BOARD OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109

March 7, 1996

Mr. Gary Gill, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: KAMOLE WEIR WATER TREATMENT FACILITY
NEGATIVE DECLARATION
TMK 2-5-04:080, MAKAWAO, MAUI

The County of Maui Board of Water Supply (BWS) is the proposing agency for the above referenced project. The proposed Kamole Weir Water Treatment Facility will comply with the Surface Water Treatment Rule and provide additional potable water to the Makawao water system. The existing treatment process units will serve as is with the exception of flocculation tanks which will be altered and the dual media filter which will be replaced with new microfiltration technology. A new flow meter and flow control valve will be provided to regulate flow from the forebay to the water treatment system. The existing flocculation tanks will be converted into a wet well for the new raw water pumps.

The BWS reviewed and responded to comments related to the draft environmental assessment for the Kamole Weir Water Treatment Facility. The BWS determined that implementation of this project will not have significant environmental effects. This determination is based on the significance criteria listed in 11-200-12 of the Environmental Impact Statement Rules. Specifically, these significance criteria are addressed below:

1. The proposed project will not result in an adverse commitment, loss, or destruction of any natural or cultural resources.

2. The range of beneficial uses of the environment will not be curtailed. The proposed project will not curtail the use of the surrounding environment as pineapple field.

3. The project will not conflict with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court orders or executive orders.

4. The proposed project will not adversely affect the economic or social welfare of the community or state. The project will improve the social welfare of the community by providing public drinking water in conformance with the SWTR.

5. The project will not adversely affect public health. The project will improve public health by enhancing the flexibility and reliability of the Makawao water system.

6. The project will not involve substantial adverse secondary impacts, such as population changes or effects on public facilities. The proposed project will upgrade existing public facilities.

7. The project will not change any policy concerning the issuing of additional water meters. The additional water policy remains intact since this project does not provide any increase in the source capacity.

8. The project will not involve a substantial degradation of environmental quality.

9. The project will not include cumulative considerable effect upon the environment nor involves a commitment for larger actions. The proposed actions are complete and will require no further action.

10. The project will not substantially affect a rare, threatened or endangered species, or its habitat.

11. The project will not detrimentally affect air or water quality or ambient noise levels. Short-term impacts will occur during the construction phase. Treatment of backwash water and settled solids will be in a manner approved by the Hawaii Department of Health.

12. The project will not affect an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

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13. The project will not affect scenic vistas and viewplanes.

14. The project will not require substantial energy consumption.

Therefore, the agency is issuing a negative declaration. Please publish this notice in the April 8, 1996 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the final EA. If you need additional copies, please contact James Okazaki at (808) 529-7269, or any questions, please contact myself or Mr. Herb Kogasaka, County of Maui, at (808) 243-7835.

Sincerely,

David R. Craddick
Director

/HK:sc
Enclosures

xc: James Okazaki, M&E Pacific

1996-
1996-04-08-HA-FEA - Kamole Weir Water Treatment Facility

FINAL
ENVIRONMENTAL ASSESSMENT

FOR

Kamole Weir Water Treatment Facility

MAKAWAO, MAUI

TMK: 2-5-04-80

This document was prepared pursuant to Chapter 343, H.R.S.

PROPOSING AGENCY: **BOARD OF WATER SUPPLY**
County of Maui
P.O. Box 1109
Wailuku, Maui 96793

RESPONSIBLE OFFICIAL: _____ 3/25/96
David R. Craddick **Date**
Director

Prepared by:

Board of Water Supply

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1.0 Introduction

The proposed upgrade to the Kamole Weir Water Treatment Project will significantly improve the water quality and increase the capacity of potable water production within the Makawao water system. The project consists of a new microfiltration system and feed pumps which will utilize the existing water source and system components at the existing Kamole Weir Water Treatment Facility (WTF). It will also include the demolition of the existing direct filtration treatment system. According to 343-5 of the Hawaii Revised Statutes (HRS), an environmental assessment (EA) is required because the proposed action includes Maui County funds.

This EA was prepared pursuant to Title 11, Chapter 200 of the Hawaii Administrative Rules (HAR). The purpose of preparing this EA was to determine if the impacts of the proposed action are significant enough to warrant the preparation of an environmental impact statement.

2.0 Identification of Agencies

2.1 Proposing Agency

The Kamole Weir WTP project is an agency action as defined in the State of Hawaii Office of Environmental Quality *A Guidebook for the Hawaii State Environmental Review Process* (August, 1992). The proposing agency is the Board of Water Supply (BWS), County of Maui.

2.2 Approving Agency

Since the proposed project is an agency action, the Notice of Determination will be issued by the proposing agency, the Board of Water Supply, County of Maui.

2.3 Agencies Consulted

The following agencies and organizations were consulted during project planning and EA document preparation:

State of Hawaii
Department of Health (DOH)
Safe Drinking Water Branch
Clean Water Branch

County of Maui
Board of Water Supply

Private and Community Organizations
Memtec American Corporation, Memcor Division

3.0 Need for Proposed Action

The Kamole Weir WTF serves a critical role in the Makawao Water System. The treatment plant primarily serves the communities of Makawao, Pukalani, Haiku, Kokomo, Kuiaha, Kaupakulua, Peahi, and Haliimaile. It also serves as a supplemental source for the entire upcountry system during times of drought.

The existing Kamole Weir WTF receives raw water from an intake at the Kamole Weir Forebay, which is an extension of Wailoa Ditch. Water is currently treated by chemical coagulation and direct filtration prior to distribution to the Makawao public water system.

However, due to the recent changes in the Federal Standards, the Kamole Weir WTF treatment process is no longer acceptable. The newly promulgated Surface Water Treatment Rule (SWTR) ratified by the Environmental Protection Agency (EPA) requires additional treatment steps which are currently not available at the Kamole Weir WTF.

The record from the Kamole Weir WTF describes a wide variation in the raw water turbidity where a maximum value of 400 NTU has been recorded in one instance. Raw water turbidity exceeds the 14 NTU- limit of SWTR at least 17 percent of the time. Moreover, finished water turbidity from the existing treatment process exceeded the 0.5 NTU limit (under the new SWTR) more than the 32 percent of the time allowable limit. This therefore renders the

existing Kamole direct filtration process unacceptable. Per SWTR, upgrading the existing facility to a conventional treatment process would enable meeting the criteria of the new regulations. This upgrade would include, as a minimum, the addition of a sedimentation step. This step would require the construction of sedimentation basins large enough to accommodate the 5 MGD capacity of the existing filters.

The SWTR also allowed the implementation of alternate technologies. These technologies would be required to demonstrate their acceptability through pilot studies or their acceptance by the EPA.

The Board of Water Supply (BWS) decided on pilot testing and securing approvals to implement the use of microfiltration technology. Although higher in capital costs, it was determined that the advantages associated with the system far out weighed and justified the higher initial cost.

4.0 Technical Description of Proposed Action

4.1 Project Location

The subject property is identified as an approximately 2.4-acre portion of Tax Map Key (TMK) 2-5-04: 80, which is located within the Makawao district of Maui County and also within the State Land Use Agriculture District. Project location maps are shown in Figures 1 and 2. The property area includes a Direct Filtration Facility. Existing site features include a raw water screening structure, flow control valve, flocculation tanks, dual media filters, chemical building, administration/lab building, sludge lagoons, recycle pumps, clear well, and a high-lift pumping station.

The landowner of the TMK parcel is identified as the Maui County. The proposed project will be conducted within the existing site.

4.2 Overview of Proposed Facility

The proposed Kamole Weir Water Treatment Facility will comply with the SWTR and provide additional potable water capacity to the Makawao water system. The proposed facility schematic is presented in Figure 3. The existing treatment process units will serve as is with the exception of flocculation tanks which will be altered and the dual media filters which will be replaced with new microfiltration technology. A new flow meter and flow control valve will be provided to regulate flow from the Forebay to the water treatment system. The existing flocculation tanks will be converted into a wet well for the new raw water pumps.

Water will be pumped from the converted flocculation tank to the new microfiltration system where it will be treated. Filtered water will be disinfected by chlorine and conveyed by gravity to the existing 300,000 gallon clearwell.

The existing distribution pumps lift the treated water from the clearwell directly to the Pookela tank which is in a higher grid system. From the Pookela facility, water is distributed to the Makawao system. During times of drought, Kamole Weir source water can be pumped to the Lower and Upper Kula systems for both domestic and agricultural use.

4.3 Proposed Modification of the Existing Facility

The existing WTP is required by law to be upgraded to enable the facility to be in compliance with the SWTR. DWS is also planning to increase its capacity from 5 MGD to 7 MGD to meet the growing water demands of the Upcountry system. Microfiltration technology will replace the existing dual media filter system and all filter related units; backwash water tank, waste holding tank, and backwash water pumps will be abandoned. The existing flocculation tanks will be converted into a wet well for the microfiltration raw water pumps.

4.4 Proposed Feed Pumping station

The raw water pumping station will consist of three centrifugal pumps. These pumps will transfer water from the existing flocculation tanks to the microfiltration facility. Two pumps

together will provide a 7 MGD capacity. The third pump will serve as a stand by. All three pumps will be driven by variable frequency drivers and run alternately.

4.5 Proposed Water Treatment System

The treatment of raw water will incorporate the use of microfiltration technology. Eight M10C modular Memcor® Continuous Microfiltration (CMF) units will be housed in a building adjacent to the flocculation tank as shown in Figure 3. The CMF units house hollow fiber membranes which physically strain suspended solids, biomass, and microorganisms from the raw water through 0.2 micron openings in the membrane fiber. The eight CMF modules have a combined maximum capacity of 7.0 MGD which will replace the existing direct filtration facility. However, under Ten State Standards, the requirement of one unit down with one unit in the backwash mode reduces the M10C rating for the 8 units to 5.8 MGD at the DOH approved flux rate of 0.5 gpm/sq.m. The rated capacity can be increased to the 7 MGD design capacity once adequate data has been obtained and submitted to the DOH ensuring that no quality compromise will occure at the higher flux rate.

The CMF hollow fiber filters require periodic physical and chemical cleaning due to the accumulation of solids. The physical cleaning process, commonly referred to as backwashing, consists of flushing solids from the membrane surface via the introduction of reverse flow compressed air and raw water. The air loosened solids are flushed with raw water and delivered to the settling lagoons. This process requires no chemical addition, and backwash stream consists of raw water and solids captured on the membrane during filtration. The design will also enable the recycle of backwashed water from the lagoons to the head of the facility. This will provide an additional source water during emergency periods of drought. Normal operation will allow backwash water to be directed to the existing lagoons where it will be settled and either percolated or returned to the Hamakua Ditch for irrigation.

Normal operation and maintenance also includes a chemical filter-cleaning process which is undertaken every four to six weeks (estimated). The process consists of washing the filter membranes with a 2% sodium hydroxide solution and a citric acid solution. Following the chemical cleaning process, the filter membranes are washed with water, blown with air, and the wash water is directed into the four existing lagoons which have a combined volume of

over 100,000 gallons. The relative weakness of the solution complimented with the large volume of the water in the lagoon, the impact of the chemical residual is negligible. The solutions can typically be recycled several times before fresh solutions are required. Between cleaning intervals, the cleaning solution will be stored in a Clean-in-Place (CIP) storage tank. Spent cleaning solution will be pH neutralized and hauled to the wastewater treatment facility. Chemical handling and storage rooms with emergency eye wash and showers will have selector floor drains which will normally be closed until manually discharged to the existing lagoons.

4.6 Cost of Proposed Action

The proposed action includes the use of Board of Water, County of Maui funds. The total construction cost is estimated at $ 8 million.

5.0 Summary of Affected Environment

5.1 Land Use

The subject property is zoned for agricultural and rural uses. There are no agricultural subclassifications. The land is currently owned by the Maui County and used as water treatment plant. All the improvements will be performed within the existing treatment plant property.

5.2 Water Bodies

The raw water source for Kamole Weir WTF is the Wailoa Ditch which spans 17 miles and collects runoff from slopes of Mount Haleakala. The tributary area for the intake to Kamole Weir spans about 10 miles. Hydraulic flow measurements in the ditch indicate that the average flow is 110 MGD and the lowest on record is 1.16 MGD. It is the most reliable source in the Upcountry Maui system however, it too is vulnerable to drought conditions.

The proposed Kamole Weir Water Treatment Facility will be able to accommodate varying flow conditions of the ditch. Due to its designed flexibility, the capacity of proposed

microfiltration facility can be varied as needed without compromising the process performance. At times of high turbidity flows, the facility can be taken completely off line. Although such occurrence are infrequent and most likely to occur during the flood situations (quantity of water not critical), high turbidity spikes generally persist for only a short duration. Should additional flow be required during the occurrence of the Kamole high turbidity down time, water can be drawn from the Lower and Upper Kula systems.

An estimated 140,000 gallons per day of clarified water will be discharged from the settled solids lagoons to Hamakua Ditch, which is owned and operated by Hawaiian Commercial & Sugar Company. Waters in this ditch are totally consumed agriculturally and therefore discharge from the plant to the ditch does not appear to impact state waters.

5.3 Water Distribution System

The Kamole Weir facilities are part of the Makawao water system. The 1990 Maui County Water Use and Development Plan, which conforms with the State Water Code (HRS Chapter 174C), states that the demand for domestic water in the Makawao district will increase as residential growth continues.

The population center of the Makawao water system is Makawao town located approximately 2 miles southeast of the proposed project site. The proposed project will increase the potable water production capacity within the Makawao Water System by 2 million gallon per day (MGD).

5.4 Topography

The project site is located in the Makawao district of Upcountry Maui (Figure 1) and surrounded by pineapple field. Site elevation is approximately 1100 feet above mean sea level (MSL). The topography at or near the site changes undulatorily. Wailoa Ditch delivers raw water directly to the existing facility.

5.5 Geology and Soils

The soil at the proposed treatment site is classified as a Hamakuapoko silt clay (H1B an H1C). The soil is developed from volcanic ash and material weathered from basic igneous rocks. The soils are well-drained, the runoff is slow to medium, and the erosion hazard is slight to moderate.

5.6 Climate

Median annual rainfall is approximately 50 inches. Estimated rainfall for wet and dry seasons are 7 and 3 inches per month respectively. Average annual temperature is approximately 71 degrees Fahrenheit. Northeasterly winds persist throughout much of the year.

5.7 Archaeological Resources

The proposed action will be conducted within the existing facility site. No known historic sites are located within the subject property boundaries.

5.8 Biological Resources

Except for the pineapple field surrounding the existing facility, the property is actively used as a water treatment plant. No threatened or endangered species habitat is located on the subject property. Native species are rarely found in the region.

5.9 Infrastructure

The proposed site is accessed via a dirt road which connects the existing facilities to Baldwin Avenue. Electrical power and telephone communication lines are available within the subject area.

6.0 Environmental Characteristics and Major Impacts of Proposed Action

6.1 Surface Water Quality

The raw water to the Kamole Facility is received from the Kamole Weir Forebay which is an extension of the Wailoa Ditch. It provides the BWS with first right to the waters. This intake point will not be altered. Hydraulic flow measurements indicate that the ditch has an average flow of 110 MGD with the lowest recorded flow of 1.16 MGD. The new treatment process will be able to adjust to conditions of low flow, and shut down during periods of high turbidity. Turbidity meters and a particle counter will be provided to monitor water quality.

Approximately 140,000 gallons per day of clarified backwash water may flow from the settled solids lagoons to Hamakua Ditch. This ditch is owned by Hawaiian Commercial & Sugar Co. and is a continuation of the water not captured by the Kamole Weir intake at the Forebay. No chemicals are added during the treatment process which provides for chemical-free backwash water.

6.2 Solids Management

Solids captured on the bottom of the backwash water settling lagoons will be periodically removed. These solids consist primarily of dirt, organic silt, algae and other organisms commonly found in surface waters. Since the solids removed by the process is physically concentrated and no addition of chemicals is required, no adverse environmental impact is expected. Recovered solids can be applied to permissible agriculture land, used as unclassified fill, or disposed of in a regional landfill.

6.3 Grading and Drainage

The proposed project will develop two major units; the microfiltration building and the raw feed water pumping station. These actions may involve modifications to the existing roads on site along with some altering of the existing grades and modifications to the existing structures. The prevention actions that will be taken to address these on site construction impacts during and after the construction include the following:

- During construction
  Temporary erosion control structures (silt fence, swale, etc.).

- Post Construction
  All slopes and exposed areas will be sodded or planted once final grades have been established. All runoff waters is currently and continue to flow into Chute Ditch where is utilized as irrigation waters for the surrounding pineapple fields.

7.0 Mitigation Measures

7.1 NPDES Permit Requirements

The lagoons discharge to the Hamakua Ditch which is owned and operated by the Hawaiian Commercial and Sugar Company. Water in this ditch is totally consumed agriculturally and therefore there is no discharge into State waters. In the event of any overflow from the facility to the ditch, an NPDES permit will not be required, pursuant to Section 402 of the Clean Water Act, Chapter 342 D, Hawaii Revised Statutes, and Chapter 11-55, Hawaii Administrative Rules, Department of Health.

7.2 Solids Management Considerations

Disposal of solids on agricultural land may have beneficial impacts and will be encouraged. Landfill disposal requirement is also an option in solids management.

7.3 Engineering and Construction Measures

The proposed project will be designed to minimize disturbance to the existing topography. Existing grades will be utilized to convey water through the facility by way of gravity flow.

Standard stormwater and sediment control measures (e.g. silt fences, detention ponds) will be implemented during the construction phase of the project as required. Since the project site is

less than five acres and runoff does not influence any state waters, a NPDES stormwater construction permit will not be required. There are no residences or other sensitive receptors located near the project site.

8.0 Alternatives to the Proposed Action

8.1 No Project

The construction of Kamole Weir Water Treatment Facility will improve the effluent water quality and increase potable water production within the Makawao water system. Basically, the existing facility does not comply with the minimum turbidity requirements set forth in the SWTR. The continued distribution of water treated by the existing facility would be a violation under the new regulations. The increase in treatment capacity of the WTF is required to meet the growing potable demand of the Makawao service area (1990 Maui County WUDP). For these reasons, the proposed action is necessary.

8.2 Alternate Site

The proposed site is located on land owned by the County of Maui. The proposed project location utilizes existing developed raw water source, a conveyance pipeline, treatment facilities, and distribution system. The proposed site is remote from residences and other sensitive receptors. The search for a suitable alternate site would require time to site a new facility, time to procure funding to cover the cost in the development of infrastructure, and time to enable the purchase of land. Also the approval of numerous agencies is required. The Maui Board of Water Supply is under a strict compliance order to upgrade the Kamole facility to the SDW standards by 1998. The utilization of the existing facilities is the most cost effective and expedient alternative.

8.3 Alternate Technology

Based on the SWTR requirements, the existing facility is required to be in compliance by 1998. A number of alternate technologies are currently available and include a wide variety of

solutions to enable compliance. Microfiltration technology was chosen due to the following considerations:

- Suspended solids, biomass and microorganisms are removed from the influent water without the use of coagulation chemicals. Coagulation chemicals can restrict the settled solids disposal options.

- Expected raw water quality falls within the effective treatability of microfiltration.

- Pilot studies have been conducted at water treatment plants in Lahaina, Kamole and Awalau. Microfiltration effectively provided treatment of water to the standards of the State Department of Health and met the minimum criteria specified in the SWTR.

- Microfiltration units are modular and can be transplanted to another facility, if necessary.

- Less land area is required in comparison to other treatment alternatives specified in the SWTR.

- Less operator attention is required. The proposed microfiltration facility will be manned on a part time basis. A shortage of qualified and certified operators exists in the State of Hawaii. The anticipated lower need for operator attention is another advantage to the system.

9.0 Determination

In accordance with Title II, Chapter 200, Environmental Impact Statement Rules, this environmental assessment has characterized the technical and environmental nature of the project, identified potential impacts, and evaluated the potential significance of these impacts.

It is determined that the proposed Kamole Weir Water Treatment Facility project will not significantly impact the environment. Therefore, a Negative Declaration has been issued for this project. This determination is based on the significance criteria listed in §11-200-12 of the Environmental Impact Statement Rules. Specifically, these significance criteria are addressed below:

1. The proposed project will not result in an adverse commitment, loss, or destruction of any natural or cultural resources.

2. The range of beneficial uses of the environment will not be curtailed. The proposed project will not curtail the use of the surrounding environment as pineapple field.

3. The project will not conflict with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court orders or executive orders.

4. The proposed project will not adversely affect the economic or social welfare of the community or state. The project will improve the social welfare of the community by providing public drinking water in conformance with the SWTR.

5. The project will not adversely affect public health. The project will improve public health by enhancing the flexibility and reliability of the Makawao water system.

6. The project will not involve substantial adverse secondary impacts, such as population changes or effects on public facilities. The proposed project will upgrade existing public facilities.

7. The project will not change any policy concerning the issuing of additional water meters. The additional water policy remains intact since this project does not provide any increase in the source capacity.

8. The project will not involve a substantial degradation of environmental quality.

9. The project will not include cumulative considerable effect upon the environment nor involves a commitment for larger actions. The proposed actions are complete and will require no further action.

10. The project will not substantially affect a rare, threatened or endangered species , or its habitat.

11. The project will not detrimentally affect air or water quality or ambient noise levels. Short-term impacts will occur during the construction phase. Treatment of backwash water and settled solids will be in a manner approved by the Hawaii Department of Health.

12. The project will not affect an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

13. The project will affect scenic vistas and viewplanes.

14. The project will not require substantial energy consumption.

10.0 References

ECM, Inc., 1991, Lower Kula Water Treatment Plan Environmental Assessment and Negative Declaration.

Hawaii Department of Health, Safe Drinking Water Branch, 1994 (revised), Surface Water Treatment Plant, Administrative Manual.

Hawaii Department of Health, Safe Drinking Water Branch, 1994 (revised), Hawaii Administrative Rules, § 11-20, Rules Relating to Potable Water System.

Hawaii Department of Taxation, Tax Map for Second Division, Zone 2, Section 5, Plat 4, Parcel 80.

M & E Pacific, Inc., 1993, Preliminary Engineering Report for Kamole Weir Water Treatment Plant.

M & E Pacific, Inc., December 1991, Water Use and Development Plan for the Island of Maui prepared for Department of Water Supply, County of Maui.

Memtec American Corporation, Memcor Division, 1994, Memcor Continuous Microfiltration Technology for Surface Water and Groundwater Under the Influence.

United States Department of Agriculture Soil Conservation Service, 1972, Island of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.

U.S. Geological Survey, 1957, Topographic Map of Maui, Hawaii, Scale 1: 24,000.

Figures

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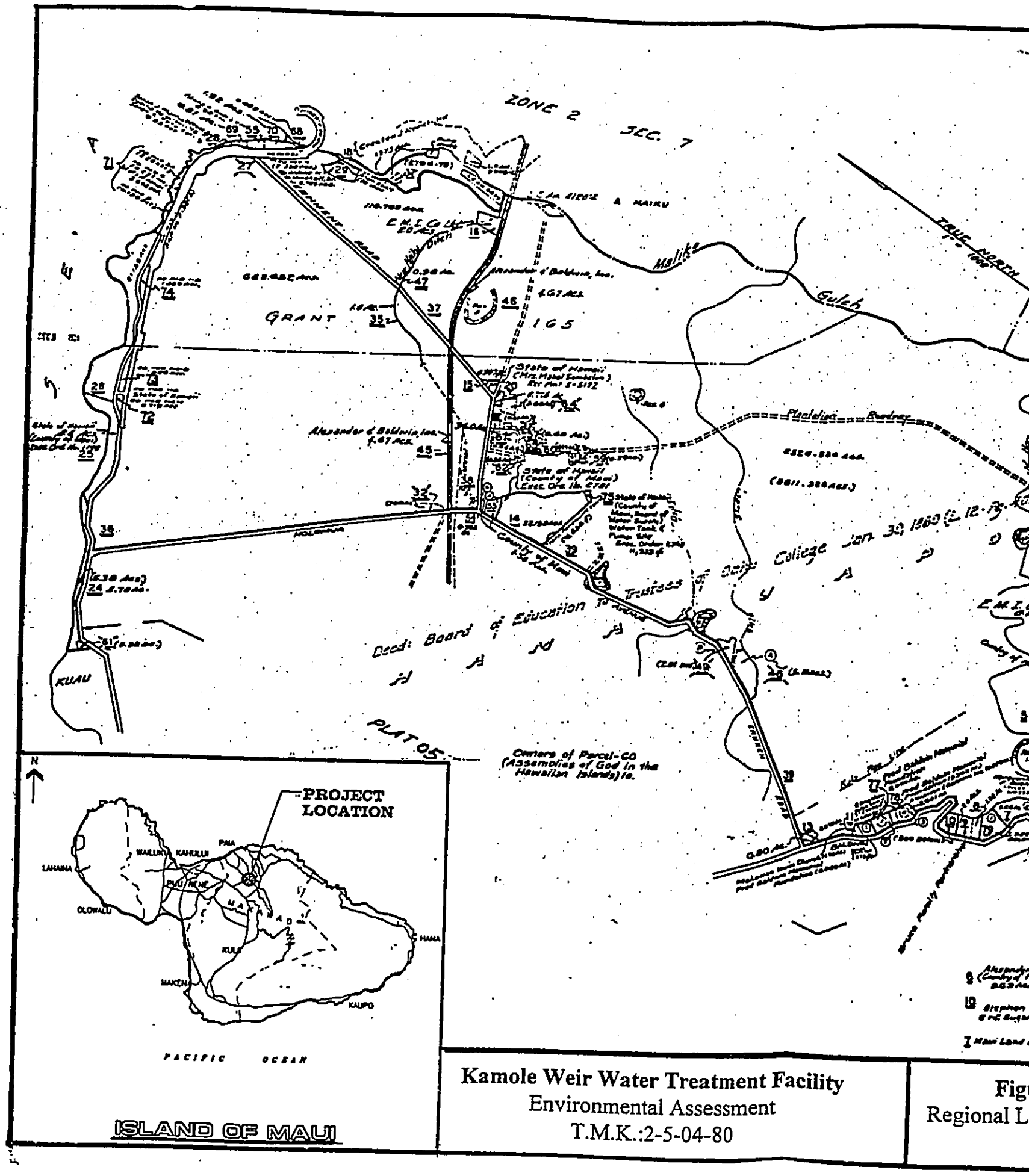

Kamole Weir Water Treatment Facility
Environmental Assessment
T.M.K.:2-5-04-80

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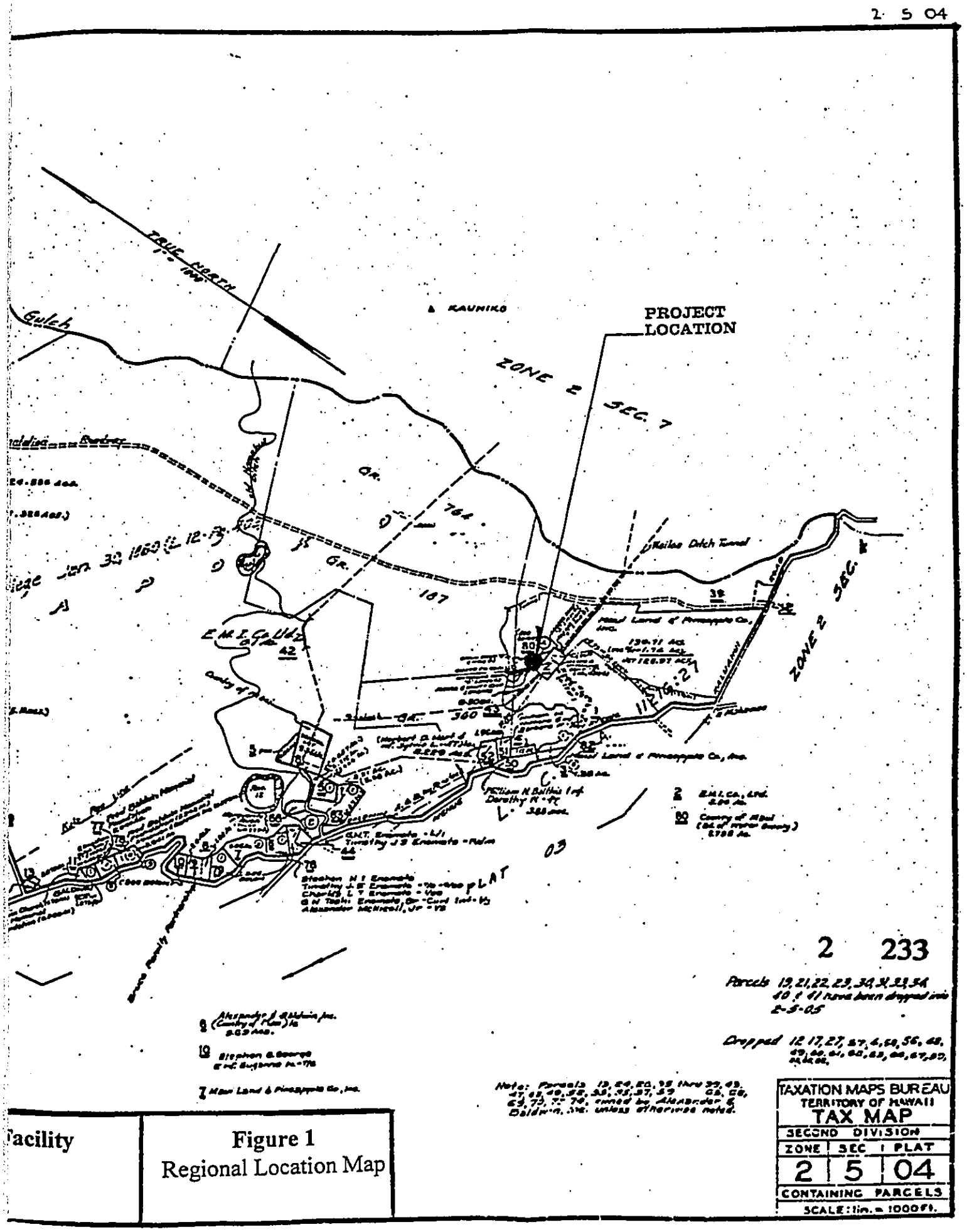

Facility	**Figure 1** Regional Location Map

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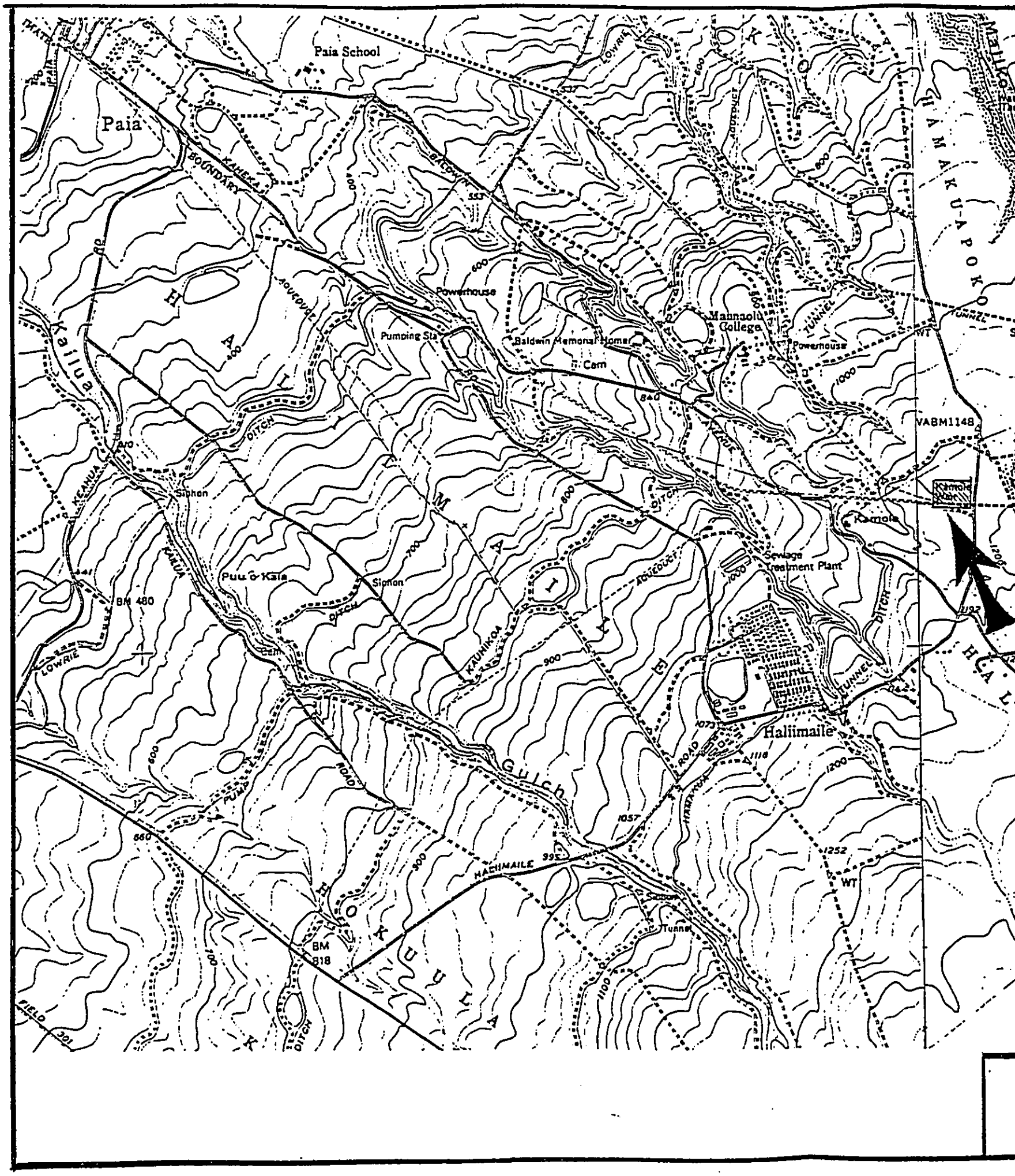

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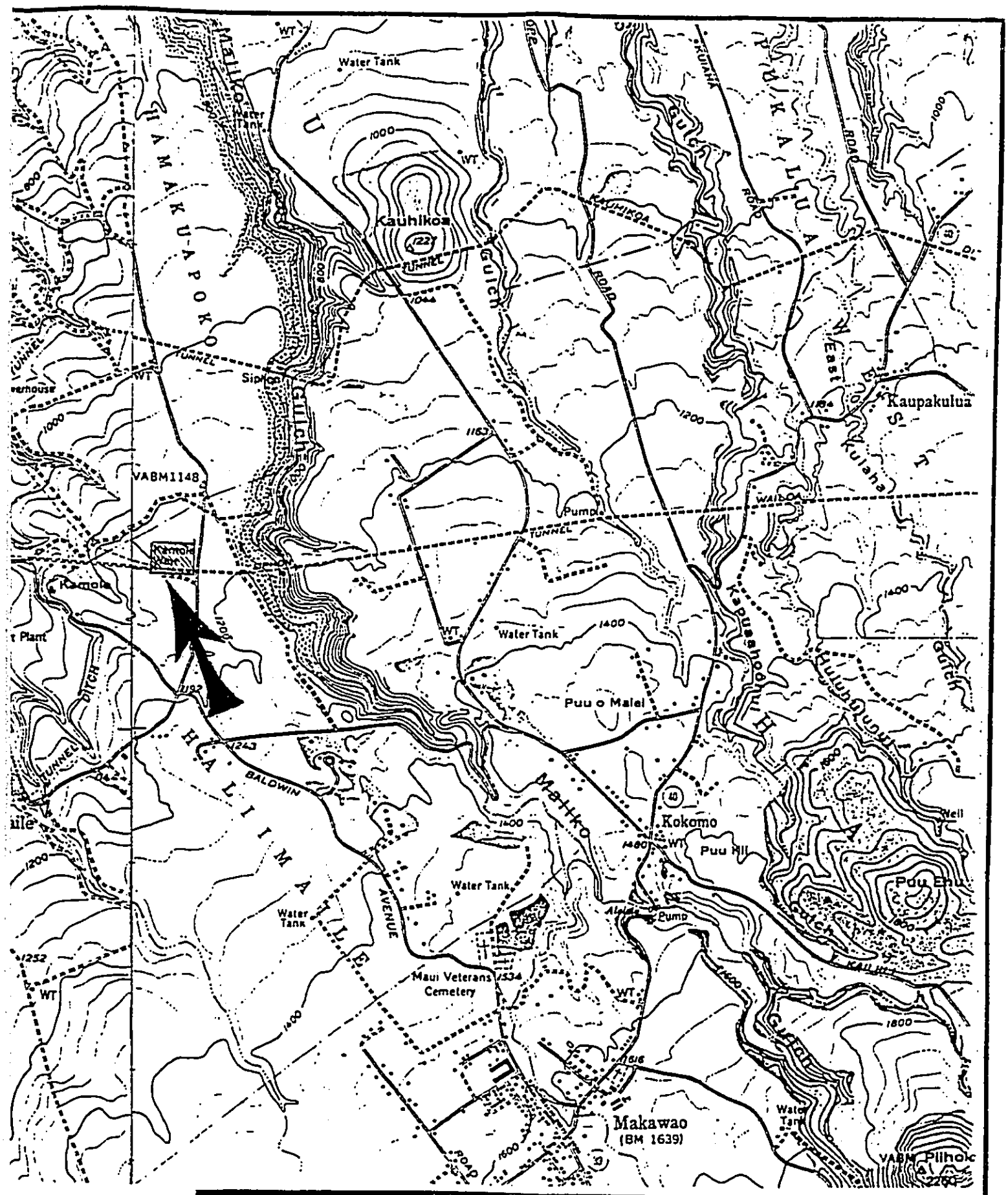
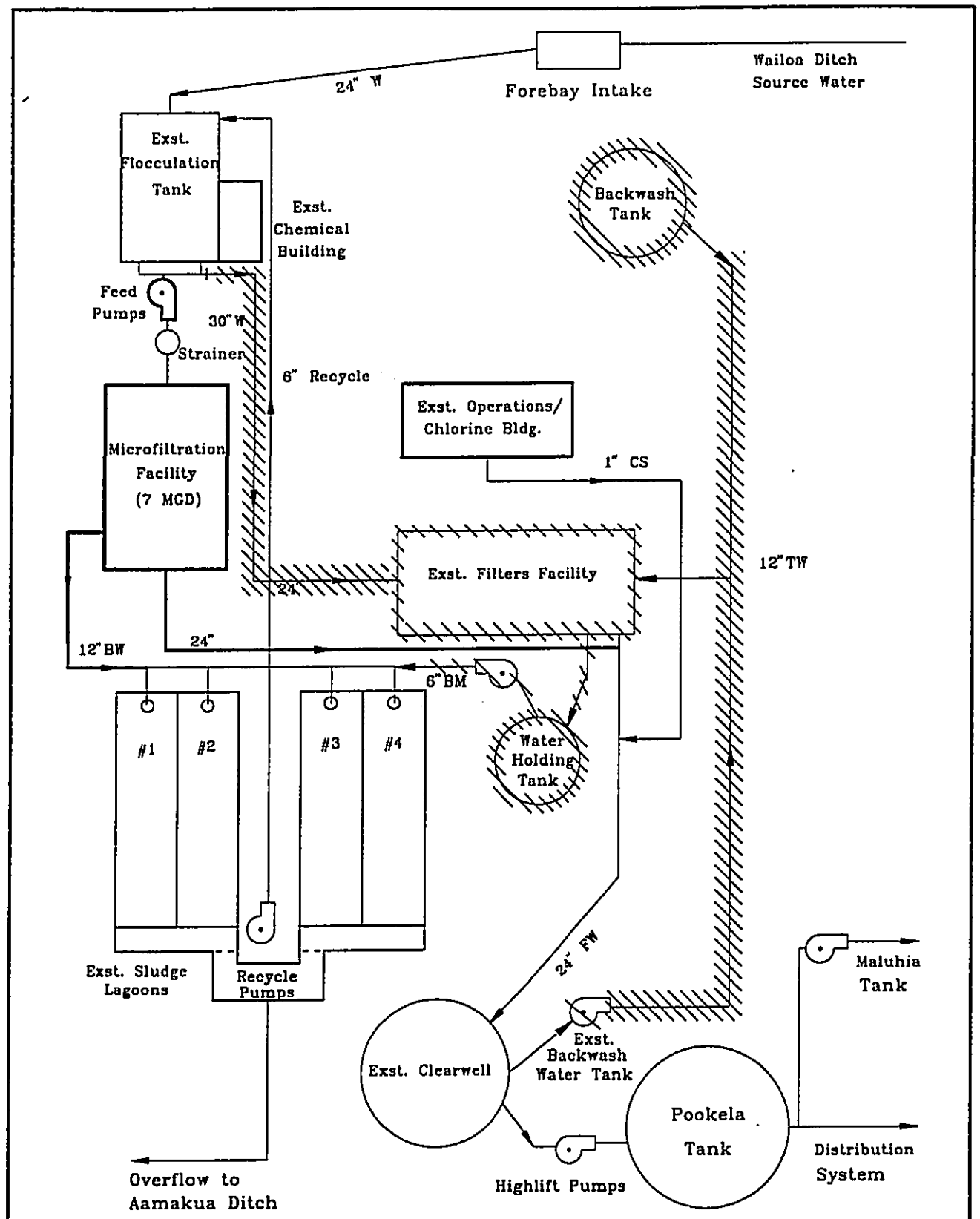


Kamole Weir Water Treatment Facility Environmental Assessment T.M.K.:2-5-04-80	**Figure 2** Tax Map Key Location Map



Kamole Weir Water Treatment Facility Environmetal Assessment T.M.K.:2-5-04-80	Figure 3 Facility Schematic

Comments from Consulted Parties

0695059

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT
LAND USE AND CODES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

August 10, 1995

MEMO TO: David R. Craddick, Board of Water Supply Director

F R O M: Charles Jencks, Public Works & Waste Management Director

SUBJECT: Draft Environmental Assessment
KAMOLE WEIR WATER TREATMENT FACILITY
TMK: (2)2-5-004:080

We reviewed the subject draft envrionmental assessment and have the following comments:

1. Comments from the Engineering Division:

   a. The Environmental Assessment must address the impacts of the proposed improvements "prior to" and "after" construction.

   The applicant is requested to contact the Engineering Division at 243-7745 for additional information.

2. Comments from the Wastewater Reclamation Division:

   This division has reviewed this submittal and has no comments at this time.

3. Comments from the Land Use and Codes Administration:

   This division has reviewed this submittal and has no comments at this time.

da
xc: Engineering Division
Wastewater Reclamation Division
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BOARD OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109

March 7, 1996

Mr. Charles Jencks, Director
County of Maui
Department of Public Works & Waste Management
200 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Jencks:

Subject: KAMOLE WEIR WATER TREATMENT FACILITY
Environmental Assessment
Tax Map Key: 2-5-04:80

Thank you for your comments on the draft Environmental Assessment for the above referenced project.

In regards to your comment on the impacts of the proposed construction, the draft Environmental Assessment has been modified to address the prevention actions on site construction impacts during and after the construction. The EA has been modified in Section 6.3 to read as follows:

* During Construction
Temporary erosion control structures (silt fence, swale, etc.)

* Post Construction
all slopes and exposed areas will be sodded or planted once final grades have been established. All runoff water is currently and will continue to flow into Chute Ditch where it is utilized as irrigation waters for the surrounding pineapple field.

The BWS has determined that implementation of this project will not have significant environmental effects. Therefore, the agency is issuing a negative declaration. The final

environmental assessment and negative declaration will be published in the April 8, 1996 OEQC Bulletin. If you have any questions, please contact Mr. Herb Kogasaka at (808) 243-7835.

Sincerely,

David R. Craddick
Director

/HK:sc

cc: James Okazaki

0895008

BENJAMIN J. CAYETANO
GOVERNOR
SEIJI F. NAYA
DIRECTOR
RICK EGGED
DEPUTY DIRECTOR

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

Central Pacific Plaza, 220 South King Street, 11th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 586-2355
Fax: (808) 586-2377

July 31, 1995

MEMORANDUM

TO: Mr. David R. Craddick
Director
Board of Water Supply

FROM: Shelley M. Mark
Senior Advisor to Director

SUBJECT: Draft Environmental Assessment for Kamole Weir Water Treatment Facility

The State Land Use Commission has prepared the attached comments regarding the subject project.

Thank you for allowing us to comment.

Enclosure

BENJAMIN J. CAYETANO
GOVERNOR

ESTHER UEDA
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 104, Old Federal Building
335 Merchant Street
Honolulu, Hawaii 96813
Telephone: 587-3822

July 10, 1995

SUBJECT: Director's Referral No. 95-077-I
Draft Environmental Assessment (EA) for Kamole Weir Water Treatment Facility, Makawao, Maui, Hawaii

We have reviewed the subject draft EA and would like to note that the project site as shown on figure 2 appears to be located within the State Land Use Agricultural District.

We have no other comments to offer at this time.

EU:ky

BOARD OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109

March 7, 1996

Shelley M. Mark, Senior Advisor to Director
State of Hawaii
Department of Business, Economic Development & Tourism
P.O. Box 2359
Honolulu, Hawaii 96813

Dear Ms. Mark:

Subject: KAMOLE WEIR WATER TREATMENT FACILITY
Environmental Assessment
Tax Map Key: 2-5-04:80

Thank you for your comments on the draft Environmental Assessment for the above referenced project. The project site is identified to be located within the State Land Use Agriculture District. This has been modified in section 4.1.

The BWS has determined that implementation of this project will not have significant environmental effects. Therefore, the agency is issuing a negative declaration. The final environmental assessment and negative declaration will be published in the April 8, 1996 OEQC Bulletin. If you have any questions, please contact Mr. Herb Kogasaka at (808) 243-7835.

Sincerely,

David R. Craddick
Director

/HK:sc

cc: James Okazaki, M&E Pacific

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIIKE
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:

July 20, 1995 95-109/epo

Mr. David R. Craddick
Director, Board Water Supply
County of Maui
P. O. Box 1109
Wailuku, Maui, Hawaii 96793-109

Dear Mr. Craddick:

Subject: Draft Environmental Assessment

Kamole Weir Water Treatment Facility
Makawao, Maui
TMK: 2-5-04: 80

Thank you for allowing us to review and comment on the subject document. We have the following comments to offer:

Safe Drinking Water

1. Section 3.0, "Need for Proposed Action," on page 3 contains an error. The Surface Water Treatment Rule has set the turbidity limit for direct filtration treatment at 0.5 NTU.

2. Section 4.5, "Proposed Water Treatment System," on page 5 fails to adequately describe the operation of the microfiltration system. Figure 3, Facility Schematic, indicates that waste backwash water will be recycled back into the plant influent. However, this important fact was not mentioned at all in section 4.5.

   The Department of Water Supply must exercise a great deal of caution as the recycling of waste backwash is a suspected cause in the presence of giardia lamblia and cryptosporidium in many water treatment plants. It is very likely that special operating conditions and monitoring requirements will be imposed on the recycling of waste flows into the plant influent.

3. Assuming that the Memcor M10C continuous microfiltration units will be operated in the same manner as the Lahaina Water Treatment Plant, section 4.5, also fails to note that residual cleaning solution (sodium hydroxide, citric acid,

and surfactant) will be rinsed into the existing sludge lagoons where it can be recycled into the plant influent or discharged into Hamakua Ditch.

4. Finally, the environmental assessment incorrectly states that the eight M10C modular continuous microfiltration units will have a combined capacity of 7.0 MGD. While the Department of Health approved of the Memcor M10C as alternate filtration technology for Kamole Weir (April 11, 1995 Department of Health letter from William Wong, Chief, Safe Drinking Water Branch, to David Craddick, Director Maui Department of Water Supply), the maximum daily flow was set at 5.8 MGD (based on the maximum flux rate of 0.5 gallons per minute per square meter).

If you should have any questions regarding this matter, please contact Mr. Stuart Yamada of the Safe Drinking Water Branch at 586-4258.

Sincerely,

LAWRENCE MIIKE
Director of Health

c: SDWB
MDHO

BOARD OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109

March 7, 1996

Dr. Lawrence Miike, Director
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Dr. Mike:

Subject: KAMOLE WEIR WATER TREATMENT FACILITY
Environmental Assessment
Tax Map Key: 2-5-04:080

Thank you for your comments on the draft Environmental Assessment for the above referenced project. The draft Environmental Assessment has been modified to incorporate all of the comments provided by the Department. These modifications are as follows:

* Comment 1. Concur, text has been revised to read 0.5 NT.

* Comment 2. Text has been revised, please see attached section 4.5.

* Comment 3. See attached section 4.5.

* Comment 4. Concur, at this point in time DOH has approved operation of the facility at 5.8 M.D. (based on maximum flux rate of 0.5gpm/m). However, capacity of the facility may increase pending operational data review. See attached section 4.5.

The BWS has determined that implementation of this project will not have significant environmental effects. Therefore, the agency is issuing a negative declaration. The final environmental assessment and negative declaration will be published in the April 8, 1996

OEQC Bulletin. If you have any questions, please contact Mr. Herb Kogasaka at (808) 243-7835.

Sincerely,

David R. Craddick
Director

/HK:sc
Attachment
xc: James Okazaki, M&E Pacific

BENJAMIN J. CAYETANO
Governor of Hawaii

0095065

Chairperson
MICHAEL D. WILSON
Board of Land and Natural Resources

Deputy Director
GILBERT COLOMA-AGARAN

Aquaculture Development
Aquatic Resources
Boating and Ocean Recreation
Bureau of Conveyances
Conservation and Environmental Affairs
Conservation and Resources Enforcement
Forestry and Wildlife
Historic Preservation
Land Management
State Parks
Water and Land Development

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

REF:OCEA:KRM

P. O. Box 621
Honolulu, Hawaii 96809

File No.: 95-629

The Honorable David R. Craddick, Director
Board of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui 96793-7109

AUG 14 1995

Dear Mr. Craddick:

SUBJECT: Draft Environmental Assessment (DEA): Kamole Weir Water Treatment Facility, Kamole, Makawao, Maui, TMK: 2-5-04: 80

We have reviewed the DEA for the subject project transmitted by your letter dated June 23, 1995, and offer the following:

Commission on Water Resource Management

The Commission on Water Resource Management's (CWRM) staff comments that in general, CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible and there are no harmful effects to the ecosystem. CWRM also encourages the protection of watershed lands which are important for the maintenance of streams and the replenishment of aquifers.

CWRM also recommends coordination with the County of Maui to incorporate this project into the County's Water Use and Development Plans.

If the proposed project diverts additional water from streams or if new or modified stream diversions are planned, the project may need to obtain a Stream Diversion Works Permit and petition to amend the interim instream flow standard for the affected stream.

CWRM notes that the Department of Water Supply should provide a detailed description of how the treatment plant capacity will be increased and whether there will be any proposed modifications to stream diversion structures.

We have no other comments to offer at this time. Thank you for the opportunity to comment on this matter.

Please feel free to call Steve Tagawa of our Office of Conservation and Environmental Affairs at 587-0377, should you have any questions.

Aloha,

Gilbert S. Coloma-Agaran
for MICHAEL D. WILSON

BOARD OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109

March 7, 1996

Mr. Michael D. Wilson
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: KAMOLE WEIR WATER TREATMENT FACILITY
Environmental Assessment
Tax Map Key 2-5-04:080

Thank you for your comments on the draft Environmental Assessment for the above referred project.

In regards to your comment on the diversion of additional raw waters, capacity and modification to stream diversion structure, we offer the following:

- No new source waters will be diverted from any stream or other natural water way. The proposed facility will continue to utilize allocated waters from the Wailoa ditch. Therefore, it is our understanding that a Stream Diversion Works Permit and petition to amend will not be requested.

- Treatment capacity will initially be set at 5.8 MGD however design is capable of increasing production to 7 MGD pending DOH approval based on operational data and departmental review.

- No modification will be made to the facility intake (forebay) structure.

The BWS has determined that implementation of this project will not have significant environmental effects. Therefore, the agency is issuing a negative declaration. The final

environmental assessment and negative declaration will be published in the April 8, 1996 OEQC Bulletin. If you have any questions, please contact Mr. Herb Kogasaka at (808) 243-7835.

Sincerely,

David R. Craddick
Director

/HK:sc

cc: James Okazaki, M&E Pacific