitopiloo**
—auwai name in Kaawanui 'ili (LCA
10275).
- Kapaele**
—mo'ō land in Kaaueackahi 'ili (Land
claim 9134).
- Kapalaa**
—sharp peak, NW corner of Wahiaua and
NE corner of Koula and Hanapepe
(Boundary Commission 1873)
- Kapapa**
—kula name in Kaaueackahi 'ili (Land
claim 9059).
- Kapaeakaliikauluhane, West** [(Ka-
pae-a-ka-ili-a-ka-ulu-hane) The rows
of soft voiced ones]
—Kapae pali called Kanoo [Koula]. (Gay)
- Kapaele**
—mo'ō name in Kaaueackahi 'ili (LCA
3309)
- Kapahili Gulch**
—gulch on western side of Hanapepe
(USGS 1983), place of heiau (Thrum); male
hula halau in Kapahili (W. Holi comm.
2001)
- Kapaka, East** [(Ka-paka) Little drops]
—Valley and kula ridge opposite
Kaumanuahi at hau trees and bamboo
clump [Manuahi]. (Gay); pali in Kaawanui
'ili (LCA 10275).
- Kapaka falls**
—Back of Nuanua's house. Water of Aalii-
nui [Hanapepe uka]. (Gay)
- Kapaki**
—mo'ō name in Kapalawai 'ili (LCA 7919).
- Kapalama pali**
—pali in Kapalawai 'ili (LCA 3284)
- Kapalawai [(Ka-palawai) The-water-
moss]**
—Sand beach on the eastern side of Pokahi.
(Gay); 'ili name in Land Commission
claims, name of pali in Kapalawai 'ili (LCA
3284), also Napalawai pali (LCA 6578).
- Kapalea Falls**
—Aalii-nui stream back of Nuanua's home
[Punalau and Kaawanui]. (Gay)
- Kapaleoke [Kapaleoki?]**
—place name Koula boundary given by
informant Kuapuaa (Boundary Commission
1873)
- Kapaliemo [(Ka-pali-emo) Cliff slowly
ascended]**
—Valley, west branch. (Pali almost closing
in top [Koula]). (Gay)
- Kapaliemo Falls, Halulu**
—West branch of river above falls of Halulu
up to Kawaikini [Koula]. (Gay)
- Kapewa**
—'ili name (Land claims 8255 & 9903).
- Kapilau [(Ka-pilau) The-stench]**
—North end of Kaawanui cliff. Kapaka falls
at sand. Kapilau Peak above Kaawahui,
mauka end of cliff. Old road from Punalau
to Kano called Kapilau from its slippery
condition in rainy weather. Top of road
came out on point. The ridge from this up
was bound between Kano and Punalau.
(Gay)
- Kapalima**
—mo'ō name in Kukuilolo 'ili (LCA 10526).
- Kapohakukilomanu [(Ka-pohaku-kilo-
manu) Stone from which to watch the
birds]**
—Valley and stone at Puhī, a branch of
Manuahi Valley. (Gay)
- Kapouhana 'ili**
—'ili name in Land Commission claims.
- Kapukaaki [(Ka-puka-a-ki) Ki's
doorway]**
—Ridge descending from Hiloa to Manawai
ridges at the top of a small valley on mauka
side of ridge. Orange tree is near [Koula].
(Gay)
- Kapukalua, West [(Ka-puka-lua)
Double holes]**
—Land at mouth of [Manuahi] valley also
called Kapikolua (Ka-piko-lua) Double
crowned; land. (Gay); lo'i & kula land (LCA
9650); community of Kapukalua (LCA
10349)
- Kapulamai**
—kula name in Kuiloa 'ili (LCA 3284)
- Kapunaiki, West [(Ka-puna-iki) Small
spring]**
—Valley, mauka of Kapukalua at the
source of water [Manuahi]. (Gay); hill
named as Manuahi boundary (Boundary
Commission 1873)
- Kapunawai [(Ka-punawai) The-spring-
of-water]**
—A cove of the sand beach. (Gay), a sandy
place in Kaaueackahi 'ili (LCA 3654).
- Kapuwahai**
—stream name in Koula mentioned by
informant Kuapuaa where boundary
description begins (Boundary Commission
1873)

Kauaiiki
—kalo land in claim 387 tabood by Mr. Whitney at his pleasure (LCA 387)

Kauai-iki
—name of a stone originally located in Wahiawa, which like other stones on other islands was of the shape of Kauai and people said you had been around the whole island until you walked around Kauai-iki. Chantier Pihelo, part of a Hanapepe family chanted a special mele, and the stone grew light enough to be moved (Pukui 1936:4).

Kauakabunuu [(Kau-a-kahi-unu) Where-the-little-heiau-stands]
—A small heiau or unu, close to Kailiili. (Gay)

Kaumaelele
—kithapat name in Kumimi 'ili (LCA 9265).

Kaunulono
—mo'o name in Waikanono 'ili (LCA 7321B)

Kawaolehua
—kula name in Kaaawaekahi 'ili (LCA 9282).

Kawaikini [(Ka-wa-kini) Many waters]
—Peak overlooking Koula and Wailua. (Gay)

Kawaiipapa [(Ka-wai-papa) Forbidden waters]
—At head of Manuahi valley. Olona plants grew thriftily in this spot. (Gay)

Kawaiipua [(Ka-wai-pua) Choked water]
—Valley. The west branch of Manuahi from Puhii up. (Gay)

Kawalehua
—kula name in Kaaawaekahi 'ili (LCA

8020).

Kawowo, West [Seedling]
—Land. (Kepa's old house lot was called Kukuulu) [Manuahi]. (Gay)

Kean, West [(Ke-aa) Rocky]
—Land mauka of Kiochio Valley [Koula]. (Gay)

Keahi pali
—pali name in Kapouhana 'ili (LCAs 9029 & 10271).

Keahi stream
—stream name in Kapouhana 'ili (LCAs 9029 & 10271).

Keanaa pali
—pali name in Waikoko 'ili (LCA 8011), a rocky place (LCA 10271).

Keahakau/Eeakakau
—mo'o name in Waikanono 'ili (LCA 7920).

Keahi, East
—Land at Kaleinakuhanu cliff and road at head of cliff to Kano [Punaleu and Kaawainui] (Gay), pali in Kamohio 'ili (LCA 10271).

Keahioua
—place name of a spur off Pohakea on boundary between Wahiawa and Hanapepe (Boundary Commission 1873).

Kealii
—mo'o name in Kuilou 'ili (LCAs 3309 & 9272), pali name in Kaaawaekahi 'ili (LCA 10595).

Keawehele
—pali name in Kumimi 'ili (LCA 9265).

Kenakua
—point on boundary between Wahiawa and Hanapepe at sea shore with sea arch (Boundary Commission Hanapepe).

Keolomea [(Ke-olomea) The olomea tree]

—West branch of Paliemo above Halulu falls, also ridge between it and Hauhili awa garden. It is on the west side of the ridge above two peaks from Point [Koula]. (Gay)

Kihinui
—house lot name in Kapalawai (LCA 3309)

Kilo-manu [Watch for birds]
—A stone look out for birds. Top of ascent on Manawai ridge. Puhii is the mauka part of Manawai ridge to Puuonannahu [Koula]. (Gay)

Kinai, East [Extinguish]
—Falls opposite Kookoolau [Koula]. (Gay)

Kiochio, West [A group of puddles]
—Valley to Kuapoo [Koula]. (Gay)

Kipaloto, West [(Ki-paloto) Sifted Paloto clay]
—Ohia trees above pool [Koula]. (Gay)

Kipi, East [Rebellious]
—Land [Manuahi]. (Gay)

Kipu
—mo'o name in Koula 'ili (LCA 8035).

Koakahai
—koa grove in Manuahi or Kapewa 'ili (Land claim 8255); community of Koakahai (LCA 10349)

Koholalele or Kahetehele
—mo'o name in Kaaawaekahi 'ili (LCA 7993).

Koipalea/Koepalea
—valley north of Kaaawaiki 'ili (LCA 10349). Place name in Manuahi (Boundary Commission 1873)

Kokahai
—Place name in Manuahi (Boundary Commission 1873)

Kollkoll [a cutting]
—At head of road to Kano from Puuloalele (hala tree) above Waiuili [Punaleu and Kaawainui] (Gay)

Kookoolau, West [A common weed]
—Land. Puaa Keohua a mound mauka of Pohakuloa [Koula]. (Gay)

Konanui, East [(Kona-nui) Great leeward side]
—Valley mauka of Puulu. Palikea north or mauka branch of Konanui [Manuahi]. (Gay)

Koula, West [(Lo-ula) Red sugar cane]
—Large stone below Manuahi stone on the hill [Koula]. (Gay). 'ili kupono (LCA 8035). The Hawaii Ethnographical Notes (HEN; Bishop Museum) show that in the early 19th century the konohiki of Koula is Nakuahana, and the prohibited fish is the Oopu.

Kuahanui [(Ku-aha-nui) Great-council-meeting]
—Landing at Ukula. (Gay)

Kuahua [(Ku-ahua) Mound]
—A flat peak at junction of Kolaikawau ridge, Manuahi Valley and Kepani ridge. (Gay)

Kuakuauahua [(Ku-ahua) Mound]
—A flat peak at junction of Kolaikawau ridge, Manuahi Valley and Kepani ridge. (Gay)

Kualaua
—sub 'ili name, pahale and kula name in Eieele (LCA 3284).

Kualauuawae [(Kualu-auwae) Sagging chin]

Named Places, page 11

- Lower part of Mokae Valley, above falls Mololae [See also Auwae; Koula]. (Gay)
- Kuamauahi, West** [(Kua-(a)-Manuahi)]
—Manuahi's back
—At orange trees at the old gate. (Gay)
- Kuanana**
—mo'o name in Kaauiwaekahi 'ili (Land claim 7921).
- Kuapoo**
—peak on boundary of Koula (Boundary Commission 1873)
- Kuheleloa**
—small watered valley name in Kaauiwaekahi 'ili (LCA 7631), auwai, kula, and sub-'ili names (LCAs 7677 & 8215).
- Kuhumu**
—mo'o name in Kaawanui 'ili (LCA 10275).
- Kuiloa 'ili**
—'ili name in Land Commission claims. This is the 'ili where in (October) 14 (1816²) the German/Russian, Georg Scheffer, visited for two days with the Chief Opana Kupikea, a village with eleven families, and subsequently received Kuiloa as a gift. He ordered the dry land planted into cotton, tobacco, maize, and transplanted sufficient orange, lemon, and olive trees, as well as delivering there a number of brood sows and assigned two old Aleuts as watchmen (Pierce 1965:185). The Hawaii Ethnographical Notes (HEN; Bishop Museum) show that in the early 19th century (perhaps after Kupikea) the konohiki of Kuiloa is Manu, and the prohibited fish is the Anae or mullet.
- Kukalali, East** [(Kukala-(a)-Ili)] Chiefs' proclamation].
—Land (Gay)
- Kukamanu Gulch**
—name of gulch on west side of Hanapepe river (USGS 1983).
- Kukapu, West** [(Ku-kapu)] Sacred Ku] —At and above the place where the hau trees grow [Koula]. (Gay)
- Kukekaloa**
—pile of stones at first marker beyond the sea on boundary along Wahiawa (Boundary Commission 1873)
- Kukui [Kukui tree]**
—A point. (Gay)
- Kukuihilo 'ili**
—'ili name (LCAs 7928, 10010, 10526); pali name (LCA 10525).
- Kukuiipuka**
—mo'o name in Kauwanui 'ili (LCA 6309).
- Kumimi, East** [A poisonous crab]
—Land and cliff Kamohio (Gay); Kumimi crab used in sorcery and F.L. Tabrah suggests that it may be a heart stimulant (Tabrah 1967) also "to stand and urinate" from story of man who stood on cliffs above Hanapāpē (Informant Corr).
- Kumimi, West** [A poisonous crab]
—Land below the cliff of Kumimi between Maialoa and Kamohio. (Gay); Associated with Kumimi is the "Deep Hole" or "Black Hole" which was a swimming hole in the river in the early part of the century, and a place where first offerings were made (pers. comm. Mrs. May Corr)
- Kumuloli [(Kumu-loli)] Changeable-**

² Pierce notes that these dates are of the Julian calendar rather than the Gregorian calendar used exclusively today and are therefore about twelve days behind (Pierce 1965:ix)

Named Places, page 12

- Makalii [Tiny]**
—Falls above Manawai in the north west branch [Koula]. (Gay)
- West Makanaia** [Given as a gift]
—Ridge from Kanikawe to Kalaukawau. (Gay)
- Makaopihl, West** [Scooped out opihl]
—Land opposite Halulu and Mauka [Koula]. (Gay); pali (LCA 10458).
- Makawell/Makawele** (Lit. Fearful features, Pukui & Elbert)
—ahupuaa bounding Hanapepe on West (Boundary Commission 1973); formerly called Ho'ānuanu (Lit. To cause cold, Pukui et al. 1974)
- Maki, West** [Wedged open]
—Land and valley, two coconut trees [Manuuh]. (Gay)
- Makole**
—mo'o name in Kaauiwaekahi 'ili (LCA 8123); bluff name cited in Thrum with Makole heiau.
- Makupuhala**
—river name in Manuahi on boundary (Boundary Commission 1873).
- Maloku**
—heiau name in Koula on boundary (Boundary Commission 1873).
- Malua**
—house lot name in 'Ili Kaauiwaekahi (LCA 3309)
- Maluokukui**
—mo'o name in Eleele 'ili (LCA 8036).
- Manawahe**
—gulch name in Koula (Boundary Commission 1873)
- tree]**
—A point. (Gay)
- Kumuula**
—mo'o name in Kaauiwaekahi 'ili (LCA 9232).
- Kuono, West** [Recess]
—Pool at Ojhi [Koula]. (Gay)
- Kupehu, West** [(Kupe-hau)] Drenched with dew
—Land at hau trees on Palileiridge. (Gay)
- Kupuhili [(Ku-puhili)] Ku-who-interrupts-work**
—A point and cave south-east of Hanapepe River at its mouth. (Gay)
- Kuunakaiole [(Kuuna-ka-iole)] Rat's-fishing-place]**
—Point and sand at south-western part of Ukula. (Gay)
- Lana, West** [Buoyant]
—Land opposite and mauka of Koolanu [Koula]. (Gay)
- Lauki**
—mo'o name in Kaauiwaekahi 'ili (LCA 8082).
- Lau-pala, West** [(Lau-pala)] Yellow leaf
—Valley and short ridge mauka of Puhi. Valley branches in two, runs up between Peapea peak and Lana peak which is the road to Kawaipapa and Kiannone to Kepani [Manuuh]. (Gay)
- Maamaakua [(Maamaa-akua)]**
Accustomed-to-gods] A rocky beach. (Gay)
- Maialoa**
—Kula opposite Kaawanui and Waiulii [Punalau and Kaawainui]. (Gay). (LCA 7928).

Manawaiopuna [(Mana-wai-o-puna)
Spreading waters of Puna]
—Corruption of Mano-wai-o-Puna, the Puna branch. Falls. East branch Manawaiopuna [Koula]. (Gay)

Manienie
—mo'o name in Kaawanui 'ili (LCA 5447)

Manuahi, West [Freely given]
—Stone below Puukakahi in Koula. (Gay)
valley in Hanapepe & Makaweli (Iao 1919 map). 'ili kupo and river (LCA 9654); The Hawaii Ethnographical Notes (HEN; Bishop Museum) show that in the early 19th century the konohiki of Manuahi is Pūco, and the prohibited fish is the Oopu.

Manuia/Manua
—place name on boundary of Koula (Boundary Commission 1873)

Maohi'i/Maukiiha
—mo'o name in Kuiloa (LCA 3654)

Mauili [Constant jealousy]
—Pool below Makuauahi, makai [Koula]. (Gay); name of mo'o in Kaauwaekahi 'ili (LCAs 9116 & 10010).

Meheula pali
—pali name in Kaauwaekahi 'ili (LCAs 7677 & 9142), mo'o name in Kaauwaekahi 'ili (LCA 10311).

Moeahiahi, East [(Moe-ahiahi) Evening sleep]
—Valley in Waiaka [Koula]. (Gay)

Mokupapa [(Moku-papa) Low-land]
—Sand at Hanapepe. (Gay)

Moloku
—heiau name on boundary of Koula (Boundary Commission 1873)

Mopua [(Mo-pua) Plucked flower]

Nanituwelu
—pali name, mo'o name in Kuhumu 'ili (LCA 3284)

Naohai/Naokai
—mo'o name in Kaawanui 'ili (LCA 7928).

Nawiliwili
—kula name in Kaauwaekahi 'ili (Land claim 9059).

Nihowano
—pali name in Elele (LCA 3284)

Ohikiula
—mo'o name in Kaauwaekahi 'ili (LCA 7993)..

Oiki, East [(O-iki) Small pinnacle]
—Land and sharp peak, "puu kaa" (or fortress) [Koula]. (Gay)

Oinolo
—pile of stones on along Wahiawa boundary (Boundary Commission 1873).

Okeke
—kula name in Kaauwaekahi 'ili (LCA 9189).

Olepa'a/Olepa'u
—mo'o name in Kaauwaekahi 'ili (LCA 7631).

Olonawehi [(Olona-wehi) Fine growth of olona]
—Damp place where olona grows rank [Koula]. (Gay) Boundary of Koula described by informant Kuapuna as at Manawahe junction (Boundary Commission 1873).

Ooā [Cracked spear]
—Valley. West branch above falls of Makali'i. Runs up into Kapalaoa spring [Koula]. (Gay)

Oopukaaua, East [(Oopu-kaaua) Battling

oopu fish]
—Land (Gay)

Okipu 'Okipu'u, forest clearing - term used in O'ahu land records (Pukui and Elbert)
—mo'o name in Koula 'ili (LCA 10458)

Opea
—mo'o name in Moonui 'ili (LCAs 9029 & 10271).

Opulala
—kula name in Kumimi 'ili (LCA 9265).

Paakahi Point
—Point on west side of Hanapepe Bay (USGS 1983).

Paauwae, East [(Pa-auwae) Touched on chin]
—Valley opposite Maki and below Kalele also above valley [Manuahi]. (Gay)

Paekahulumanu
—kulanahauhale name in Kaauwaekahi 'ili (LCA 9283).

Pahakiki'i
—Malua above Anliinui [Punaluu and Kaawainui]. (Gay)

Pahoa, East [Dagger]
—Falls [Koula]. (Gay)

Palo [Strife]
—Valley makai of Kaieiepapa and opposite Kaape [Manuahi]. (Gay)

Pakahi [(Pa-kahi) One-by-one]
—A point opposite Kaieie point on the western side of Hanapepe. (Gay)

Palalaukalo, West [(Pala-lau-kalo) Yellow taro leaf]
—Land. Pupunuu, a large stone at head of Palalaukalo [Koula]. (Gay)

Palelei, West
 —Small heiau at top of flat. Ridge runs up to top of ridge below Peapea peak [Manuahii]. (Gay)

Paitikosi
 —place name along boundary of Wahiawa and Hanapepe (Boundary Commission 1873)

Palipoko [(Pali-poko) Short-cliff]
 —Cliff and sand beach west of Hanapepe beach. (Gay)

Paliuli, East [(Pali-uli) Dark cliff]
 —Cliff mauka of Moloku [Manuahii]. (Gay)

Papakea, East [(Papa-kea) white-surfaces]
 —Cliff above on the east side of Kahunahe, (ili) and north of Punalau-iki. (Gay); pali name (Boundary Commission 1873).

Papala-nui, East [Big papala bush]
 —Falls, mauka of Kinai [Koula]. (Gay)

Papohaku, East [(Pa-pohaku) Stone wall]
 —Land below cave of Keanaloa and Kupapau [Koula]. (Gay). 'Ili kupono of Koula (Land claim 9008).

Papohakuhunaahuula, West [(Pa-pohaku-huna-ahuula) Stone wall in which feather cape is hidden]
 —Large stone in river at a crossing [Koula]. (Gay); Now can be found at Stone Garden at Kukuiofona.

Papouhaaa
 —'ili name (LCA 10271).

Papaalu Gulch
 —valley on western side of Hanapepe (U.S.G.S. 1983).

Pekeu, East [Flapping wings]
 —Valley mauka of Pohakea [Manuahii]. (Gay)

Peleawa [(Pele-awa) Bitter volcanic flow]
 —Valley. South-east branch of Manawai. Has an orange tree in it. Largest branch below Makalii falls, not far above Manawai falls [Koula]. (Gay)

Poakua, East [(Po-akua) The night of akua]
 —Cave near head of Kalua mauka of Kalapa ridge looking into Manuahii. (Gay)

Poalepo, West [(Poa-lepo) Dug into the soil]
 —Ridge. Land including Waakau, Mookao and Nannakala [Koula]. (Gay); a mo'o name in Koula 'ili (LCAs 8035 & 10458).

Poekahulumanu
 —kula name in Kaawaekahi 'ili (LCA 10016)

Pohakea, East [(Poha(ku)-kea) White stone]
 —Cliff and also peak [Manuahii]. (Gay) Peak on boundary between Wahiawa and Hanapepe (Boundary Commission 1873).

Pohakika
 —place name on boundary between Wahiawa and Hanapepe (Boundary Commission 1873).

Pohaku
 —mo'o name in Kapouhana 'ili (LCA 9029).

Pohaku-iaa, West [Long stone]
 —Large stone at crossing and land opposite on east side [Koula]. (Gay)

Poonae, East [(Poo-nae) Weary head]

Punakamoa [(Puna-na-ka-moa) Hen's nest]
 —A round hollow mauka of Anka on the flat near the road. (Gay)

Punikaheka, East [(Puni-kaheka) Surrounding the pool]
 —Small valley and pool mauka of Pekeu. This is mauka of Makaanui valley [Manuahii]. (Gay)

Puolo [Bundle]
 —A point. (Gay); Southernmost land point in Hanapepe where the Hanapepe Light is located (U.S.G.S. 1983).

Punioa
 —Valley next makai of Palelei and Moomuku ridge makai of valley [Manuahii]. (Gay)

Puuananahu
 —place name on Koula boundary given by informant Kuanaa (Boundary Commission 1873)

Puuanu/Puuai/
 —a peak on Koula boundary. Informant Kuapuu's description of the boundary is transcribed "Puuni," (Boundary Commission 1873).

Puuanu
 —a large stone rock on boundary of Koula (Boundary Commission 1873)

Puuaouka
 —hill name related by informant Kuapuan about Koula boundaries (Boundary Commission 1873).

Puukuaohiko
 —place name along Koula boundary (Boundary Commission 1873)

Puukuaohola
 —place name on boundary of Koula (Boundary Commission 1873)

—Valley and ridge opposite and mauka of ridge. A large stone with a hole through it that sounded like a drum when hit with a ti leaf. It is said that Huleia a man from another island, 40 years ago broke a part of the inside of the hole which checks the stone and shut up the mouth of Wainoi spring in Olokele. (Gay)

Popokea
 —kula name in Kahuneone 'ili (LCA 9135).

Puea pali or Pueo?
 —pali name in Kaawaekahi 'ili (LCA 9283).

Pueo pali or Puea?
 —pali name in Kaawaekahi 'ili (LCA 8077).

Puhi [Eel]
 —It is the ascent out of Hauuli to Kapohaku [Koula]. (Gay)

Puhikai, West [(Pui-ka) Sea eel]
 —Land. Mango trees [Manuahii]. (Gay)

Puhuka, East [Upland eel]
 —Cliff [Manuahii]. (Gay)

Puhunehune
 —District name in Kaauweakahi 'ili (LCAs 3309 & 9232), kulana kauhale name (LCA 10222).

Pukuakahi (Puukuakahi?)
 —place name on boundary of Koula (Boundary Commission 1873)

Punalau
 —Many springs. [Just makai of Koula & Manuahii Valleys] (Gay); name of 'iimbandi commission claim.

Punalaunui
 —'ili aina from Kaawanui to Punalau-iki. (Gay).

- Puukuaiwa/Puukuawea**
—place name on boundary of Koula (Boundary Commission 1873)
- Puukuakahi/Pukuakahi**
—place name along Koula boundary (Boundary Commission 1873).
- Puukuakai**
—place name on boundary of Koula (Boundary Commission 1873)
- Puukuailima**
—place name on boundary of Koula (Boundary Commission 1873)
- Puukuaihua**
—place name on boundary of Koula (Boundary Commission 1873)
- Puukuauona**
—place name along Koula boundary (Boundary Commission 1873)
- Puukuauunui**
—sharp peak along Koula boundary (Boundary Commission 1873)
- Puukuawalu**
—place name on boundary of Koula (Boundary Commission 1873)
- Puu-lehua (Lehua hill)**
—A peak at head of this ridge is the highest part of Waialeale, 4775 feet. Junction of all ridges from Olokele to Kahili range Kolos. Puukui is peak makai of Puulehua. This peak, Puulehua divides the land where birds are found at Olokele, Manuahi, Puulehua. Puulehua is the upper end of Manuahi. It is on the upper end of the ili of Manuahi. Above this, Olokele and Koula join to the top of Kawaikini which is the face of cliff of Kawaikini, facing Koula (Gay); place in on boundary between Koula and Manuahi (Boundary Commission 1873).
- Puu-lolo (Of-changed-hill)**
—Peak where road from Kaawanui comes up to the flat at the hala trees above Hakaaluwa and makai of the Pali of Kawanui [Hanapepe uka]. Puuloleole on road from Naniokala's home to Kolikoli hala tree. (Gay)
- Puulu, East [Company of people]**
—Land. Ohe bushes [Manuahi]. (Gay)
- Puumakole/Pumakole**
—mo'o name in Kaaueakahi 'ili (LCAS 9142 & 9189)
- Puuhalahi**
—place name along boundary between Wahaiwa and Hanapepe (Boundary Commission 1873).
- Salt Pond Park**
—State Park in Hanapepe where family salt flats are still in production (USGS 1983) (W. Holi comm.).
- Ukula (Uku-la) Paid-by-the-day**
—Salt ponds (Gay). 'ili name in land commission claims.
- Uluolo, West [(Ulu-lolo) Prayer of sacrifice]**
—Opposite Wainoia Valley [Koula]. (Gay)
- Wahapua [(Waha-puaa) Hog's mouth]**
—A point. (Gay)
- Wahlawa (Lit. Milkfish place, Pukui & Elbert)**
—ahupuaa bounding Hanapepe on East (Boundary Commission 1873)
- Waihihi-iki, West [(Wai-ahihi-iki) Little spread of water]**
—Falls. Makalauihi, land [Koula]. (Gay)
- Waihihi-nui, West [(Wai-ahihi-nui) Big spread of water]**
- Puuloleole**
—Falls mauka of Waihihi-iki falls [Koula]. (Gay)
- Waia (Wai-aka) Shadowy water]**
—Land. Okipu at head of Waia (kuleana of Alaiki, spanna 1. Apana 2 at Poopo, Waakau) [Koula]. (Gay). pali and mo'o names (LCA 8035) 'ili kuopono of Koula (Land claim 9008; LCA 10457, LCA 10458).
- Waikamoo Spring**
—at head of and mauka of Kapilau Ridge [Punalau and Kaauiunui]. (Gay)
- Waialeamoo [(Wai-ale-a-moo) Lizards rippling water or Waiokeoe]**
—Spring makai of cliff and mauka of Koakahi [Manuahi]. (Gay)
- Waikahala, East [(Wai-ka-hala) Water of the Pandanus tree]**
—Land (Lepan (?) crossing below). Also a pool [Koula]. (Gay)
- Waikanene**
—mo'o names; Waikanene 1 & 2 in Kaaueakahi 'ili (LCAs 7677 & 9142).
- Waikanono 'ili**
—'ili name in Land Commission claims.
- Waikanui**
—mo'o name in Kaaueakahi 'ili (LCA 9265).
- Waiiwa [(Wai-iwa) Moving waters]**
—Falls and land makai of it on same side [Koula]. (Gay)
- Wailima [Five waters]**
—A hillock mauka of Puuonahua, a divide on each side of hillock, hence the name. Keolomea branch of Koula runs into upper division of Wailima [Koula]. (Gay); place above falls in Koula mentioned by
- informant Kuapuaa as "Wailimu"**
(Boundary Commission 1873)
- Wainoia, East [(Wai-nono(i)-ia) Water asked for]**
—Valley at head of Waia (land) Namoki's kuleana at lower end of Waia. Alaiki's kuleana at Okipu head of Waia, spanna 2 at Waakau (Poolepo) [Koula]. (Gay). kahawai name in Koula 'ili (LCAs 8035 & 10458).
- Watoholeinui**
—pali name in Kaaueakahi 'ili (LCA 10349).
- Waiolipo**
—district name in Kaaueakahi 'ili, 'ouwai name in Kaaueakahi 'ili (LCA 5473), house lot name (Land claim 9134 & LCA 9142).
- Waiokee [(Wai-o-ke-oe) Murmuring waters]**
—Peak and cliff below Kahipa peak on Manuahi side of Pali-koae. (Gay)
- Waipahia/Waipahu**
—mo'o name in Kaaueakahi 'ili (LCA 10595); deep pool name on boundary in Manuahi (Boundary Commission 1873).
- Waipahu, West [(Wai-pahu) gushing water]**
—Pool and small valley at foot of Kapukalua (land) behind Manuahi and cliff below Hoihi peak and makai of Manuahi. (Gay); name of pali mauka of Kaaueakahi 'ili (LCA 10349).
- Waiulili**
—'ili name (LCA 11068) pali name in Kumimi 'ili (LCA 9265).
- Waiululi, West [(Wai-ululi) Dark-waters]**
—Land opposite Maialoa and between Hakaaluwa and Kumimi. (Gay). 'ili name in land commission claims (LCA 9265)

Alalua or Waialua
—koele lo'i name in Kaawekahi 'ili (LCA 8283), *waiā* + *lua* meaning possibly a *lua* fighting flip? (Pukui & Elbert).

Wawaunake, West (Wawaunake)
Resounding footsteps)
—Land from Kalai to Pohaku-loa, a big stone [Koula].

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