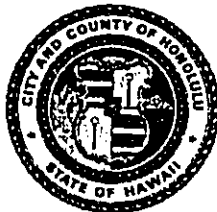


DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498

FRANK F. FASI
MAYOR



December 4, 1992

RECEIVED

E. JAMES TURSE
DIRECTOR

'92 DEC -7 110:45

GAIL M. KAITO
DEPUTY DIRECTOR

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

Mr. Brian J. J. Choy, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Choy:

Subject: Negative Declaration for West Loch Caprock Wells Project
Tax Map Key: 9-1-17: 04, Ewa, Oahu, Hawaii

The Department of Housing and Community Development (DHCD) has reviewed the comments received during the 30-day public comment period which began on October 23, 1992, and has addressed those concerns in the Final Environmental Assessment (EA). DHCD has determined that this project will not have a significant environmental effect and has issued a negative declaration. Please publish this notice in the December 23, 1992, OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the final EA.

Please contact Joseph Nose at 527-5324 if you have any questions.

Sincerely,

Gail Kaito
E. JAMES TURSE
Director

Enclosures

1992-12-23-0A-FEA- West Loch Caprock
Wells

DEC 23 1992

FINAL ENVIRONMENTAL ASSESSMENT

FOR

WEST LOCH CAPROCK WELLS

EWA VILLAGES PROJECT, WEST LOCH PROJECT
HONOLIULI, EWA
ISLAND OF OAHU, HAWAII

TAX MAP KEY NO. 9-1-17: 04 PORTION

PREPARED BY:
City and County of Honolulu
Department of Housing and Community Development
Honolulu, Hawaii

November 1992

FINAL ENVIRONMENTAL ASSESSMENT
FOR
WEST LOCH CAPROCK WELLS

Administrative Information

A. Project: West Loch Caprock Wells

B. Type of Action: Applicant
 Agency

Department of Housing and Community Development
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaii 96813
E. James Turse, Director

C. Approving Agencies:

State of Hawaii
Office of Environmental Quality Control (OEQC)
Central Pacific Plaza
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

D. Final Environmental Assessment Prepared by:

Department of Housing and Community Development
November 1992

Proposed Project

The Department of Housing and Community Development (DHCD) proposes to have the Board of Water Supply drill two exploratory caprock wells in Ewa Villages (see Exhibit A).

Should the exploratory wells prove an adequate source of acceptable nonpotable water, and when a water use permit is obtained from the Department of Land and Natural Resources, permanent pumping, storage and transmission facilities will be developed and installed.

The proposed project is part of two on-going DHCD subdivision projects in Ewa: the Ewa Villages Revitalization project and the West Loch (Phases I and II) project. DHCD is retaining the R. M. Towill Corporation to master plan, design, and administer the infrastructure construction of both of these subdivision projects.

Need for Project

The wells are needed to supply nonpotable caprock water to satisfy the substantial landscape irrigation needs of the West Loch and Ewa Villages projects. Both City and State agree that nonpotable water should be used for landscape irrigation whenever possible to reserve potable water for residential use.

The West Loch and Ewa Villages projects' irrigation needs are as follows:

PROJECT/AREA	MILLION GALLONS PER DAY	PROJECT STATUS
West Loch Golf Course	0.86	Existing
West Loch Shoreline Park	0.24	Existing
West Loch Greenbelt	0.20	Existing
West Loch District Park	0.13	Existing
Ewa Villages Golf Course	1.30	Construction in 1993
Ewa Villages Greenbelt	0.24	Construction in 1993
Ewa Mahiko Regional Park	0.15	Construction in 1993
TOTAL IRRIGATION REQUIREMENT	3.12	

At this time, the two caprock wells are expected to supply approximately 2 million gallons of brackish water per day of this total need. Other sources of water will be the existing Ewa Pump Number 2 well and a planned pump to capture leakage at West Loch Golf Course Hole No. 10.

The estimated total acreage to be irrigated is 600 acres.

Community Reaction

The landowner, Campbell Estate, and the lessee, Oahu Sugar Company, were each notified of the proposed project in letters dated June 10, 1992, and were mailed copies of the Draft Environmental Assessment for this project on September 29, 1992. Oahu Sugar Company's response to the September 29, 1992, transmittal is attached in Exhibit C and has been addressed by letter dated November 27, 1992, in Exhibit D, and in Section G, Item No. 1, of this Final Environmental Assessment

Proposed Action

The Department of Housing and Community Development (DHCD) proposes to have the Board of Water Supply drill two exploratory caprock wells in Ewa Villages.

Each temporary drilling site will occupy an area approximately 200 ft. by 200 ft. Drilling will take about six months.

Each permanent pumping facility will occupy 3,000-5,000 square feet. Storage ponds for the pumps' output will be incorporated as water features in the golf course.

Site Data:

Landowner:

The Estate of James Campbell
Ms. Jan Burns
828 Fort Street Mall, Suite 500
Honolulu, Hawaii 96813

The City and County of Honolulu is currently acquiring the Ewa Villages project lands by eminent domain. Pursuant to a court order dated June 26, 1992, and award of possession as of July 9, 1992, the City has possession of the proposed project site, and expects to obtain legal title to the site in August 1993, after obtaining a Final Order of Condemnation.

Lessee:

Oahu Sugar Company

Location:

See attached maps, Exhibit B.

Both wells will be drilled in Oahu Sugar sugar cane fields. The final exact locations of each well are being coordinated between the Board of Water Supply, which will drill the wells, and DHCD's consultant, who is designing the future Ewa Villages Golf Course where the wells will eventually be located. These fields have been harvested.

Currently, the first test well, No. 2102-23, will be located in a cane field, approximately 1000 feet away from the nearest home in Fernandez Village, approximately 1500 feet from the grounds of the Ewa Immaculate Conception Catholic Church, and approximately 1400 feet from the grounds of the Ewa Elementary School.

Currently, the second test well, No. 2002-13, will be located in a cane field, approximately 700 feet from the nearest existing homes in Tenney Village on Uluhui Street and Paaniana Street. The Tenney Center buildings and

athletic fields are closer to the drilling site, but they are abandoned.

District: Ewa

Tax Map Key: 9-1-17: 04 portion

Site Descriptions: The proposed project will be located in Oahu Sugar Company's sugar cane fields.

Future Site Conditions: The two test wells are within the boundaries of the on-going Ewa Villages Revitalization Project. Both wells, should they become permanent, will be located in the Ewa Villages Golf Course (see Exhibit B, Future Site Conditions).

Land Use Data

Zoning: Ag-1

Development Plan Designation: Currently designated "Agriculture" on the Department of General Planning Development Plan Land Use Map for Ewa. Current plans call for an application to redesignate the area "Park/Golf Course" to be submitted in January 1993.

State Land Use District: Urban

Water Management Area: Pearl Harbor Ground Water Control Area (PHGWCA)

Existing Use: Sugar cane cultivation

Surrounding Uses: Oahu Sugar Co.'s sugar cane fields, Fernandez Village, Ewa Immaculate Conception Catholic Church, Ewa Elementary School, residences in Renton Village and Tenney Village, and unused buildings and land.

Proposed Future Use: The Ewa Villages area is being developed by the City and County of Honolulu as a master-planned community containing a golf course, park, shopping area, civic/community facilities, rehabilitated plantation homes, and new affordable and market-priced homes.

Flood Zone: The proposed project is currently located in Zone D - Areas in which flood hazards are

undetermined. Future permanent pumping facilities will also be located Zone D.

Estimated Cost: \$80,000-\$100,000 total for drilling two wells. Bids were opened on August 20, 1992. The low bid was \$79,010.00.

Permanent pumping, storage and transmission facilities are estimated at \$750,000.

Special Management Area: Project does not lie within the Special Management Area.

Alternatives Considered

1. No action.

Taking no action would conflict with current City and State policy to develop available nonpotable water sources for irrigation. Since the Ewa plains are a known source of nonpotable caprock water, DHCD is obliged to explore its use for DHCD irrigation needs in the area.

If no action were taken, West Loch irrigation requirements could be met by existing potable and nonpotable sources, which are currently being strained, and Ewa Villages requirements could possibly be met by requesting reallocations from existing potable wells in the area.

Taking no action is undesirable, since it would require using potable water for nonresidential irrigation. If no action were taken and reallocation of potable or nonpotable water to Ewa Villages were not possible, the future of the irrigation of Ewa Villages might be jeopardized.

2. Other locations for the wells.

The two wells are located away from existing and future residential areas and will be located on the future golf course; however, other golf course sites could be considered.

Caprock wells could be located in other areas of the Ewa Villages project, notably towards the southwestern portion of the project, where the future hookup to the Honouliuli Sewage Treatment Plant may be expected. However, other locations might be further away from the golf course they are intended to serve, further away from the West Loch project, and further away from the golf course water features, which are intended as storage for the nonpotable water.

3. Use of treated effluent from the Honouliuli Wastewater Treatment Plant.

DHCD and other parties are currently investigating use of treated effluent from the Honouliuli Wastewater Treatment Plant to irrigate Ewa Villages, the West Loch project, and other developments in Ewa. Unavailable now, treated effluent is a potentially good future alternative to the proposed use of caprock water.

Accordingly, in anticipation of the eventual availability of this treated effluent, DHCD is designing its irrigation system so that it will be able to draw from both the caprock wells and from the Honouliuli Wastewater Treatment Plant.

At this time, however, DHCD views the use of treated effluent as a future adjunct to, and not a current substitute for, development of the caprock wells as a source of nonpotable irrigation water. DHCD takes this position for two reasons:

- a. The treated effluent is not scheduled to become available until the end of 1996, i.e., when construction of the secondary treatment plant at Honouliuli is complete. By contrast, irrigation needs at the West Loch project are immediate, and the Ewa Villages will need water towards mid-1993.
- b. At this time, insufficient data are available on which to base a valid evaluation of the use of treated effluent:

State Department of Health guidelines for the reuse of wastewater are unavailable at this time.

The eventual cost to the user of treated effluent is unknown at this time.

Data regarding the distribution system for the treated effluent and the time and cost to construct it are unavailable at this time.

Data regarding the administration and management of the treated effluent are unavailable at this time.

The anticipated output of treated effluent from the Honouliuli Sewage Treatment Plant will be approximately 13 million gallons per day. Since there are at least 20 other known users of nonpotable water in the area, future demand for these 13 million gallons of effluent may be significant, and the allocation that would be available to the West Loch and Ewa Villages projects is unknown at this time.

Environmental Assessment Prepared for Compliance with HUD Requirements and Environmental Requirements of Other Levels of Government as follows:

- A. State of Hawaii, Supplemental Form EA-S-SOH
- B. Guam, Supplemental Form EA-S-GUAM
- C. Northern Marianas Islands, Supplemental Form EA-S-NMI
- D. Trust Territories of the Pacific Islands, Form EA-S-TTPI
- E. American Samoa, Supplemental Form EA-S-ASG

Findings and Conclusions from the Draft Environmental Review:

- A. Environmental Findings
 - Finding of No Significant Impact on the Environment (FONSI)
 - An Environmental Impact Statement is required

B. Agencies/Interested Parties Consulted (see Exhibit C)

<u>State</u>	<u>Draft EA Response Date</u>	<u>Final EA Response Date</u>
Department of Land and Natural Resources, Board of Land and Natural Resources	-----	11/05/92
Department of Land and Natural Resources, Historic Preservation Officer	07/08/92	
Department of Land and Natural Resources, Commission on Water Resource Management		10/22/92
<u>City</u>		
Board of Water Supply	08/07/92	10/29/92
Department of Public Works		11/23/92
<u>Other</u>		
The Estate of James Campbell	-----	-----
Oahu Sugar Co., Ltd.		10/09/92
Ewa Neighborhood Board No. 23		-----

- C. Publication Notification
 - 1. Finding of No Significant Impact on the Environment and Request for Release of Funds (Combined Notice)
 - a. Date FONSI/RROF published in local newspaper: Not applicable
 - b. Last day for recipient to receive comments: Not applicable

- c. Last day for HUD to receive comments: Not applicable
- d. Date FONSI transmitted to Federal, State or local governmental agencies or interested groups of individuals: Not applicable
- e. Date HUD released grant conditions: Not applicable

2. Negative Declaration (Hawaii only)

- a. Date Draft Negative Declaration published in OEQC Bulletin: October 23, 1992
- b. Date on which 30-day waiting period expires: November 22, 1992
- c. Date Final Negative Declaration published in OEQC Bulletin: _____
- d. Date on which 30-day waiting period expires: _____
- e. Documentation attached: X Yes No

Impact Categories

The following criteria are used to rate the level of impact the project will have on the various categories:

- 1 - Potentially beneficial impact.
- 2 - No impact anticipated.
- 3 - Minor adverse impacts anticipated.
 - a. Short Term
 - b. Long Term
- 4 - Adverse impact. Requires mitigation.
- 5 - Adverse impact. Requires modification to project/activity.

A. Land Development

1. Conformance with Comprehensive Plans and Zoning

Rating: 1 - Potentially beneficial impact.

Source: Department of General Planning, City and County of Honolulu, General Plan, Objectives and Policies, 1988.
 Board of Water Supply, City and County of Honolulu, Oahu Water Plan, 1982.

Department of Land Utilization, City and County of
Honolulu, Land Use Ordinance.

The proposed project meets the objectives of the General Plan by helping maintain an adequate supply of water for residents and agricultural/industrial needs and by helping develop a secondary urban center in the West Beach-Makakilo area.

The proposed project meets the objectives of the Oahu Water Plan by substituting nonpotable for potable water in landscape irrigation.

The permanent pump, storage, and transmission facilities will be Type A utility installations, which, pursuant to the Land Use Ordinance, are a permitted use in all zoning districts.

2. Compatibility and Urban Impact

Rating: 2 - No impact anticipated.

Source: Ewa Villages Master Plan, R. M. Towill Corporation, August 1992.

Existing Land Use Map

The proposed project will initially be drilled in areas with no neighboring structures to conflict with. The permanent wells, pumping, and storage facilities will be integrated into the future Ewa Villages Golf Course as part of its landscaping and irrigation system.

3. Slope, Erosion and Soil Suitability

Rating: 2 - No impact anticipated.

Source: Donald E. Foote, et al., Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii U. S. Department of Agriculture, Soil Conservation Service, in cooperation with the University of Hawaii Agricultural Experiment Station, August 1972.

According to Foote (p. 43), the area soils are designated "Honouliuli clay 0 to 2 percent slope" and are characterized as

dark reddish-brown, very sticky and very plastic clay throughout. The surface layer is about 15 inches thick. The subsoil and substratum have subangular blocky structure....The soil is neutral to mildly alkaline.

Permeability is moderately slow. Runoff is slow, and the erosion hazard is no more than slight...Workability is slightly difficult because of the very sticky and very plastic clay. The shrink-swell potential is high.

4. Hazards, Nuisances and Site Safety

Rating: 2 - No impact anticipated.

Source: Site Inspection, May 1992.

Flood Insurance Rate Map, Community Panel
Number 15001 0110C, September 28, 1990

Telephone Conversation with Delwin Ching, Engineering
Branch, Board of Water Supply, August 18, 1992.

There is no evidence of unusual topographic features on the project site that could produce risks from natural hazards such as geologic faults, flash floods, volcanic activity and mud slide. There is no evidence of hazards imposed by inadequate traffic control, visual obstructions to traffic, or inadequate separation of traffic.

Permanent pumping facilities are targets for vandalism; they will be fenced off by chain link fencing.

5. Energy Consumption

Rating: 2 - No impact anticipated.

Source: "Special Provisions, Proposal, Contract, and Bond for Job 92-11A, Caprock Wells: Drill, Case and Test Two Nonpotable Wells for West Loch Golf Course and Ewa Villages, Ewa, Oahu, Hawaii," Board of Water Supply, City and County of Honolulu, May 12, 1992.

The contractor will be required to make his own arrangements for any temporary electric and telephone services required to perform the work.

The permanent pumping facilities will receive electrical services from the utility company.

B. Noise

Rating: 3 - Minor Adverse Impacts Anticipated (Long- and Short-Term)

Source: Site Inspection, May 1992.

Revised General Provisions of Construction Contracts, dated 1976, for the City and County of Honolulu.

"Special Provisions, Proposal, Contract, and Bond for Job 92-11A, Caprock Wells: Drill, Case and Test Two Nonpotable Wells for West Loch Golf Course and Ewa Villages, Ewa, Oahu, Hawaii," Board of Water Supply, City and County of Honolulu, May 12, 1992.

Telephone conversation with Delwin Ching, Engineering Branch, Board of Water Supply, August 18, 1992.

During the anticipated six-month construction period, there will be some noise from the drilling and testing of the wells. The contractor will be required to employ sound abatement equipment and procedures during test pumping if noise levels exceed standards of the Department of Health. During testing of the wells, the contractor will be required to immediately cease work upon complaints from nearby residents and will resume work only during hours to be determined by the Board of Water Supply.

Initially, working hours on the proposed project will be limited to the hours between 7:30 a.m. and 3:30 p.m.

Noise from the permanent pumps can be minimized using standard procedures, including installing the pumps underground.

C. Air Quality

Rating: 3 - Minor Adverse Impacts Anticipated (Short-Term)
2 - No Impact Anticipated (Long-Term)

Source: Site inspection, May 1992.

"Special Provisions, Proposal, Contract, and Bond for Job 92-11A, Caprock Wells: Drill, Case and Test Two Nonpotable Wells for West Loch Golf Course and Ewa Villages, Ewa, Oahu, Hawaii," Board of Water Supply, City and County of Honolulu, May 12, 1992.

During the construction phase, some fugitive dust will be generated by construction activities, resulting in minor short-term adverse impacts on air quality. The contractor will be required to keep the site free of dirt and dust by periodic watering or other approved means.

D. Environmental Design and Historic Values

1. Visual Quality - Coherence, Diversity, Compatible Use and Scale

Rating: 2 - No Impact Anticipated

Source: Ewa Villages Master Plan, R. M. Towill Corporation,
August 1992

Existing Land Use Map

The proposed permanent facilities will be located in the Ewa Villages Golf Course and will have no visual impact on the historic character of the Ewa Villages plantation homes. Judicious landscaping should minimize their impact on the golf course.

2. Historic, Cultural and Archaeological Resources

Rating: 2 - No Impact Anticipated

Source: Department of Land and Natural Resources letter dated
July 3, 1992.

Department of Land and Natural Resources letter dated
November 5, 1992.

DLNR states its opinion that "this project will have 'no effect' on historic sites."

E. Socio-Economic

1. Demographic/Community Character changes

Rating: 2 - No impact anticipated

Source: Ewa Villages Master Plan, R. M. Towill Corporation,
August 1992.

The proposed project will have no necessary direct demographic or socio-economic impact on the present or future Ewa Villages community.

2. Displacement

Rating: 2 - No impact anticipated

Source: Site Inspection, May 1992
Existing Land Use Map

No persons will be displaced by the proposed project.

3. Employment and Income Pattern

Rating: 2 - No impact anticipated.

Long-term employment will be limited to operation and maintenance of any permanent facilities. There are no data available on the employment generated by the permanent facilities.

F. Community Facilities and Services

1. Educational Facilities and Services

Rating: 3 - Minor adverse impacts anticipated (short-term)

Source: Field Inspection, May 1992.
Existing Land Use Map

Construction of the proposed project may generate noise and dust near the Ewa Elementary School and Catholic Church during the estimated six-month construction period.

2. Commercial Facilities

Rating: 2 - No impact anticipated.

Source: Field Inspection, May 1992.
Existing Land Use Map

There are no commercial facilities in the project areas.

3. Health Care

Rating: 2 - No impact anticipated.

Source: Field Inspection, May 1992.

Existing Land Use Map

There are no health care facilities in the area.

4. Social Services

Rating: 2 - No impact anticipated.

Source: Field Inspection, May 1992.

Existing Land Use Map

The proposed project will not require any social services.

5. Solid Waste

Rating: 2 - No impact anticipated.

Source: "Special Provisions, Proposal, Contract, and Bond for Job 92-11A, Caprock Wells: Drill, Case and Test Two Nonpotable Wells for West Loch Golf Course and Ewa Villages, Ewa, Oahu, Hawaii," Board of Water Supply, City and County of Honolulu, May 12, 1992.

During the test drilling, the contractor is responsible for arranging for the disposal of any surplus excavated material.

The permanent facilities will not generate solid waste.

6. Wastewater

Rating: 3 - Minor adverse impacts anticipated (short-term).

Source: "Special Provisions, Proposal, Contract, and Bond for Job 92-11A, Caprock Wells: Drill, Case and Test Two Nonpotable Wells for West Loch Golf Course and Ewa Villages, Ewa, Oahu, Hawaii," Board of Water Supply, City and County of Honolulu, May 12, 1992.

Regarding wastewater generated during the drilling and testing, the contractor will be required to make the necessary arrangements with the proper parties to dispose of water due to the project; the contractor will be held responsible for any damages resulting from waste water disposal. The contractor will be required to

obtain Non-stormwater Discharge permits from the State Department of Health and City Department of Public Works.

7. Storm water

Rating: 1 - Potentially beneficial impact.

Source: Ewa Villages Master Plan, R. M. Towill Corporation, August 1992.

The proposed project will indirectly improve storm drainage in the area. It will do so by facilitating development of the Ewa Villages Golf Course, which is being designed to improve drainage in the Ewa Villages Project area by channeling storm drainage flows from areas mauka of the project through the western portion of the golf course and into the Gentry golf course located makai of the project.

8. Water Supply

Rating: 2 - No impact anticipated.

Source: Board of Water Supply letter dated August 7, 1992.

The proposed project will have no impact on the present water supply in the area. Should the wells prove to be viable, permanent pumping, storage and transmission facilities will be installed independently of the existing water system. The cost of these permanent facilities will be borne by the Department of Housing and Community Development.

9. Public Safety

a. Police

Rating: 2 - No impact anticipated.

Source: Site Inspection, May 1992.

Ewa Villages Master Plan, R. M. Towill Corporation, August 1992.

The test and permanent wells are or will be located in areas of very low vehicular or pedestrian traffic.

b. Fire Protection

Rating: 2 - No impact anticipated.

Source: Site Inspection, May 1992.

The test and permanent wells are not expected to increase the need for or present unusual difficulties in fire protection services.

10. Open Space, Recreation and Cultural Activities

Rating: 2 - No impact anticipated.
1 - Potentially beneficial impact.

Source: Site Inspection, May 1992

Ewa Villages Master Plan, R. M. Towill Corporation,
August 1992.

Neither well site is currently located or will be located such as to adversely impact use of open space, recreation or cultural activities.

By irrigating the parks, greenbelts and golf courses in the area, the proposed project will benefit recreational activities and increase open space.

11. Transportation

Rating: 2 - No impact anticipated.

Source: Ewa Villages Master Plan, R. M. Towill Corporation,
August 1992.

The proposed project will place no demands on transportation systems in the area, currently or in the future.

G. Natural Features

1. Water Resources

Rating: 1 - Potentially beneficial impact (potable water)
3 - Minor adverse impacts anticipated (nonpotable water) until the end of 1996.

Sources: George A. L. Yuen & Associates, Inc., Groundwater Resources and Sustainable Yield. Ewa Plain Caprock Aquifer, Oahu, Hawaii, Report R-79, State of Hawaii, Commission on Water Resource Management, Department of Land and Natural Resources, March, 1989.

Board of Water Supply, City and County of Honolulu,
Oahu Water Plan, 1982.

Letter from Oahu Sugar Co. to Department of Housing and Community Development dated October 9, 1992.

Memorandum from the Board of Water Supply to the
Department of Housing and Community Development dated
November 19, 1992.

Regarding potable water, the proposed project will benefit the area by irrigating parks, greenbelts, and golf courses without using potable water resources.

Regarding nonpotable water, the proposed project may have a short-term adverse impact on the supply of nonpotable water because it will (1) increase demand when demand is already high for nonpotable water, and (2) contribute to the urbanization which decreases the supply of nonpotable water. These adverse impacts are explained as follows:

- a. Increasing demand when demand is already high for nonpotable water.

The sustainable yield under current conditions of the Honouliuli-Puuloa Sector of the Caprock Aquifer, where the wells are located, is estimated at 10 to 15 mgd (Yuen, p. 5). Current demand is also estimated in the 10 to 15 mgd range; and current total water use permits, which include urban as well as agricultural users, for the area exceed the present sustainable yield of the caprock aquifer.

The West Loch Caprock Wells will add to that demand.

- b. Increasing urbanization may decrease the supply of Ewa caprock water for the following reasons:

The current major source of the existing caprock aquifer is Oahu Sugar Company irrigation water which has escaped from the root zone of the sugar plants. With increasing urbanization of the Ewa area, the acreage of Oahu Sugar irrigation may be expected to decrease, which will decrease caprock recharge.

If irrigation ceases in Ewa, the major source of caprock water will cease to exist.

None of the urban uses to which the land will be converted will recharge the caprock as copiously or efficiently as sugar irrigation.

The West Loch Caprock Wells are a part of the increasing urbanization of Ewa.

These adverse impacts notwithstanding, the proposed project may be justified for the following reasons:

The proposed caprock wells are physically located such, adjacent to sugar cane fields being irrigated with basal water, that they will likely draw good quality caprock water. If good quality water is available, the Ewa Villages and West Loch projects should use it.

The future transmission system will be designed as a dual source system, able to draw from both the caprock aquifer and the treated effluent from Honouliuli Sewage Treatment Plant when it becomes available. When the system is converted to treated effluent sometime after 1996, its demand for caprock water will diminish.

The proposed project is only one of many (approximately 20) urban irrigation projects in the Ewa area, all of which are being encouraged to use nonpotable water. No project should be denied to benefit the other projects; the diminishing supply of nonpotable water should be protected by encouraging fair and cooperative allocation of the water, conservation, and appropriate landscaping practices.

2. Floodplain Management

Rating: 1 - Potentially beneficial impact.

Source: Ewa Villages Master Plan, R. M. Towill Corporation, August 1992.

By facilitating the development of the Ewa Villages Golf Course, the proposed project will help improve flood conditions in the Ewa Villages project.

The western portions of the Ewa Villages are currently subject to flooding during 100-year storms. The Ewa Villages Golf Course is being designed to alleviate flooding by (1) channeling sheet flow away from current and future residential areas in the Ewa Villages project, (2) containing flood waters from the Kaloi Ditch and (3) conducting these waters via channels and culverts out of the project into the Gentry Golf Course makai of the Ewa Villages.

3. Wetlands Protection

Rating: 2 - No impact anticipated.

Source: Site inspection, May 1992

The proposed project is not located in a wetlands area.

4. Coastal Zone Management

Rating: 2 - No impact anticipated.

Source: Department of Land Utilization Special Management Area Maps, December 2, 1985.

The project site does not lie in the Special Management Area designated by the Department of Land Utilization under Chapter 205A, Hawaii Revised Statutes, relating to Coastal Zone Management.

5. Unique Natural Features

Rating: 2 - No impact anticipated.

Source: Site Inspection, May 1992

There are no unique natural features in the project areas.

6. Vegetation and Animal Life

Rating: 2 - No impact anticipated.

Source: Evangeline Funk, Ph.D, "Biological Resources Survey Report for the Ewa Villages Development," for R. M. Towill Corporation, April 1990, "Appendix A" to R. M. Towill Corporation, Final Impact Statement for the Ewa Villages Master Plan, Ewa, Oahu, Hawaii, February 1991.

Results of the biological survey for the project area were as follows:

Plants: "No proposed or listed, threatened or endangered species were found on the proposed Ewa Villages site."

Animals: "Five species of mammals were found during the survey....None is considered endangered or threatened in any way.

Birds: No threatened or endangered species were found and only one endemic species inhabits the area.

7. Agricultural Lands

Rating: 3 - Minor adverse impacts (short- and long-term)

Source: Field Inspection, August 1992.

Ewa Villages Master Plan, R. M. Towill Corporation, August 1992.

Pacific Business and Economic Consultants, Richard L. Bowen, Ph.D., "Agricultural Impact Assessment of the Proposed Ewa Villages Master Plan," July 1990, "Appendix F" to R. M. Towill Corporation, Final Environmental Impact Statement for the Ewa Villages Master Plan, Ewa, Oahu, Hawaii, February, 1991.

The short-term impact of the proposed project (test wells) may be to cause crop damage in two of Oahu Sugar's cane fields. Oahu Sugar will be compensated for this crop damage if fields are unharvested at the time of the well drilling.

Over the long-term, the proposed project is part of and is intended to facilitate the Ewa Villages project, which will convert these agricultural lands to residential or resort use.

As adduced in the Ewa Villages Master Plan, February 1991, the arguments minimizing the impact of this conversion are:

- a. The viability of agriculture in the area is questionable, given State and County plans for continued urbanization in the area. The State Land Use Commission has classified the lands within the Ewa Village project as "Urban."
- b. The acreage to be removed from agricultural use will have insignificant impact on agriculture on Oahu.
- c. The acreage to be removed from agricultural use will not jeopardize the continued operations of Oahu Sugar Company in the immediate future.

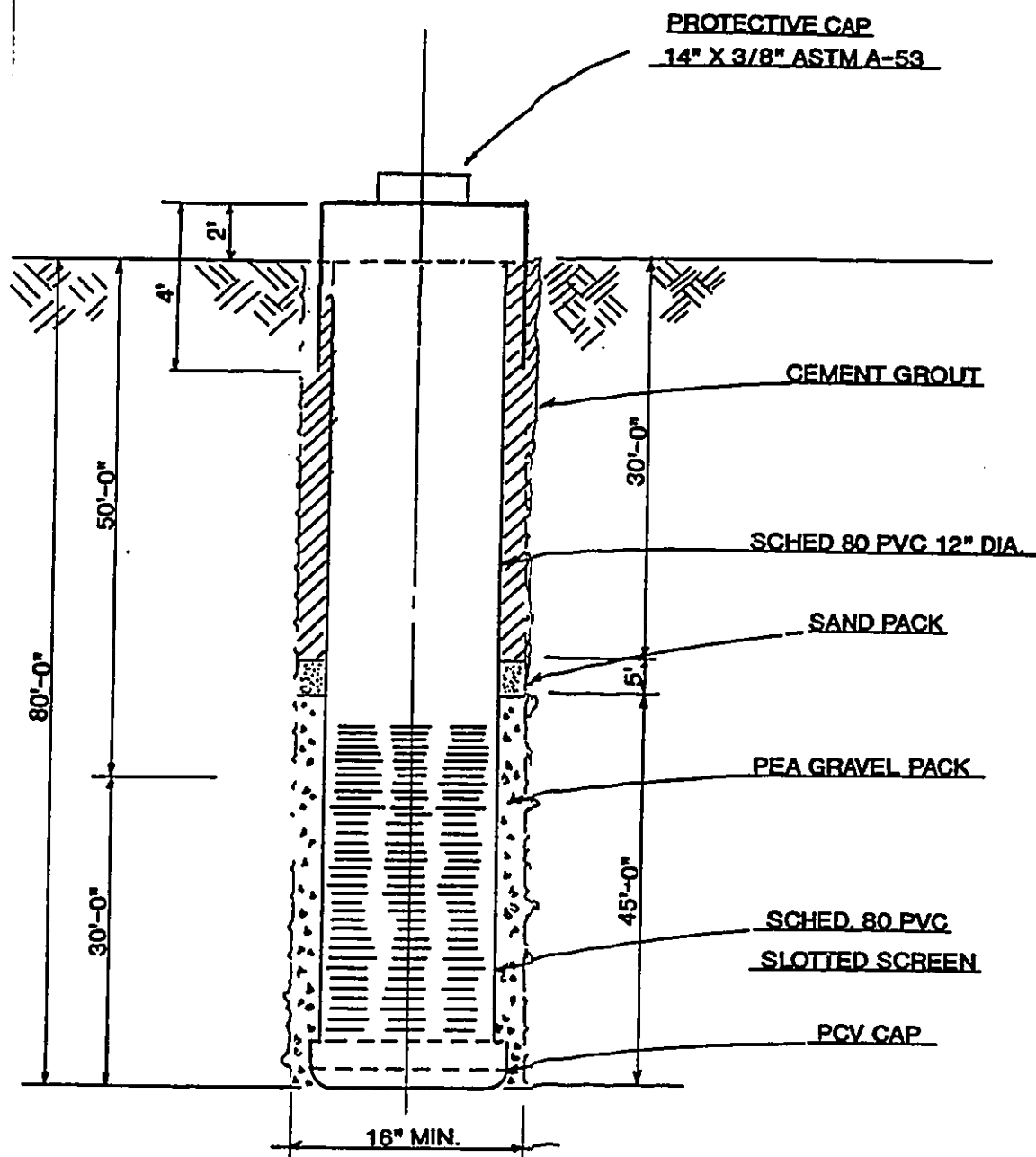
H. Determination

It is determined that the proposed actions will have no significant impact on the quality of the human environment and that an Environmental Impact Statement is not required. This determination is made on the grounds that the potential environmental impacts of this project are easily mitigated or will have no adverse impact on the quality of the human environment.

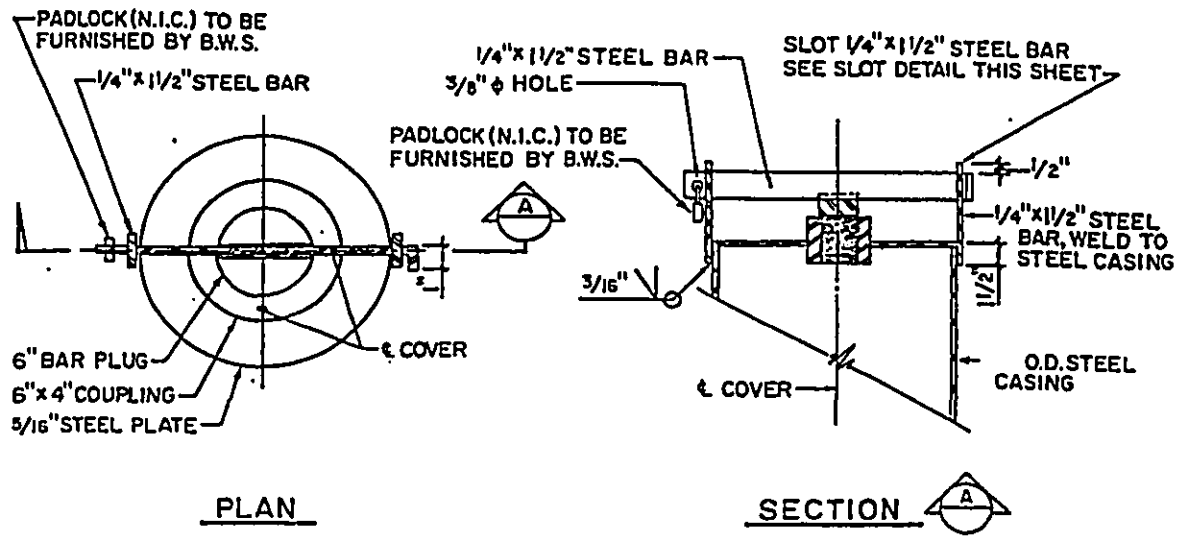
1. Short-term increases in noise levels attributable to construction related activities will be mitigated through compliance with Title 11, Administrative Rules, Department of Health, Chapter 43, "Community Noise Controls for Oahu." Long-term increases in noise levels from the permanent pumping facilities can be minimized through standard insulating procedures.
2. Short-term escape of fugitive dust into the environment will be minimized by requiring the contractor to water the sites or use other approved means of dust control.
3. The impact of the proposed project on public services and facilities, and the visual impacts of the project on the current and planned project area are evaluated as minimal and not significantly affecting the quality of the human environment.
4. The impact of the proposed project on agricultural lands is evaluated as minor over the short and long term.
5. The proposed project's demand placed on the supply of nonpotable caprock water may be expected to decrease when treated effluent from the Honouliuli Sewage Treatment Plant becomes available and the permanent pumping facilities begin to draw from that source.

DETAILS OF THE PROPOSED TEST WELLS

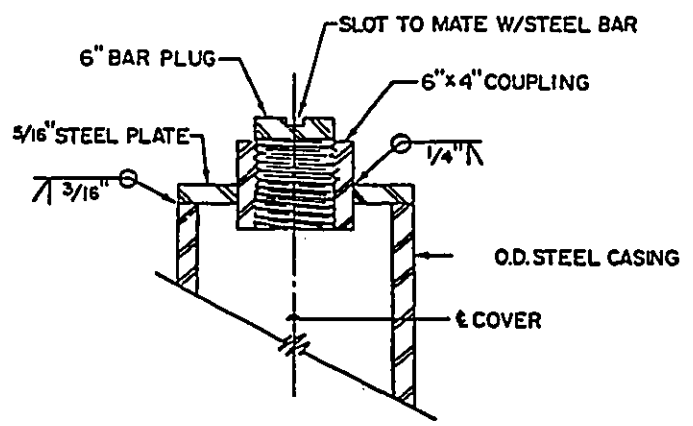
EXHIBIT A



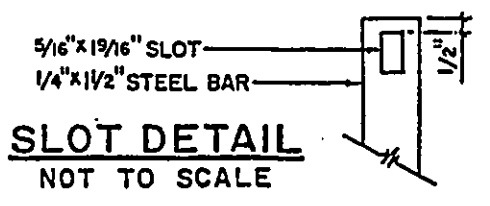
WEST LOCH IRRIGATION EXPLORATORY WELLS
 NOT TO SCALE



BAR CAP LOCK DETAIL
NOT TO SCALE



COVER DETAIL
NOT TO SCALE

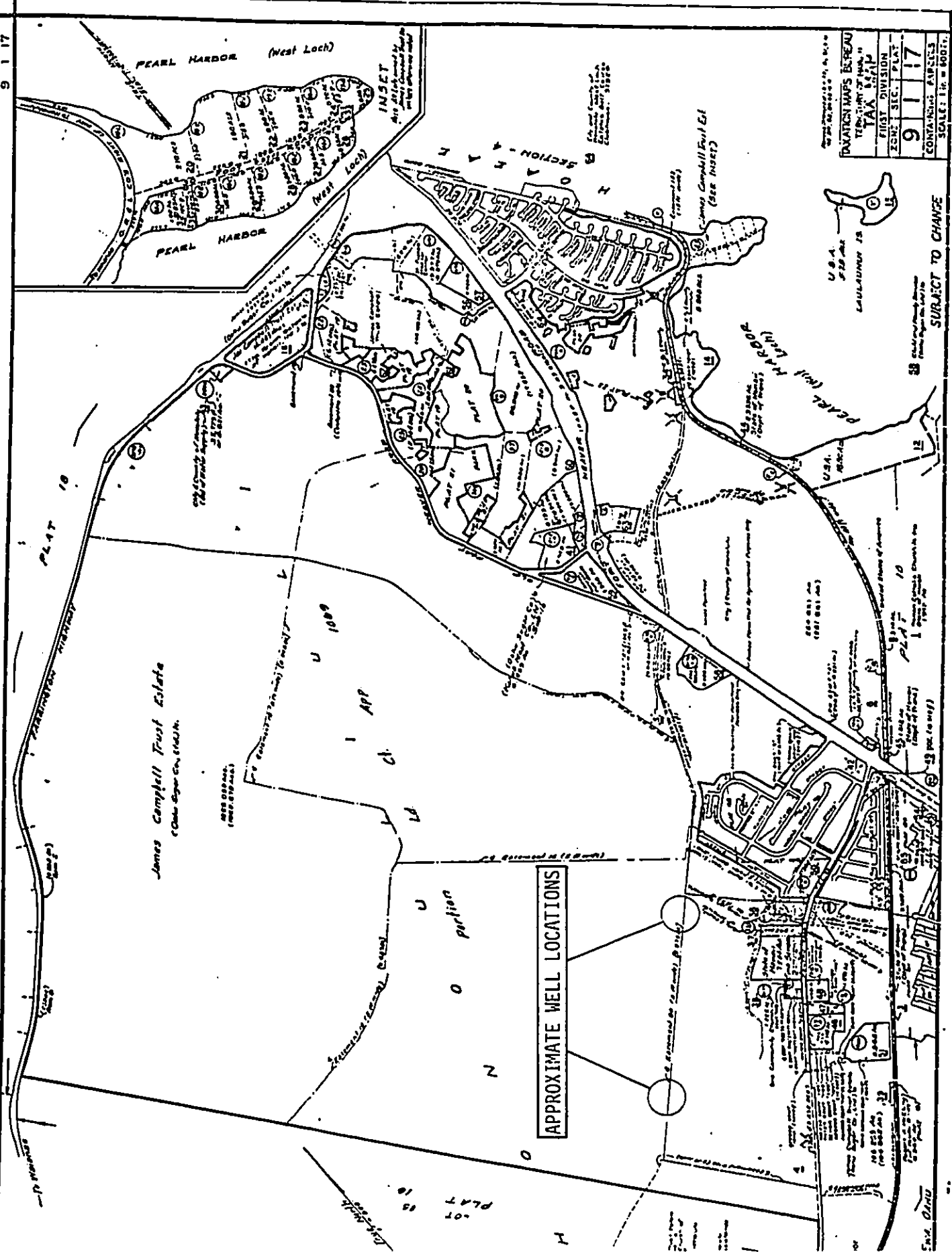


SLOT DETAIL
NOT TO SCALE

LOCATION MAPS

EXHIBIT B

9 1 17



NAVY MAPS BUREAU
TECHNICAL DRAWING
TAK MAP
FIRST DIVISION
ZONE I SEC. PLAT.
9 1 17
CONTAINING AIRS
SCALE: 1" = 500 FT.



SUBJECT TO CHANGE

APPROXIMATE WELL LOCATIONS

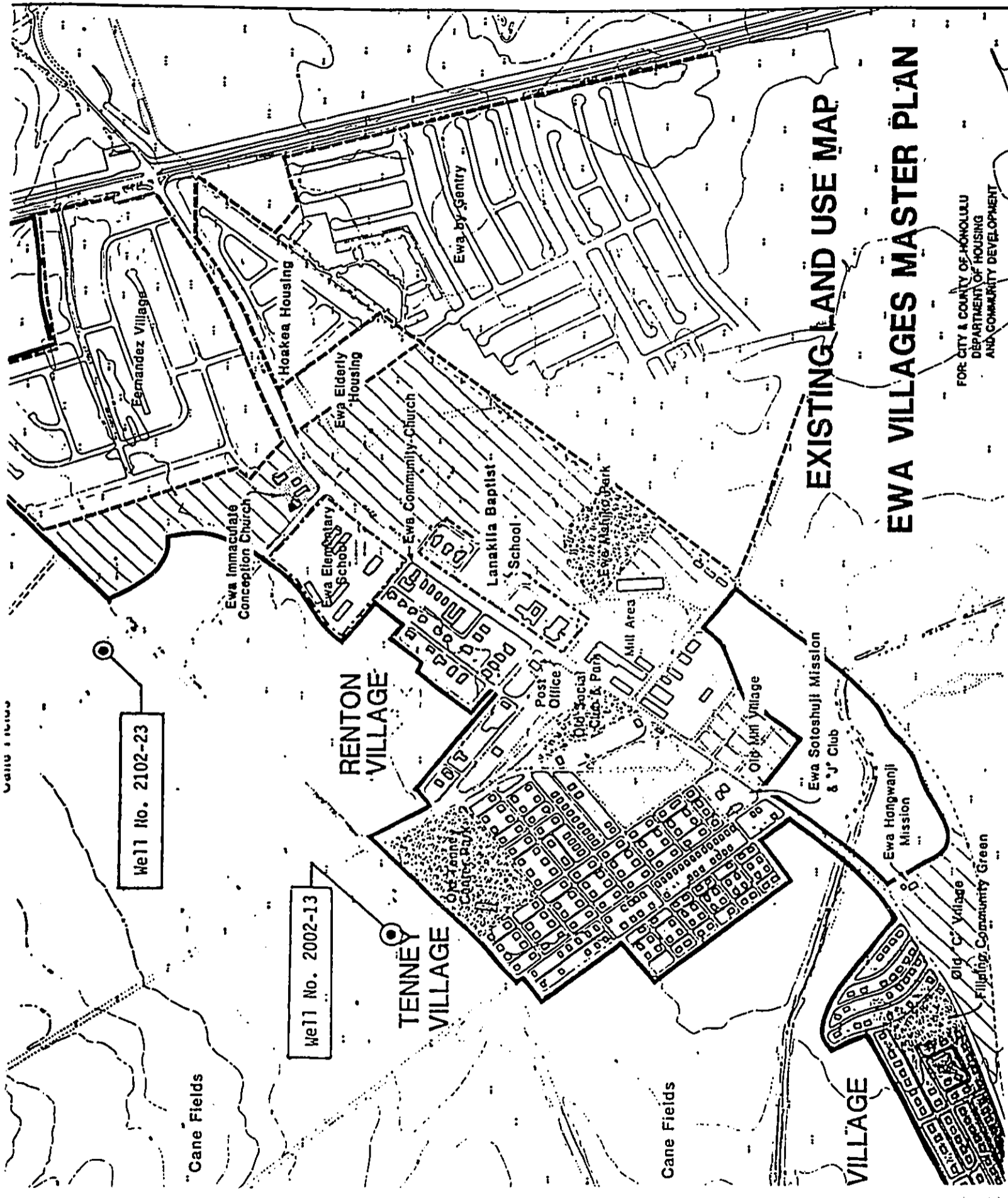
James Campbell Trust Estate
ROAD SYSTEM, 1943

PLAT 10

U 1000
1 APR
U 1000

PLAT 10

EX. 0100



EXISTING LAND USE MAP
EWA VILLAGES MASTER PLAN

FOR CITY & COUNTY OF HONOLULU
 DEPARTMENT OF HOUSING
 AND COMMUNITY DEVELOPMENT

Well No. 2102-23

Well No. 2002-13

RENTON VILLAGE

TENNEY VILLAGE

VILLAGE

Cane Fields

Cane Fields

Espandez Village

Hoakea Housing

Ewa by Gentry

Ewa Elderly Housing

Ewa Community Church

Lanakila Baptist School

Ewa Ashiko Park

Ewa Immaculate Conception Church

Ewa Elementary School

Post Office

Old Mill Village

Ewa Sotoshuji Mission & J' Club

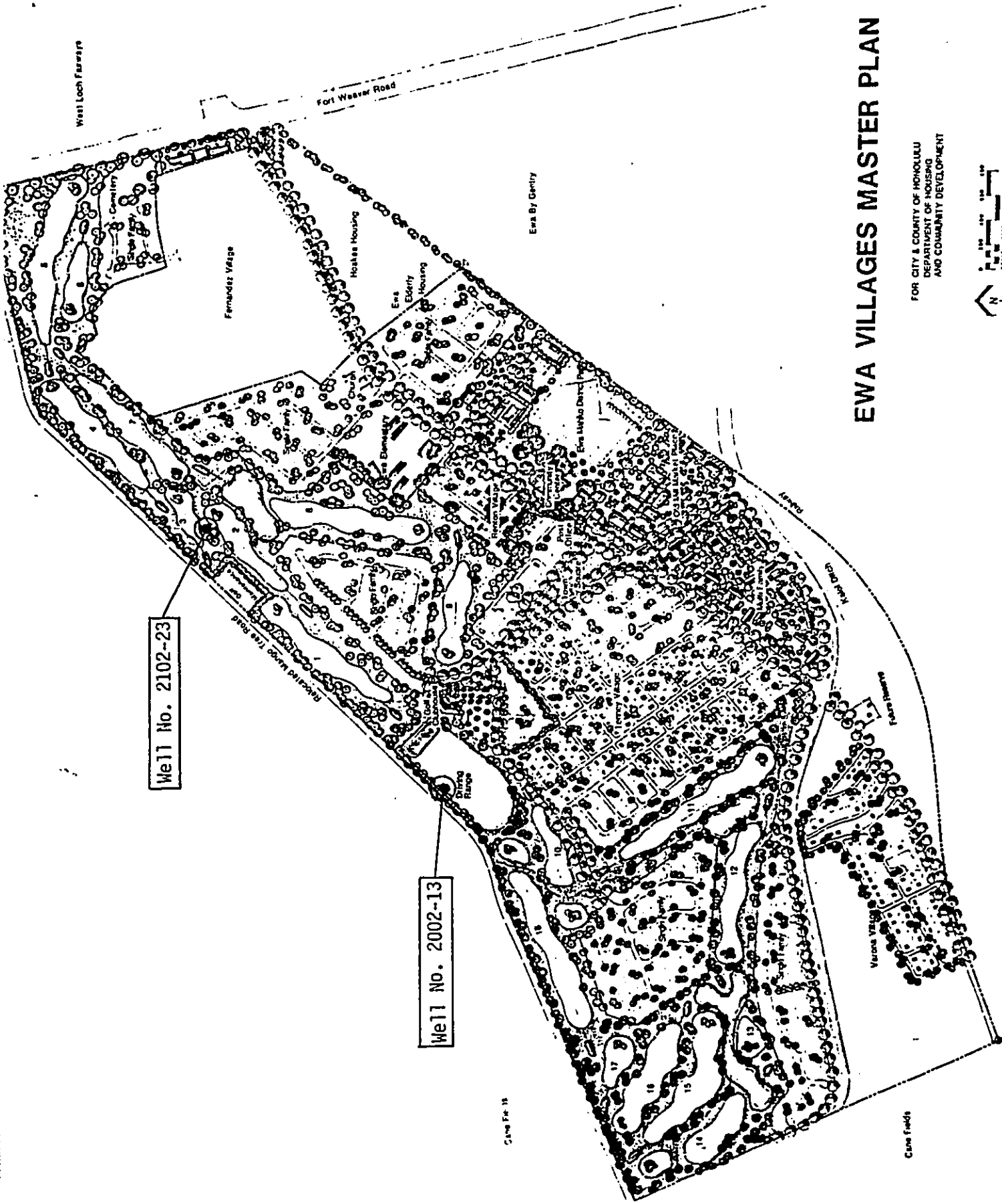
Ewa Hangwanji Mission

Old Mill Village
 Filling Community Green

Scale 1:10000

EWA VILLAGES MASTER PLAN

FOR CITY & COUNTY OF HONOLULU
DEPARTMENT OF HOUSING
AND COMMUNITY DEVELOPMENT



RESPONSES FROM CONSULTED AGENCIES
DRAFT ENVIRONMENTAL ASSESSMENT
FINAL ENVIRONMENTAL ASSESSMENT

EXHIBIT C

JOHN WAHEE
GOVERNOR OF HAWAII



file

2817

WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KEPPEL, II
DONA L. HANAKE

AQUACULTURE DEVELOPMENT
PROGRAM

AQUATIC RESOURCES
CONSERVATION AND

ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
DIVISION

LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

REF:HP-AMK

JULY 8, 1992

Mr. E. James Turse, Director
Department of Housing and Community Development
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

LOG NO: 5637
DOC NO: 0830t

Dear Mr. Turse:

SUBJECT: Ewa Villages Revitalization Project,
West Loch Project, Cap Rock Wells
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-17: por. 4

Thank you for the opportunity to review this project. A review of our records shows that wells 2102-23 and 2002-13 will be located in lands that are currently in sugarcane cultivation or were previously cultivated. Since it is unlikely that historic sites that might have been present remain in old cane-fields we believe this project will have "no effect" on historic sites.

If you have any questions please call Tom Dye at 587-0014.

Very truly yours,

WILLIAM W. PATY, Chairperson and
State Historic Preservation Officer

TD:amk

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA STREET

HONOLULU, HAWAII 96843



August 7, 1992

FRANK F. FASI, Mayor

WALTER O. WATSON, JR., Chairman
MAURICE H. YAMASATO, Vice Chairman
SISTER M. DAVILYN AH CHICK, O.S.F.
JOHN W. ANDERSON, JR.
REX D. JOHNSON
MELISSA Y. J. LUM
C. MICHAEL STREET
KAZU HAYASHIDA
Manager and Chief Engineer

TO: E. JAMES TURSE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: ENVIRONMENTAL ASSESSMENT DATED JUNE 10, 1992 REGARDING
THE EWA CAPROCK WELLS FOR THE EWA VILLAGES REVITALIZATION
AND WEST LOCH PROJECTS, TMK: 9-1-17: PORTION 4

92 AUG 12 11 11 AM
COMMUNITY DEVELOPMENT

Thank you for the opportunity to review and comment on the proposed Caprock Wells project. We have no objections to the proposed project. The construction contract is presently being readvertised for bids. We have the following comments on the Ewa Villages Revitalization Project:

1. We are still reviewing the water master plan which we should complete very shortly.
2. The project should be landscaped with plants which require minimal use of irrigation water.
3. All lots proposed to be served by the dual water system will require the installation of an approved reduced pressure principle backflow prevention assembly on the potable water line immediately after the property valve.

If you have any questions, please contact Bert Kuioka at 527-5235.

JOHN WAIHEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. BOX 621
HONOLULU, HAWAII 96809

REF:OCEA:VKKH

WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KEPPELER, II
DONA L. HANAIKE

AQUACULTURE DEVELOPMENT
PROCESSES
AQUATIC RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

NOV 5 1992

FILE NO.: 93-
DOC. NO.: 1690

The Honorable E. James Turse, Director
City and County of Honolulu
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Turse:

SUBJECT: West Loch Caprock Wells Project at Ewa, Oahu
Draft Environmental Assessment (TMK: 9-1-17: 4)

Thank you for the opportunity to comment on the subject matter. We offer the following additional comments to our October 22, 1992, letter.

This project proposes to drill two exploratory wells. If these wells prove viable, then permanent pumping, storage, and transmission facilities will be developed and installed. The wells will be drilled in sugar cane fields where it is extremely unlikely that historic sites will be found. Therefore, we believe this project will have "no effect" on historic sites.

Thank you for our cooperation in this matter. If you have any questions, please contact Cathy Tilton of our Office of Conservation and Environmental Affairs at 587-0377.

Very truly yours,

WILLIAM W. PATY

JOHN WAIHEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

P. O. BOX 621
HONOLULU, HAWAII 96809

OCT 22 1992

WILLIAM W. PATY
CHAIRPERSON

JOHN C. LEWIN, M.D.
MICHAEL J. CHUN, Ph.D.
ROBERT S. NAKATA
RICHARD H. COX, P.E.
GUY K. FUJIMURA

RAE M. LOUI, P.E.
DEPUTY

REF:WRM-KO

Mr. E. James Turse
Department of Housing and Community Development
City and County of Honolulu
650 South King St., 5th Floor
Honolulu, HI 96813

Dear Mr. Turse:

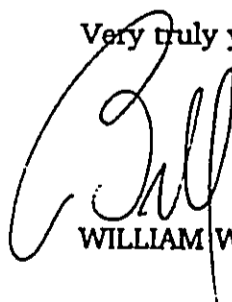
Comments on West Loch Caprock Wells Draft Environmental Assessment

The Commission on Water Resource Management issued well construction permits for the West Loch Caprock Wells (Well Nos. 2002-13 and 2102-23) in August 1991. There are pending water use permit applications for the wells.

I am pleased that your staff has participated in the recent meetings on the proposed Ewa Caprock Regional Plan (for wastewater reuse). The plan would require that all proposed projects using non-potable water participate in the planning, funding, and implementation of alternative non-potable water sources in the Ewa Caprock area before they are granted any water use permits. Permits would be granted on a temporary (yearly) basis to active participants of the plan until the alternative sources come on line. The City & County Department of Public Works has recently agreed to developing an RFP for alternative wastewater reuse projects (see item 8 on enclosed Action Plan). As such, you may wish to include these recent developments into your final environmental assessment.

If you have any questions, please contact Ms. Rae M. Loui, Deputy Director, at 587-0214.

Very truly yours,



WILLIAM W. PATY

Encl.

COMMISSION ON WATER RESOURCE MANAGEMENT
EWA CAPOCK REGIONAL PLAN
ACTION PLAN

<u>Action Item</u>	<u>Resp.</u>	<u>Deadline</u>
1. Test formation water qual. to determine level of treatment required to reinject.	DOH/CWRM	10/20/92
2. Determine feasibility of UIC reg. change and timeframe for adoption.		10/30/92
3. Evaluate consent decree.	W. Tam	11/1/92
4. Update demand forecasts by year of all potential caprock users.	CWRM	11/1/92
5. Determine demand forecasts of other non-potable water uses (basal brackish, dust control, basal).	CWRM	11/10/92
6. Determine if temporary permits from the caprock can meet all demands through 1996.	CWRM	11/15/92
7. Post public notice and allocate caprock water through temporary water use permits to 1996.	CWRM	2/28/93
8. Obtain City's commitment to RFP schedule.	J. Honke	11/15/92
9. Task force to review DOH Guidelines for Reuse.	Task Force	11/30/92
10. <u>Reinjection Alternative</u>		
• Determine feasibility of alternative and possibility of incorporation into RFP.	CWRM	11/15/92
• Develop technical plan		
• Firm up cost estimates of well array and/or seepage trenches		
• Develop funding scheme		
• Determine effects of 13 mgd recharge vs. current amounts	CWRM	
• Evaluate and modify well array and potential permits		

Commission on Water Resource Management
Ewa Caprock Regional Plan

	<u>Action Item</u>	<u>Resp.</u>	<u>Deadline</u>
11.	Determine CWRM goal of maintaining caprock source vs. finding alternative and SY.	CWRM	12/30/92
12.	Incorporate plans in OWMP.	DGP	12/30/93
13.	DOH Guidelines for Reuse adopted.		12/30/92
14.	Establish standards to forecast water demand given xeriscaping and other conservation methods.	BWS	6/1/93
15.	UIC line changed (if applicable).		12/30/93
16.	DOH Rules for Reuse adopted.	-	12/30/93

DRAFT

October 14, 1992.

State of Hawaii
Department of Land and Natural Resources
COMMISSION ON WATER RESOURCE MANAGEMENT

EWA CARPOCK REGIONAL PLAN
NON-POTABLE WATER DEMAND FORECAST

DEVELOPER	PROJECT	CARPOCK AREA	PRIMARY USE	TOTAL PROJECTED NON-POTABLE DEMAND (MGD)	1992	1993	1994	1995	1996	PERMIT REQUEST	PERMITTED
Campbell Estate	City of Kapolei	Kapolei	COHB	0.00	0.27	0.27	0.37	0.37	0.37	1.00	
Campbell Estate	Kapolei Business Park	Kapolei	COHB	0.00	0.43	0.54	0.74	1.10	1.10		
DOT	Barbers Pt Harbor	Kapolei	COHB	0.02		0.11	0.11	0.11	0.11		
Finance Realty	Hakakilo Golf Course	Kapolei	IRR					1.15	1.15	1.15	X
HFDC	Kapolei Village	Kapolei	COHB	0.08			0.63	0.63	0.63	2.20	
AES Barbers Pt	Cogeneration Plant	Halakole	IND	17.28	17.28	17.28	17.28	17.28	17.28	17.28	X
Chevron USA	Fire Protection	Halakole	FIRE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X
C&C DPV	Hon. Resource Recovery Proj.	Halakole	IND	2.26	2.26	2.26	2.26	2.26	2.26	2.26	X
Havn. Refinery Inc	Fire Protection	Halakole	FIRE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X
HECO	HECO Cooling	Halakole	IND	0.00	14.40	14.40	14.40	14.40	14.40	14.40	X
Kalaeloa Partners	Cogeneration Plant	Halakole	IND	3.17	3.17	3.17	3.17	3.17	3.17	3.17	X
Aloha State Corp	Ewa Gentry	Puuloa	IRR	0.08	0.08	0.08	0.08	0.08	0.08	0.08	X
C&C DHCO	West Loch	Puuloa	IRR	0.00						2.00	
DOT	Ft Weaver Rd/Landscaping	Puuloa	IRR	0.00			0.29	0.29	0.29		
DOT	Ft Weaver Rd/Renton Rd	Puuloa	IRR	0.00			0.27	0.27	0.27		
DOT	H-1 Kunia Interchng Landscape	(Puuloa)	IRR	0.00			0.19	0.19	0.19		
DOT	Kunia Rd Landscaping	(Puuloa)	IRR	0.00			0.08	0.08	0.08		
DOT	H-1 Pahi Interchng Landscape	(Puuloa)	IRR	0.00			0.11	0.11	0.11		
DOT	Kunia/Farrington Hwy Interchng	(Puuloa)	IRR	0.00			0.15	0.15	0.15		
Gentry Hawaii	Ewa By Gentry (multiple projects)	Puuloa	COHB	0.45	0.69	0.84	1.13	1.29	1.29	0.37	
Hasako	Ewa Marina	Puuloa	COHB	0.00	0.00	0.08	0.23	1.79	1.79		
Hawaii Prince	Hawaii Prince Golf Club	Puuloa	IRR	1.20	1.20	1.20	1.20	1.20	1.20	1.50	
Hyers Corp	Ewa Golf Course	Puuloa	IRR	0.90	0.90	0.90	0.90	0.90	0.90	0.90	X
Oahu Sugar Co.	Sugar Cane Irrigation	Puuloa	IRR	12.03	12.03	12.03	12.03	12.03	12.03	12.03	X
Puuloa Homes, Sogo	Puuloa Golf Course	Puuloa	IRR	0.00	0.60	0.60	0.60	0.60	0.60	0.60	X
Sogo Hawaii	Puuloa Golf Course	Puuloa	IRR	0.00	0.60	0.60	0.60	0.60	0.60	0.35	
TOTAL				37.47	53.31	53.65	56.22	61.80	61.80	59.29	

CARPOCK AREA	SUSTAINABLE YIELD (MGD)	1996 DEMAND LESS SALT WATER USE	1996 TOTAL DEMAND	TOTAL PERMIT REQUEST
Kapolei	5	3.36	3.36	4.35
Halakole	1	0.00	37.11	37.11
Puuloa	10-15	21.33	21.33	17.83
TOTAL	16-21	24.69	61.80	59.29

* Projects to use only saltwater

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA STREET

HONOLULU, HAWAII 96843



October 29, 1992

FRANK F. FASI, Mayor

WALTER O. WATSON, JR., Chairman
MAURICE H. YAMASATO, Vice Chairman

SISTER M. DAVILYN AH CHICK, O.S.F.

JOHN W. ANDERSON, JR.

RENE JOHNSON

MELISSA Y.J. LIM

C. MICHAEL STREET

KAZU HAYASHIDA
Manager and Chief Engineer

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

NOV 4 P2:21

TO: E. JAMES TURSE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY *KH*

SUBJECT: WEST LOCK CAPROCK WELLS PROJECT DRAFT ENVIRONMENTAL ASSESSMENT

WE ARE SENDING YOU Attached Under separate cover
 Shop drawings Tracings Plans/Prints Other

COPIES

DESCRIPTION

One

Draft Environmental Assessment

Approved as submitted Not approved Return corrected prints
 Approved as noted Returned for corrections Resubmit copies for approval
 For reapproval due to lapse in time Other Return our marked-up material with your tracings
 Submit copies for distribution

Remarks: We awarded the contract to drill the wells. The contractor is ready to start, pending clearances of the Environmental Assessment and Negative Declaration. If you have any questions, please contact Delwin Ching at 527-5202.

Attachment

OAHU SUGAR
P.O. Box "O"
Waipahu, Hawaii 96797
(808) 677-3577

Amfac

October 9, 1992

Mr. E. James Turse, Director
City and County of Honolulu Department
of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Jim:

Subject: West Loch Caprock Wells Project Draft
Environmental Assessment

Thank you for forwarding the subject draft environmental assessment for our review and comment. We would like to provide you with the following thoughts.

1. Oahu Sugar Company does not have any objections to the drilling and testing of the two exploratory wells within the Ewa Villages Revitalization project, to determine the well yield potential.
2. We disagree with your determination that use of the water found by the exploratory wells in the quantities specified will be minor and have an insignificant environmental impact. We note that under impact Category "G" (Natural Features), the assessment cites "Sustainable yield under current conditions is estimated at 10 to 15 mgd." However it fails to mention that the current withdrawal from the aquifer is already in the 10 to 15 mgd range, and that your proposed additional withdrawal from the aquifer could result in degradation of the resource. Additionally, as you pointed out in your assessment, the future of Oahu Sugar Company is uncertain, the aquifer as a useable resource was created in a great part to Oahu Sugar Company's long term sugarcane irrigation recharge over the aquifer. In the future, should Oahu Sugar no longer be present to recharge the aquifer, the long term future of the aquifer's usefulness could be in jeopardy. We feel that this possible contingency needs to be addressed in your assessment.

October 9, 1992
Page 2

Thank you for consideration of our views. Should you have any questions, please call me at 677-3577.

Very truly yours,



W. D. Balfour, Jr.
Vice President & Manager

WDB\HM|jf
cc: Water Commission

D/DD

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR



92 NOV 27 AIO:55

DEPT. OF HOUSING
COMM. DEVELOPMENT

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

FELIX B. LIMTIACO
DEPUTY DIRECTOR

November 23, 1992

WPP 92-547

MEMORANDUM:

TO: MR. E. JAMES TURSE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: C. MICHAEL STREET, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: WEST LOCH CAPROCK WELLS PROJECT
DRAFT ENVIRONMENTAL ASSESSMENT

This memorandum reconfirms our staff's conversation with your staff that the wastewater reuse information on pages 5 and 6 of your subject draft assessment is correct and does not need any revisions. Since the Honouliuli Wastewater Treatment Plant effluent reuse situation is dynamic, we will keep you informed on any new changes that affect your needs.

Should your staff want to discuss the Honouliuli WWTP reuse project, please call Earl Ng at 523-4653.

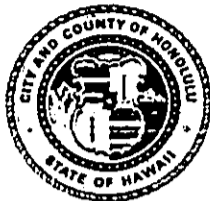
C. MICHAEL STREET
Director and Chief Engineer

RESPONSES TO COMMENTS

EXHIBIT D

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



FRANK F. FASI
MAYOR

E. JAMES TURSE
DIRECTOR

GAIL M. KAITO
DEPUTY DIRECTOR

November 27, 1992

Mr. William D. Balfour, Jr.
Vice-President and Manager, Ltd.
Oahu Sugar Company
P. O. Box "0"
Waipahu, Hawaii 96797

Dear Mr. ^{Bill} Balfour:

Subject: West Loch Caprock Wells Project
Final Environmental Assessment

This is in response to your letter of October 9, 1992, regarding the caprock wells project's potential adverse impact on the Ewa caprock aquifer.

We agree that current data show that (1) the current withdrawal from the caprock source approximately equals its sustainable yield of 10-15 million gallons per day and that (2) the future of the caprock water itself is doubtful because of its dependency on recharge from sugar cane irrigation.

To address these two issues, the future irrigation system is being designed to draw from both the proposed caprock wells in the Ewa Villages Golf Course and from a future hookup to the Honouliuli Sewage Treatment Plant when treated effluent from that source becomes available, in late 1996 according to current plans. In this way, the proposed irrigation system will still operate utilizing part of the estimated 13 million gallons per day output of treated effluent if sugar cane irrigation ceases, and it will draw less from the caprock if sugar cane irrigation continues at lower levels or if conversion to drip irrigation of sugar cane causes less recharge water to percolate to the caprock.

We also feel that these two issues must be addressed not solely by this project, but by all irrigation projects in the area: there should be cooperative allocation of nonpotable water among all projects in the area; there should be conservation via appropriate irrigation methods and appropriate landscaping in all projects.

Mr. William D. Balfour, Jr.
November 27, 1992
Page 2

If there are any questions regarding this matter, please call Project
Officer Joseph Nose at 527-5324.

Sincerely,



E. JAMES TURSE
Director