DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

March 24, 2005

Ms. Genevieve Salmonson, Director
State of Hawai'i
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

FINAL ENVIRONMENTAL ASSESSMENT/FINDING OF NO SIGNIFICANT IMPACT
WAIOHINU PRODUCTION WELL AND RESERVOIR
DISTRICT OF KAU, COUNTY OF HAWAI'I, STATE OF HAWAI'I

The County of Hawai'i, Department of Water Supply (DWS), has reviewed the comments received during the public review period, which began on January 23, 2005. Based on our review, we have affirmed our determination that this project will not have significant environmental effects. Consequently, we have issued a Finding of No Significant Impact (FONSI). Please publish this notice in the April 8, 2005, OEQC *Environmental Notice.*

We have enclosed a completed OEQC Publication Form, four copies of the Final Environmental Assessment (FEA), and the project summary on disk. Please call the project consultant, Mr. Perry White, at (808) 550-4483, if you have any questions.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

ON:dms

Encs. - FEA/FONSI (4 copies)
OEQC Publication Form
Project Summary (disk)

RECEIVED
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OFC. OF ENVIRONMENTAL QUALITY CONTROL

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2005-04-08 FONSI
WAIOHINU PRODUCTION WELL AND RESERVOIR

APR - 8 2005

Final Environmental Assessment/
Finding of No Significant Impact

WAI'ŌHINU PRODUCTION WELL AND RESERVOIR

RECEIVED
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DEPT OF PARKS & RECREATION
COUNTY OF HAWAII

PREPARED FOR:
Department of Water Supply
County of Hawai'i

PREPARED BY:
PLANNING SOLUTIONS

MARCH 2005

Final Environmental Assessment/
Finding of No Significant Impact

WAIʻŌHINU PRODUCTION WELL AND RESERVOIR

PREPARED FOR:
Department of Water Supply
County of Hawaiʻi

PREPARED BY:
PLANNING SOLUTIONS

MARCH 2005

PROJECT SUMMARY

Project:	**Wai'ōhinu Well and Reservoir**
Applicant/Approving Agency	Department of Water Supply (DWS), County of Hawai'i Contact: Milton Pavao (808-961-8050) 345 Kekūanaō'a Street., Suite 20, Hilo, HI 96720
Location	Ka'ū District; Island of Hawai'i
Tax Map Key	None assigned to either of the two affected parcels
Parcel Area	0.225 acres and 10.155 acres
Project Site Area	1.23 acre
State Land Use District	Agriculture
County Zoning	Agriculture 1a
Proposed Action	DWS proposes to drill, test, and, if successful complete a new municipal water supply well on a site approximately 0.5 miles *mauka* of the community of Wai'ōhinu. A single-story, 575 square-foot control building is planned to house the motor control center, chlorination system, and other electrical equipment needed to start and stop the well pump. Water would be stored in a new 0.50 MG reinforced concrete storage tank. Water from the well would replace most of the usage of the present water sources (Hā'ao and Old Mountain House Tunnel Springs).
Actions Requiring Assessment	Proposed use of State land and Federal funds.
Consultation	The State Dept. of Health Safe Drinking Water Branch, the Historic Preservation Division of the State Dept. of Land & Natural Resources, the County of Hawai'i Department of Planning and the County of Hawai'i Department of Environmental Management, Solid Waste Division have been consulted.
Required Permits and Approvals	• Plan Approval, Hawai'i County Planning Department • NPDES Construction Permit, State Dept. of Health • Building Permit, Hawai'i County • Pump Installation Permit and/or Well Construction Permit, State Commission on Water Resource Management • Certification of Well for Drinking Water Use, State Department of Health
Determination	Finding of No Significant Impact
Consultant	Planning Solutions, Inc. 210 Ward Avenue, Suite 330, Honolulu, HI 96814 Contact: Perry White (808)-550-4483

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1.0 NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The Hawai'i County Department of Water Supply (DWS) is responsible for the development, operation, and maintenance of the municipal water systems throughout the Island of Hawai'i. The DWS maintains 23 water systems on the island, which primarily draw potable water from drilled well and spring sources. Under recently implemented Federal and State regulations, many of DWS' potable water spring sources are expected to be reclassified as groundwater under the direct influence of surface water (GWUDI) sometime in the future.[1] Such sources now require enhanced treatment measures under the Surface Water Treatment Rule (SWTR), which can be expensive and labor intensive, particularly for small systems such as many of those maintained by DWS. Consequently, the County of Hawai'i has made it their policy to promote shifts to purely groundwater sources for potable water (County of Hawai'i 2001).

The proposed action analyzed in this Environmental Assessment (EA) is the exploration and construction of a new well and associated control and monitoring equipment in Hawai'i's Ka'ū District, just north of the community of Wai'ōhinu (see Figure 1-1). The new well is intended to supplement and eventually replace two springs (Hā'ao and Old Mountain House Tunnel Springs) that are currently the primary potable water sources serving DWS' Wai'ōhinu-Nā'ālehu-South Point system (see Figure 1-2). DWS expects that both of these spring sources will at some point be subject to the new, more stringent SWTR, and DWS has determined that enhanced treatment of the spring sources would prove more costly than developing a new groundwater well. In conjunction with the well development, DWS plans to install a Supervisory Control and Data Acquisition (SCADA) system, which would enable it to monitor the new well and other DWS facilities in the Wai'ōhinu-Nā'ālehu-South Point system. The master SCADA unit would be located at DWS' Ka'ū Baseyard, and remote units would be installed at the proposed new well, the Nā'ālehu Well, and the 0.10 MG Nā'ālehu water tank.

1.1.1 OBJECTIVES OF THE PROPOSED ACTION

DWS' overall goals for the proposed project include the following:

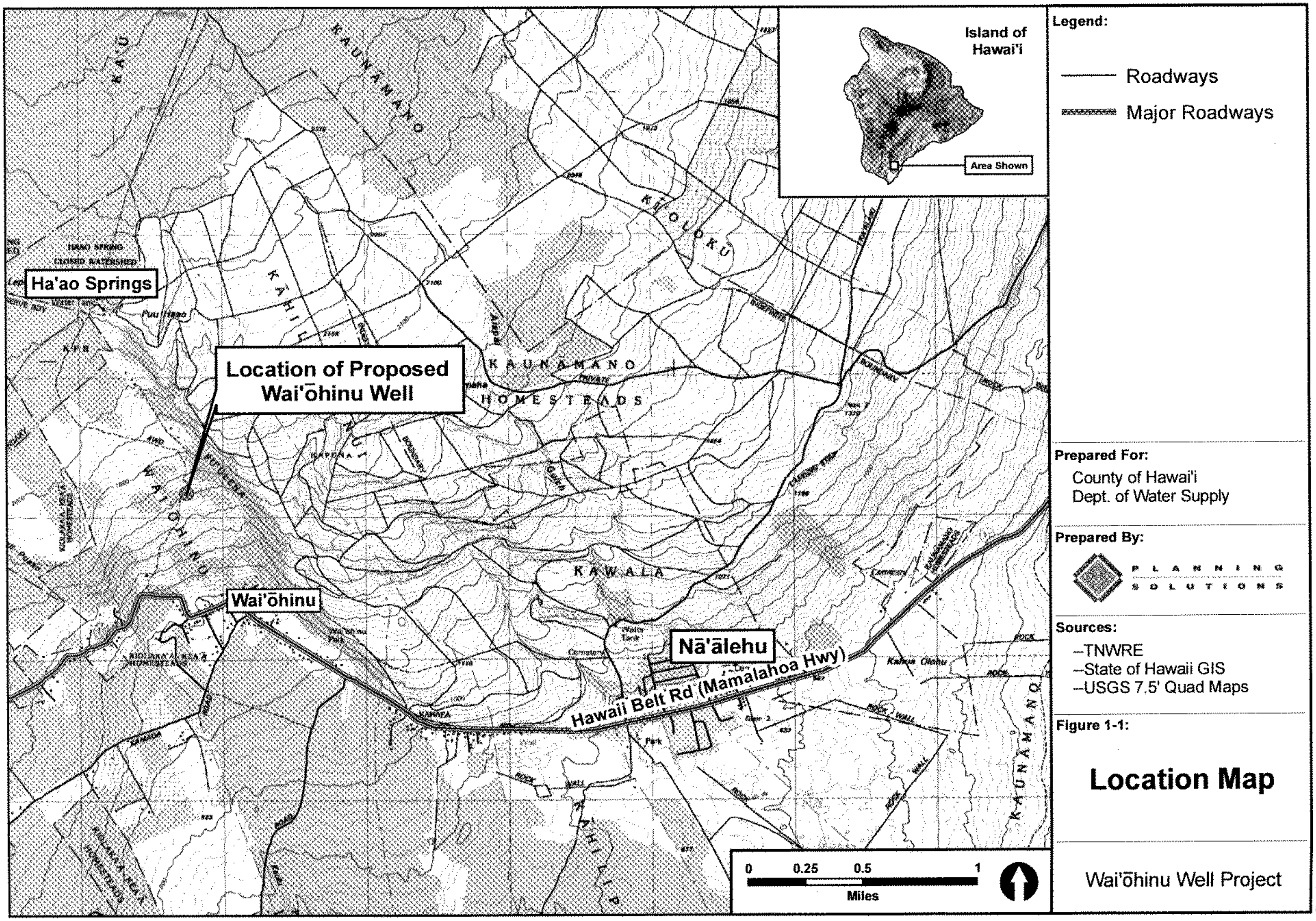
- Reduce dependencies on potable water sources which will be subject to the enhanced SWTR by exploring for and developing a well in an area with known groundwater resources.
- Continue to provide DWS customers in the Wai'ōhinu-Nā'ālehu-South Point system with an adequate supply of affordable potable water to support future projected water use.
- Continue to comply with all applicable State and Federal regulations regarding safe drinking water and treatment.

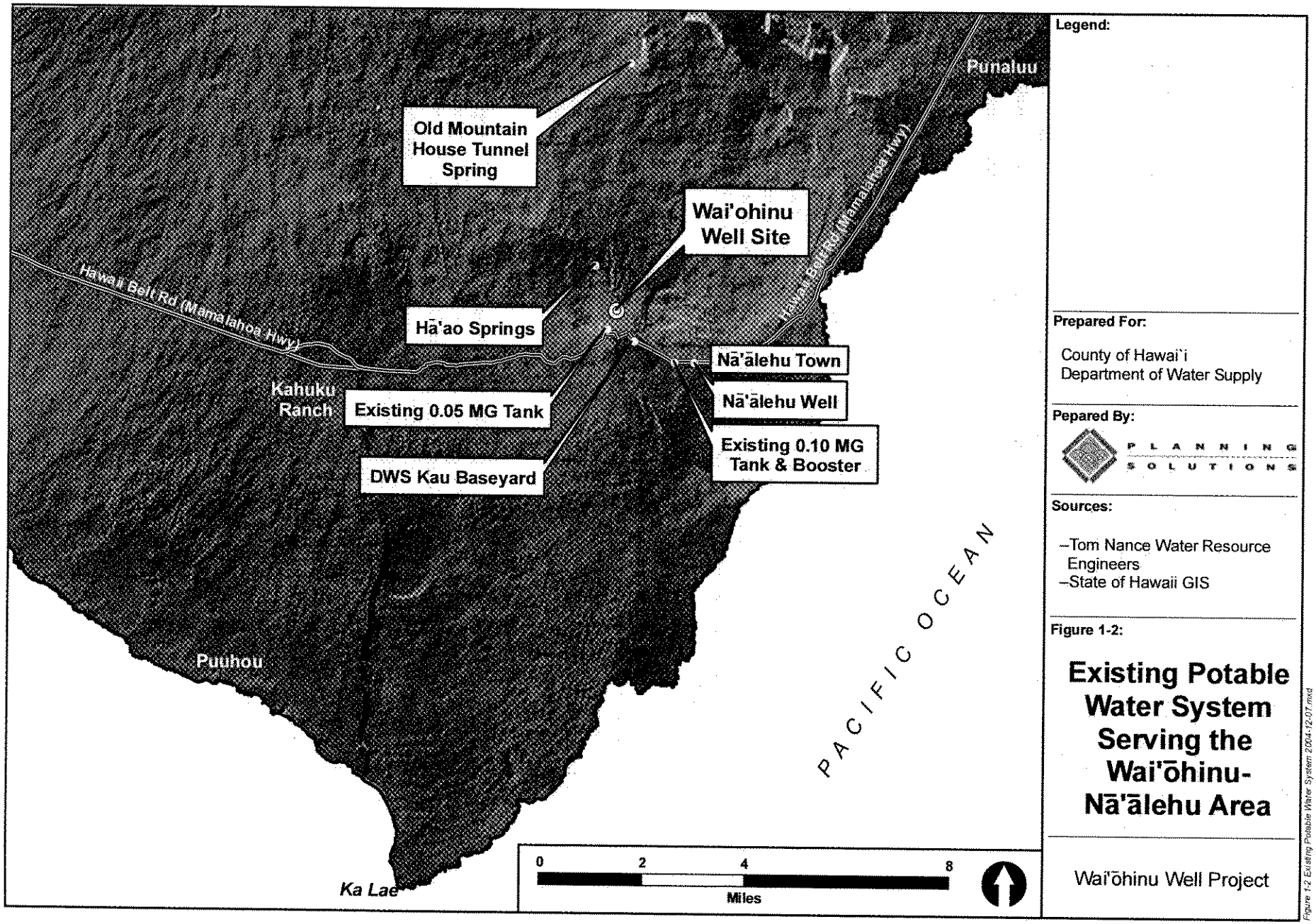
1.1.2 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

This EA is divided into the following parts:

- The remainder of Chapter 1 elaborates on the need for the proposed well. It explains why the DWS evaluation of the existing potable water system in the region and the nature of recent regulations applying to the existing water sources led DWS to decide to develop an additional well source in the Wai'ōhinu-Nā'ālehu-South Point system.
- Chapter 2 outlines the alternatives analyzed in this EA, as well as several other alternatives that were considered and rejected by DWS during earlier planning phases.

[1] *Federal Register*, Volume 67, page 1812; January 14, 2002; *Federal Register*, Volume 68, No. 154, page 47640; August 11, 2003.


Legend:
Roadways
Major Roadways
Island of Hawai'i
Area Shown
Ha'ao Springs
Location of Proposed Wai'ōhinu Well
Wai'ōhinu
Nā'ālehu
Hawaii Belt Rd (Mamalahoa Hwy)
KAUNAMANO
KEOLOKU
KĀHILI
KAUNAMANO HOMESTEADS
WAIŌHINU
KAWALA
0 0.25 0.5 1
Miles
Prepared For:
County of Hawai'i
Dept. of Water Supply
Prepared By:
PLANNING SOLUTIONS
Sources:
--TNWRE
--State of Hawaii GIS
--USGS 7.5' Quad Maps
Figure 1-1:
Location Map
Wai'ōhinu Well Project


Old Mountain House Tunnel Spring
Wai'ohinu Well Site
Hā'ao Springs
Nā'ālehu Town
Nā'ālehu Well
Existing 0.10 MG Tank & Booster
Existing 0.05 MG Tank
DWS Kau Baseyard
Kahuku Ranch
Hawaii Belt Rd (Mamalahoa Hwy)
Hawaii Belt Rd (Mamalahoa Hwy)
Punaluu
Puuhou
Ka Lae
PACIFIC OCEAN
0
2
4
8
Miles
Legend:
Prepared For:
County of Hawai`i
Department of Water Supply
Prepared By:
PLANNING SOLUTIONS
Sources:
--Tom Nance Water Resource Engineers
--State of Hawaii GIS
Figure 1-2:
Existing Potable Water System Serving the Wai'ōhinu-Nā'ālehu Area
Wai'ōhinu Well Project
Figure 1-2 Existing Potable Water System 2004-12-07.mxd

- Chapter 3 describes the proposed action of constructing and operating the well in detail, providing specifications for its location, design, phasing, and operation.
- Chapter 4 describes the existing environment and analyzes the potential for impacts on environmental, cultural, and socioeconomic resources caused by the proposed project and alternatives. It also outlines strategies for minimizing and mitigating unavoidable adverse effects.
- Chapter 5 discusses the consistency of the proposed well with relevant plans, policies, and controls at local, regional, state, and federal levels.
- Chapter 6 provides justification for the determination of a Finding of No Significant Impact (FONSI) by considering each individual significance criterion with respect to the proposed well.
- Chapters 7 and 8, respectively, list the parties consulted and the references cited during preparation of this EA.

1.2 NEED FOR AN ADDITIONAL WELL

1.2.1 EXISTING POTABLE WATER SYSTEM

DWS presently supplies the needs of the Wai'ōhinu-Nā'ālehu-South Point system using water from Nā'ālehu Well, Hā'ao Spring, and Old Mountain House Tunnel Spring (see Figure 1-2). The water from the Old Mountain House Tunnel is piped to two tanks at Hā'ao Springs. From there, a 4-inch main supplies water to the South Point area, and an 8-inch line serves the communities of Nā'ālehu and Wai'ōhinu. The Nā'ālehu Well (State Well No. 0335-01) is used primarily as a backup source. It has a capacity of 0.54 million gallons per day (MGD) and pumps water into a 0.10 MG tank that serves Nā'ālehu town.

Currently, customers in the Hā'ao and South Point area are completely dependent on water from Hā'ao Spring and Old Mountain House Tunnel Spring. Customers in Wai'ōhinu, Nā'ālehu, and Discovery Harbor also get most of their water from the springs, but have access to the Nā'ālehu Well as a backup source. During dry periods when the flow from the two springs is reduced, a series of small booster pump stations lifts water from the Nā'ālehu tank to higher elevation tanks in the Wai'ōhinu area so that Hā'ao and South Point customers can continue using the spring sources.

1.2.2 POTABLE WATER CONSUMPTION

Potable water consumption in the Wai'ōhinu-Nā'ālehu-South Point system during the September-October 2004 billing cycle was about 385,000 gallons per day (0.385 MGD). Of this total, about 0.331 MGD was used by customers in Wai'ōhinu, Nā'ālehu, and Discovery Harbor. The remaining 0.054 MGD went to metered users in Hā'ao and South Point. This usage rate is comparable to annual average daily usage. For example, in 2003, metered use for the system averaged 0.366 MGD. Peak daily demand can reach about 1.5 times the average daily use, which is almost 0.6 MG based on current consumption rates. This exceeds the pump capacity of the Nā'ālehu Well (0.54 MGD), therefore a backup source is essential both to meet current demand and allow for growth in the system. DWS is proposing the new well to ensure that a reliable and adequate backup source exists when the two spring sources are abandoned due to increased treatment requirements. The new well would initially have a capacity of 0.65 MGD, which would meet current demand and allow for moderate growth. DWS plans to upgrade it and the Nā'ālehu Well when additional capacity is needed.

1.2.3 COMPLIANCE WITH FEDERAL AND STATE DRINKING WATER STANDARDS

The Federal Safe Drinking Water Act (42 U.S.C. § 300h-3(e)) requires that all public water systems meet stringent water quality standards. These standards cover a long list of potential chemical, radiological and biological contaminants. The standards distinguish between surface water and groundwater sources, with the testing and monitoring requirements for surface water sources and for groundwater sources under the direct influence of surface water (GWUDI) being far greater than those for groundwater sources.

In 1990, the Federal Science Advisory Board (SAB) cited drinking water contamination as one of the most important environmental risks and indicated that disease-causing microbiological contaminants (i.e., pathogens such as, bacteria, protozoa, and viruses) are probably the greatest remaining health-risk management challenge for drinking water suppliers. In response to this finding, the U.S. EPA has now finalized the Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR). The purpose of the LT1ESWTR is to improve control of microbial pathogens, specifically the protozoan *Cryptosporidium*, in drinking water. The rule requires certain public water systems to meet strengthened filtration requirements and to calculate levels of microbial inactivation to ensure adequate microbial protection. This rule, which addresses systems serving fewer than 10,000 persons, builds upon the framework established for larger systems in the Interim Enhanced Surface Water Treatment Rule (IESWTR).

The LT1ESWTR provisions contain the following requirements:

- All systems must remove 99 percent of *Cryptosporidium*.
- Filtered systems must comply with strengthened combined filter effluent turbidity performance requirements to assure 99 percent removal of *Cryptosporidium*.
- Conventional and direct filtration systems must continuously monitor the turbidity of individual filters and maintain them as needed to keep turbidity at acceptable levels.
- Systems will be required to develop a profile of microbial inactivation levels unless they perform monitoring which demonstrates their disinfection byproduct levels are less than 80 percent of the maximum contaminant levels.
- Unfiltered systems must comply with updated watershed control requirements that add *Cryptosporidium* as a pathogen of concern.

The State Department of Health (DOH) is expected to classify both Old Mountain House Tunnel Springs and Hā'ao Springs as groundwater under the direct influence of surface water (GWUDI), which means water from the springs must meet the requirements of the Surface Water Treatment Rule (SWTR), including enhanced treatment procedures. In order to comply with these new requirements, the DWS would have to construct extensive new treatment facilities and to maintain an expensive ongoing treatment and testing program. The capital and operating costs of these are prohibitively high for a small system such as that serving the Wai'ōhinu-Nā'ālehu-South Point system, and would effectively eliminate the two springs as economically viable water sources. The new well would reduce existing dependencies on the spring sources and provide a cost-effective means of meeting current and anticipated Federal requirements.

2.0 ALTERNATIVES CONSIDERED

2.1 FRAMEWORK FOR CONSIDERATION OF ALTERNATIVES

Title 11, Chapter 200 of the Hawai'i Administrative Rules (HAR §11-200) contains the Department of Health's Environmental Impact Statement Rules. HAR §11-200-5 deals with "agency actions" such as the one that DWS is proposing. It requires that, for all agency actions that are not exempt as defined in HAR §11-200-8, the agency consider environmental factors and available alternatives and disclose these in an environmental assessment or environmental impact statement. HAR §11-200-9 requires the proposing agency to analyze alternatives, in addition to the proposed action in the environmental assessment. HAR §11-200-10 establishes the required contents of environmental assessments. Among the requirements listed, HAR §11-200-10 (6) calls for an identification and summary of impacts and alternatives considered (emphasis added).

In accordance with these requirements, DWS considered a number of alternatives before determining that the proposed project is the best course of action. These included "No Action", enhanced treatment, enhanced water conservation, development of new surface or well sources at other locations, and delayed action. DWS concluded that only two of these alternatives, merit consideration in the impact analysis portion of this EA. They are "No Action" (as required by Chapter 343), and the proposed action of constructing the new well as currently designed. The other alternatives failed to achieve the project objectives outlined in Section 1.1.1 above. The following two subsections describe the alternatives considered in preparation of this EA and the criteria DWS used to decide whether to include them in the impact analysis presented in Chapter 4.

2.2 ALTERNATIVES ADDRESSED IN DETAIL IN THE EA

2.2.1 PROPOSED ACTION: CONSTRUCT NEW EXPLORATORY WELL AT WAI'ŌHINU

The proposed action stems from DWS' need to continue to provide safe, reliable, and affordable drinking water to serve their Wai'ōhinu-Nā'ālehu-South Point system. DWS has concluded that developing a new well source is the most cost-effective means of accomplishing this objective and the others outlined in Section 1.1.1. DWS selected the proposed project site for several reasons, including:

- The proposed site's close proximity to the existing water transmission and distribution system from Old Mountain House Tunnel and Hā'ao Springs avoids the need for new water line construction.
- Data from the Wai'ōhinu exploratory well located 2000 feet southwest of the site indicates that clean, cold, high-level groundwater will be accessible to the new well, thus eliminating some of the unknowns involved in water source exploration.
- The proposed location is equipped with a tank control valve station that would be retained to serve as a backup control for the proposed well. Abandoning the existing facilities at the proposed site would constitute an unnecessary waste of resources, and an alternate site would lack the added security of a backup control valve station.

DWS believes constructing the well at the proposed site would best allow them to meet all of their stated objectives, and thus represents their preferred course of action.

2.2.2 NO ACTION ALTERNATIVE

The "No Action" Alternative consists of the continued reliance on the Hā'ao and Old Mountain House Tunnel springs as primary water sources for the Wai'ōhinu-Nā'ālehu-South Point system. This alternative is acceptable under current drinking water standards, but will not be economically feasible once increased treatment requirements come into effect. By developing a new well source, DWS will be able to comply with the changing regulations while still providing an affordable and

adequate water supply to meet its customers' current and future needs. "No Action" would not meet the project objectives and is not, therefore, a viable alternative. It is included in this EA primarily to fulfill the legal requirements of NEPA, Chapter 343 and HAR §11-200. It also provides a baseline against which to measure the environmental and social impacts of the proposed action.

2.3 ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS

2.3.1 ENHANCED TREATMENT ALTERNATIVE

As discussed in Section 1.2.3, compliance with new federal and state regulations applicable to retaining Hā'ao and Old Mountain House Tunnel springs as primary sources would require DWS to implement the expensive filtration, monitoring and treatment processes described in Section 1.2.3. The costs associated with compliance are too high for the small Wai'ōhinu-Nā'ālehu-South Point system to bear and would prevent DWS from providing its customers in that area with affordable water. Consequently, upgrading the facilities and operational procedures to allow continued use of the existing water source is not a viable alternative.

2.3.2 SOURCE REDUCTION

This alternative would entail abandoning Hā'ao and Old Mountain House Tunnel springs as primary water sources for the Wai'ōhinu-Nā'ālehu-South Point system without constructing the Wai'ōhinu well to replace them. This would eliminate the costs associated with enhanced water treatment, however it would leave the Nā'ālehu Well as the sole potable water source serving the Wai'ōhinu-Nā'ālehu-South Point system. As discussed in Section 1.2.2, the 0.54 mgd-capacity well alone is not sufficient to meet the current peak daily water demands of the area. Moreover, County regulations require that each water system have a backup source of potable water, a requirement this alternative would not meet.[2]

2.3.3 ENHANCED WATER CONSERVATION

The purpose of the proposed new well is not to offset an increase in demand, although its capacity will be large enough to accommodate some growth. Rather, it is intended primarily to serve as a substitute for the water that is being provided by two spring sources that are expected to be subject to increased treatment requirements in the near future. As discussed above, retaining the spring sources after these regulations take hold is not economically feasible, and County regulations require the Nā'ālehu well to have a backup source. Thus, decreasing water use in the proposed well's service area would not eliminate the need to find a substitute for the discontinued spring sources, although it would benefit the system in other ways.

2.3.4 DEVELOPMENT OF OTHER GROUNDWATER SOURCES

As discussed in Chapter 4, high-level groundwater of excellent quality that is not subject to salinity intrusion is available in many parts of the region. From a hydrologic perspective, such alternative well sites are feasible. However, none offer the operating and cost advantages of the selected site for the distribution of water to DWS' customers.

2.3.5 DELAYED ACTION

The long lead time necessary to drill, test and develop a production well and the immediacy of the surface water treatment requirements make expedient action on DWS' part important. Delaying development of the well could negatively affect DWS and potentially their customers in the Wai'ōhinu-Nā'ālehu-South Point system if the new regulations take effect before an additional

[2] Water System Standards 2002, Division 100 Planning, Section 111 – Water Requirements, Subsection 111.08 Total Pumping Capacity.

groundwater source is established. Replacement of the currently used spring with a groundwater source will eliminate virtually any potential that may currently exist for the introduction of surface-water contaminants into the system and will provide a reliable backup source for the existing Nā'ālehu well. The DWS wants to act expeditiously to ensure the delivery of safe and reliable drinking water to its customers in Wai'ōhinu, Nā'ālehu, and South Point.

3.0 PROJECT DESCRIPTION

3.1 LOCATION AND EXISTING USE OF THE PROPOSED SITE

The proposed Wai'ōhinu well site is in the Ka'ū District of the Island of Hawai'i. The site is located within TMK 9-5-03:019, approximately 0.5 miles north of where Māmalahoa Highway passes through the community of Wai'ōhinu. The proposed well site is on State of Hawai'i land. The State will assign DWS management jurisdiction of the property via an Executive Order upon approval of the well project. Title and ownership of the land will remain with the State. The 0.5 MG Wai'ōhinu Homestead Reservoir and control station is located immediately adjacent to the proposed well site and is also State-owned. Figure 3-1 depicts the existing facilities and topography at the site.

Of the three existing water sources serving the Wai'ōhinu-Nā'ālehu-South Point system, the site is nearest to Hā'ao Spring, which is located just under a mile north of the site. Access to the site (and to Hā'ao Spring) is via Wai'ōhinu-Hā'ao Springs road, which is a gravel road along flat stretches and concrete-paved in steeper areas. Overhead electrical service (provided by HELCO) stops about 2,000 feet south of the proposed well site along Wai'ōhinu-Hā'ao Springs Road.

Currently the portions of the proposed well site not covered by DWS facilities is covered with scrub grass and is leased for cattle grazing. Photographs of the existing tank and surrounding area are included in Figure 3-2.

3.2 DESCRIPTION OF THE PROPOSED ACTION

3.2.1 OVERVIEW

The proposed action consists of two phases.

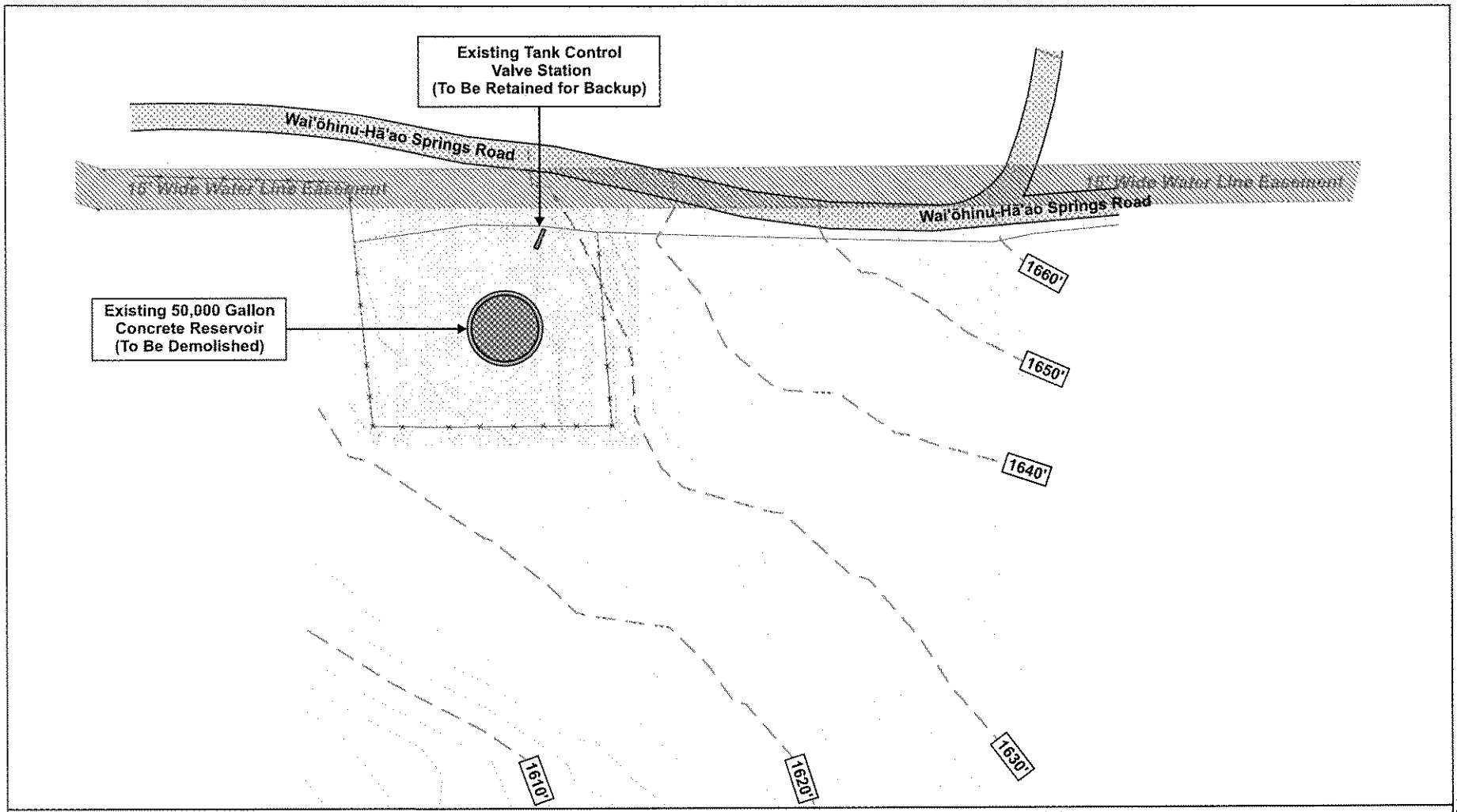
- Phase 1 involves drilling, casing, and pump testing an exploratory well on vacant land adjacent to DWS' existing 0.05 MG Wai'ōhinu Homesteads reservoir and control valve station.
- Phase 2 (which would be undertaken only if pump tests confirm that the exploratory well's yield and water quality is adequate), involves outfitting the well for production and constructing a new 0.50 MG reservoir and related facilities. The existing reservoir would be abandoned or demolished and the control valve station retained as a backup control system. The DWS would proceed with its plan to install a Supervisory Control and Data Acquisition (SCADA) master control unit inside its Ka'ū Baseyard and put in remote SCADA units at the new well and at its other facilities in the Wai'ōhinu-Nā'ālehu-South Point system.

Once the new well is operational, it would replace Hā'ao and Old Mountain House Tunnel springs as a primary potable water source for the Wai'ōhinu-Nā'ālehu-South Point system.[3] Section 3.2.2 describes the facilities as they would appear once fully developed. Section 3.2.3 describes the activities that would be undertaken during their construction.

3.2.2 DESIGN OF THE PROPOSED FACILITIES

Figure 3-3 provides a site plan of the proposed well and reservoir. Figure 3-4 contains a cross-section of the proposed well. Figure 3-5 depicts the proposed control building. Major components of the proposed design are described below.

[3] The spring sources would be retained for the immediate future to supply the Hā'ao and South Point service areas. When the springs become subject to the SWTR, DWS will abandon them and install a booster system at the new well site to provide water to those service areas.



Prepared For:
County of Hawai'i
Dept. of Water Supply

Prepared By:
PLANNING SOLUTIONS

Source:
Tom Nance Water Resource Engineers

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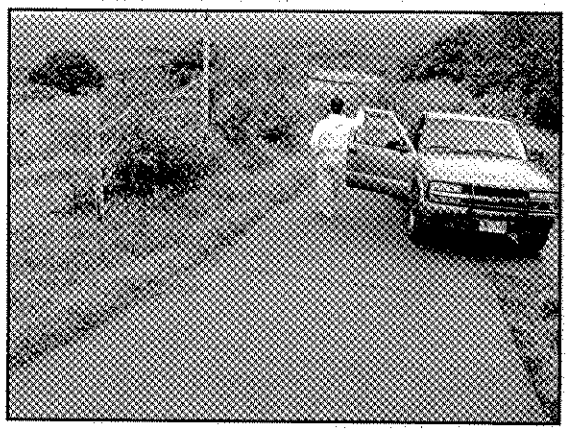
Figure 3-1:

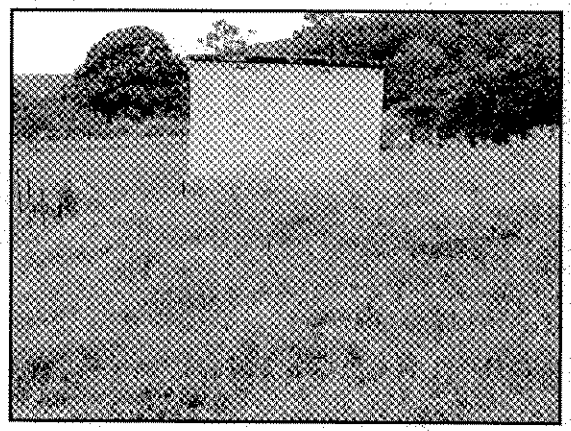
Existing Facilities & Site Topography

Wai'ōhinu Well Project

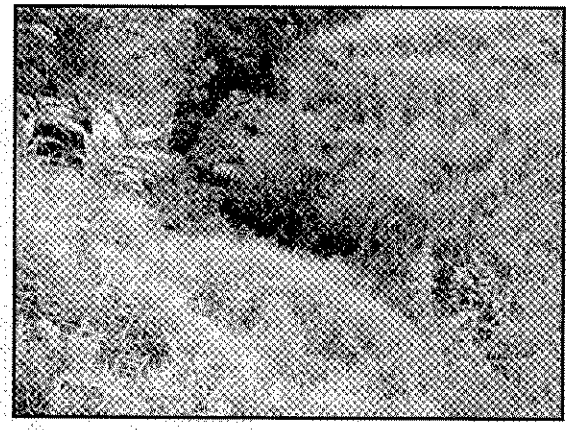
Figure 1-4 Existing Facilities & Site Topography 2004-12-07.cdr



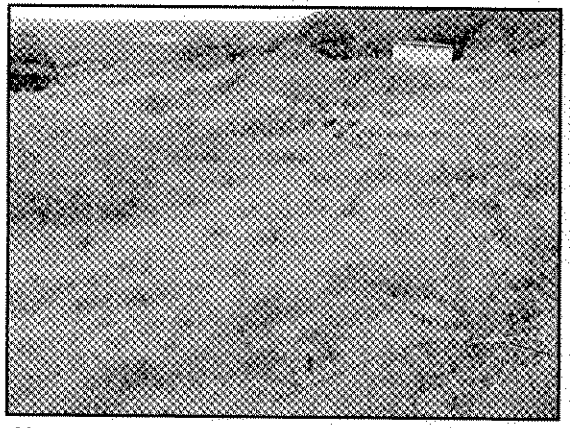
View from road uphill of proposed well site.



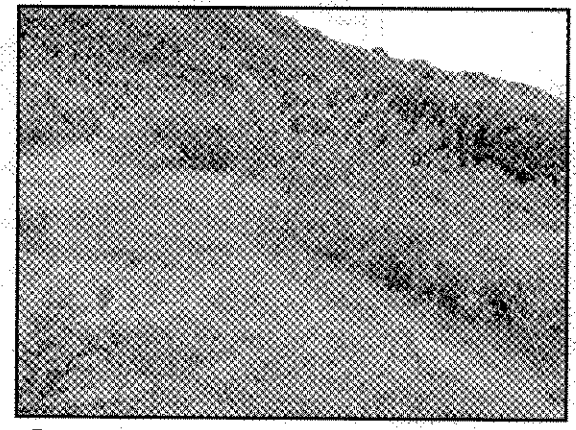
The existing reservoir.



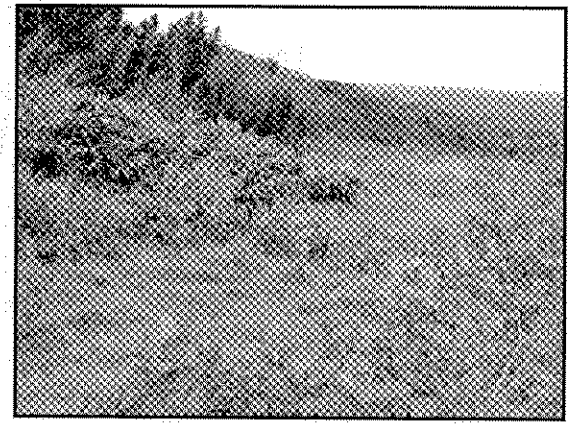
A small natural drainageway east of the project site.



Vegetation and topography at proposed well site.



Dense vegetation east of the proposed well site.



Pasture downslope and south of the proposed well site.

Prepared For:
County of Hawai'i
Dept. of Water Supply

Prepared By:
PLANNING SOLUTIONS

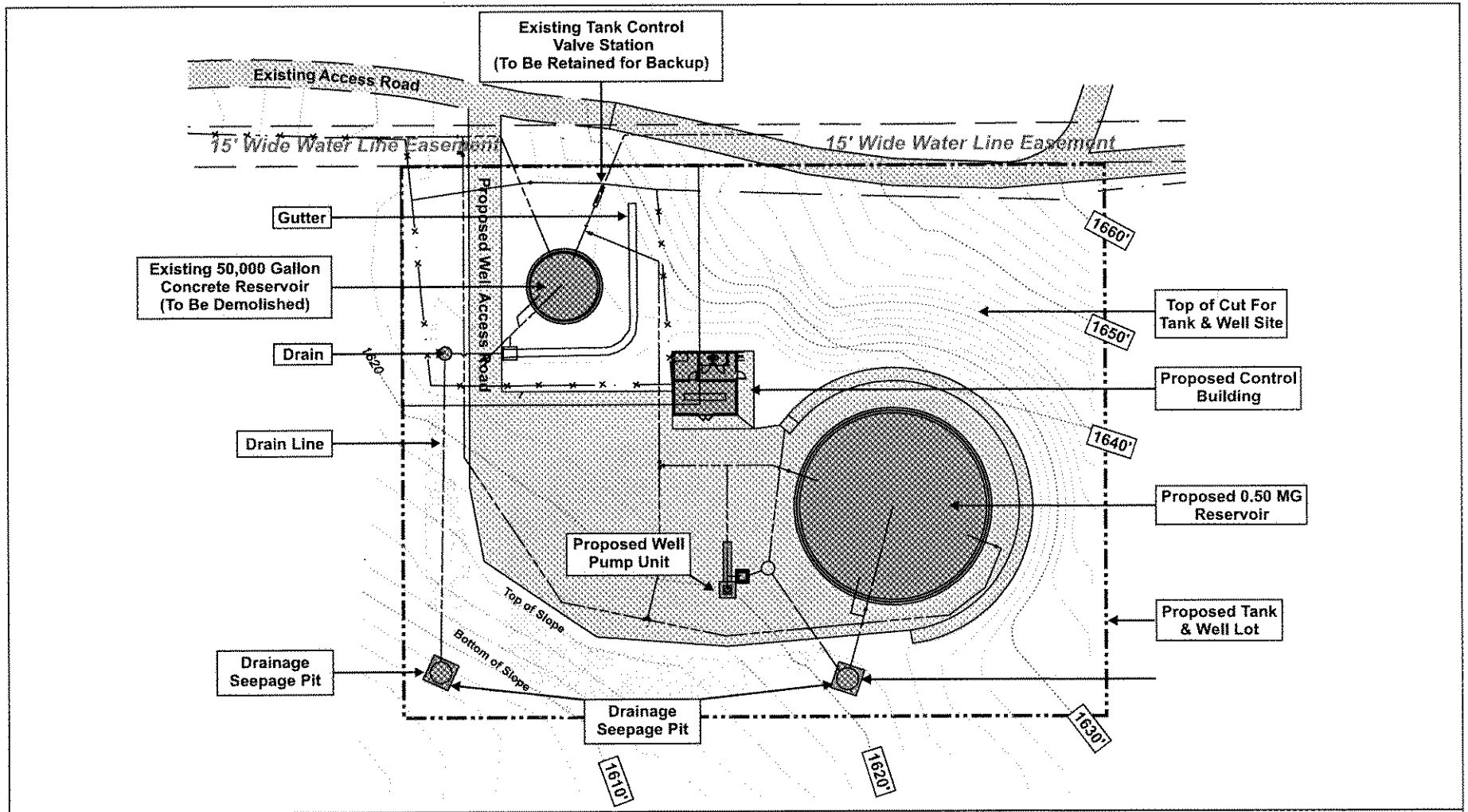
Source:
Planning Solutions, Inc. (2004)

Figure 3-2:

Views of the Existing Facility

Wai'ōhinu Well Project

Figure 3-2 Views of the Existing Facility 2004-12-07.cdr



Prepared For:
County of Hawai'i
Dept. of Water Supply

Prepared By:
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Source:
TNWRE

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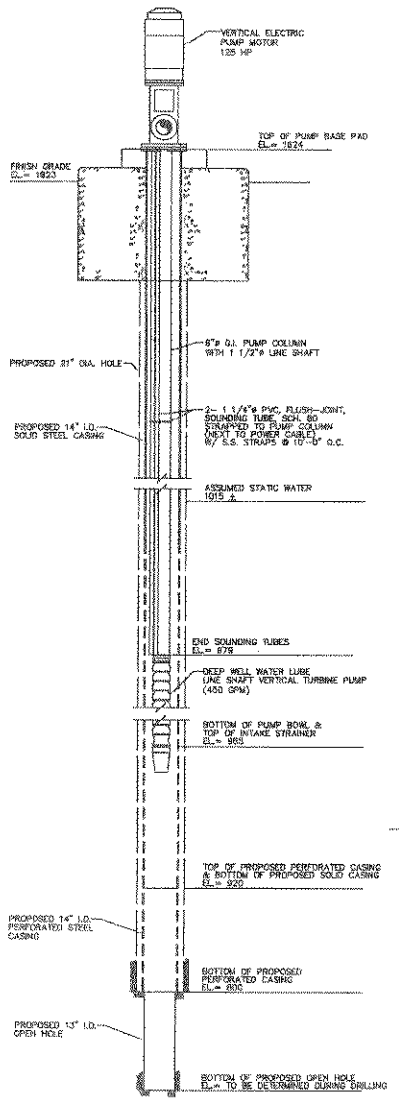
Figure 3-3:

Site Plan

Wai'ōhinu Well Project

Figure 3-3 Site Plan 2004-12-08.cdr



SECTION "B-B"
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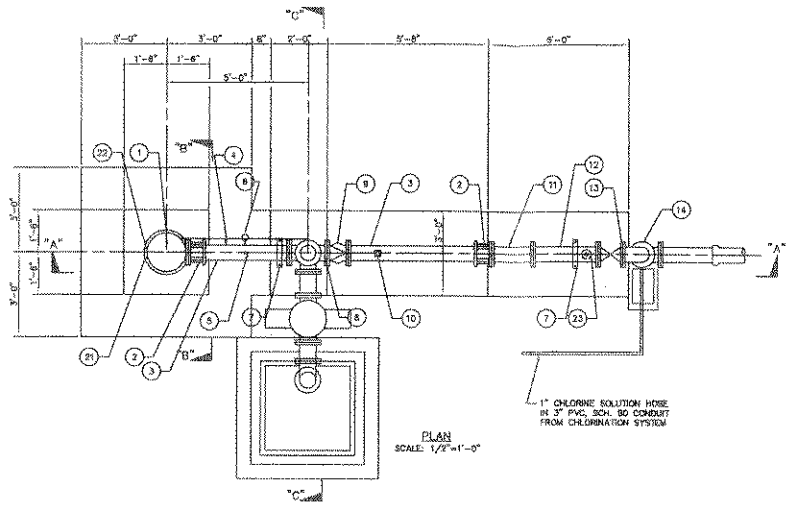
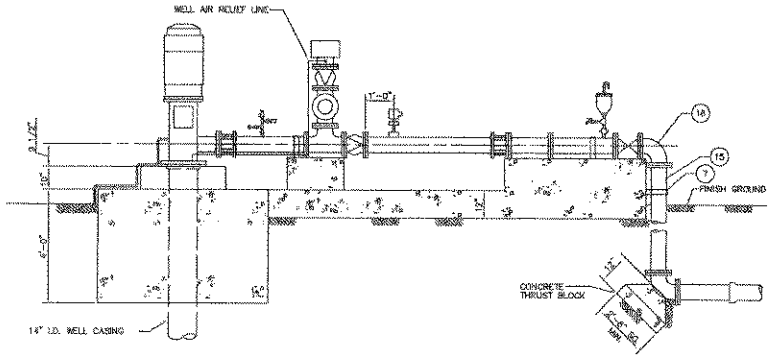


PLAN
SCALE: 1/2"=1'-0"



SECTION "A-A"
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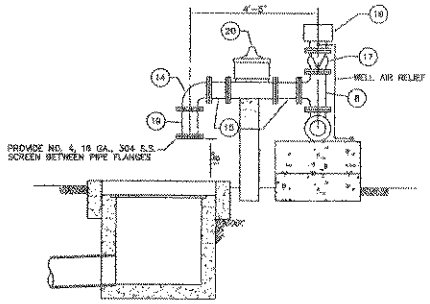


SECTION "C-C"
SCALE: 1/2"=1'-0"

Material List:

1. 6" Submersible Pump Discharge Head
2. 6" D.I. Flanged Coupling Adapter w/ Anchor Pins
3. 6" D.I. Pipe, PEXFE, Length to Suit
4. 1/4" Sampling Tap
5. Pressure Switch Unit
6. 1/4" Corp. Stop (Test Gage Connection)
7. Pipe Strap
8. 6" D.I. Tee, FE
9. 6" Center-Guided Check Valve, FE
10. 1 1/4" Flow Switch
11. 6" S.S. Ultrasonic Meter Spool w/Transducers
12. 6" D.I. Pipe, FE, 1'-6" Long
13. 6" D.I. Gate Valve, FE, OS&Y
14. 6" 1/4 D.I. Bend, FE
15. 6" D.I. Pipe, PExFE, Length to Suit
16. 6" 1/4 D.I. Bend, MJ
17. 6" Pump Vacuum Release Check Valve, FE
18. 6" Screen & Fitting
19. 6" D.I. Pipe, FE, 1'-0" Long
20. 6" Pump Control Valve, FE, w/Solenoid Control Switch
21. Sounding Tube w/Well Sensor
22. Extra Sounding Tube, Provide: 1 1/4" x 6" Bronze Nipple Through Discharge Head, & Bronze Cap (Hand-Tight)
23. 1" Air Relief Valve (ARV) w/Spigot

Prepared For:

County of Hawai'i
Dept. of Water Supply

Prepared By:

P L A N N I N G
S O L U T I O N S

Source:

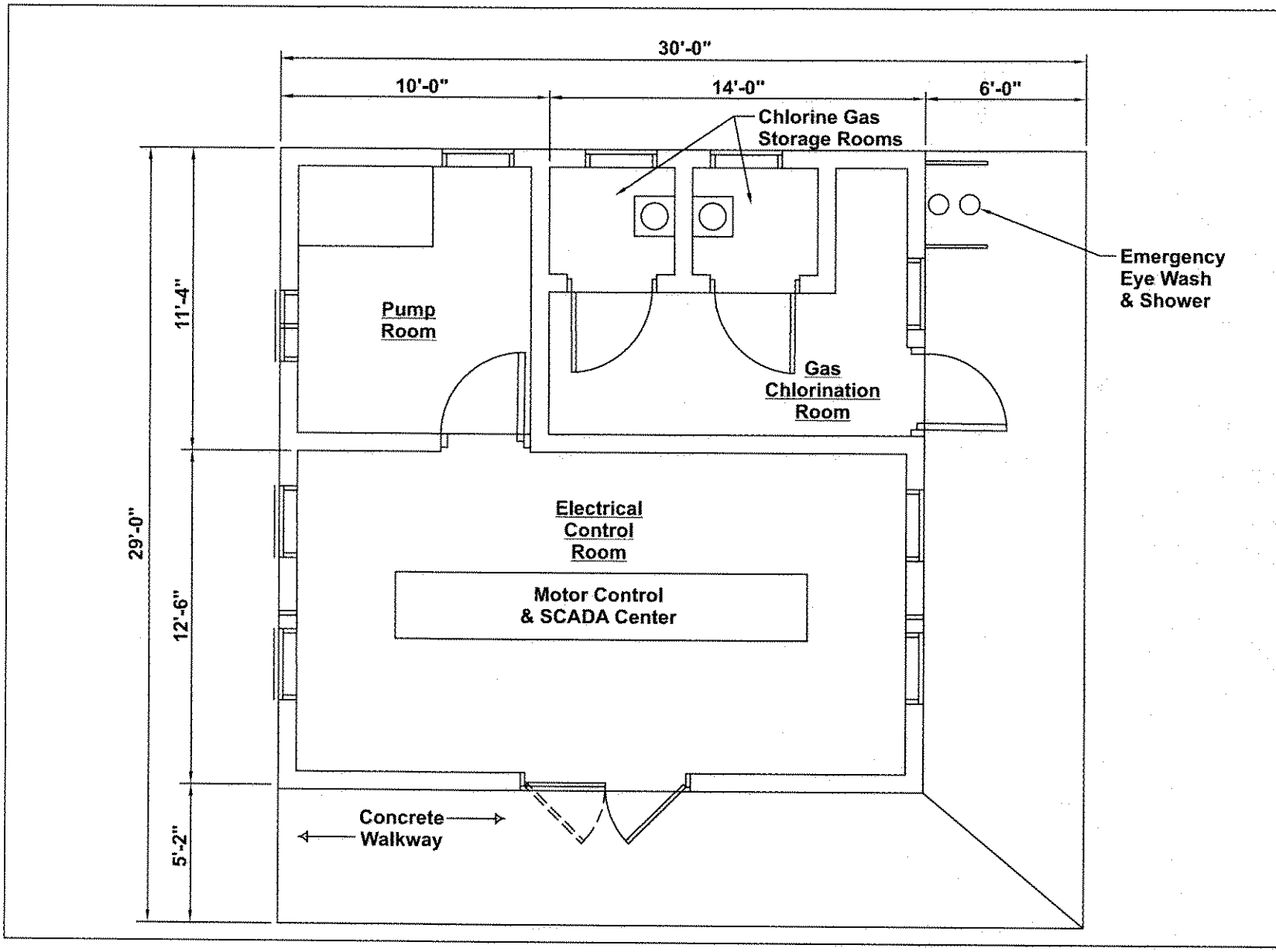
Tom Nance Water Resource Engineers (TNWRE)

Figure 3-4:

Well Pump Detail

Wai'ohinu Well Project

Figure 3-4 Well Pump Plan & Details (Kick-Off).dgn



Prepared For:
County of Hawai'i
Dept. of Water Supply

Prepared By:
PLANNING SOLUTIONS

Source:
Tom Nance Water
Resource Engineers

Figure 3-5:

Control Building

Wai'ōhinu Well
Project

Figure 3-5 Control Building 2004-12-07.cdr

3.2.2.1 Drill Depth and Well Casing

Based on data from the Wai'ōhinu Exploratory Well (State Well No. 0437-01 completed by the USGS), groundwater is believed to stand about 1,000 feet or more above sea level at the proposed well site.[4] DWS expects to complete the new well to a depth of 820 feet below ground surface or about 800 feet above sea level. The borehole would be 21 inches in diameter. DWS' preliminary plans call for it to install a 14-inch solid steel casing in the upper 700 feet of the drilled hole; it would install approximately 120 feet of perforated casing below that. The well may also have a 13-inch diameter open hole below the bottom of the casing if necessary to achieve the desired yield. The 14-inch well casing diameter accommodates the pump's column pipe and sounding tubes around the pipe couplings. It also provides sufficient space for the DOW to replace the in-line shaft that would be installed initially with a 4-pole submersible pump and motor should it ever wish to do so.

3.2.2.2 Well Pump

Tentative plans call for the use of a water-lubricated line shaft vertical turbine pump rated at 450 gallons per minute (GPM).[5] Based on the anticipated total dynamic pumping head of 660 feet, it will be powered by a 125 HP electric motor. The pump capacity and motor size will reviewed and, if necessary, adjusted once pump test results are available. The pump outfitting design may also include installation of a muting device to attenuate the sound from the electric motor during operation should it be determined necessary.

3.2.2.3 Control Building

The proposed design includes a single-story, naturally ventilated, concrete block structure 24 by 24 feet (Figure 3-5). It would house the motor control center, electrical control panel, SCADA remote system, alarm system, and chlorination system. A concrete walkway will be installed on two sides.

3.2.2.4 0.5 MG Reservoir

The proposed design calls for a standard DWS reinforced concrete tank with a capacity of 0.5 million gallons. The tank will have a 34.5 feet inside diameter and 18 foot operating height. It will be designed to meet seismic zone 4 standards (see Section 4.10.2).

3.2.2.5 SCADA System

DWS would install a Supervisory Control and Data Acquisition (SCADA) system to monitor and control system operation. The SCADA facilities would be installed during Phase Two of this project.[6]

3.2.2.6 Electricity and Communications

Electrical Power. Electrical power would be utilized for lighting and general power in the control building and for the proposed 125 HP pump motor. Start/Stop operation of the well pump would be controlled by a sensor measuring the water level in the new 0.5 MG concrete reservoir. The electrical power will be delivered to the well site using overhead electrical lines owned and maintained be the Hawaii Electric Light Company (HELCO). Currently, three phase electrical service ends approximately 2,000 feet south of the proposed site. The project would require HELCO to upgrade electrical service to the site to provide 3-phase power for the well pump. Utility metering will

[4] The USGS test well was drilled 2,000 feet southwest of the proposed well site at an elevation of 1,297 feet.

[5] The proposed well casing is large enough to accommodate up to a 750 GPM pump. This will allow DWS to upgrade the pump in the future to accommodate increased water demands if the area grows.

[6] The DWS is developing a SCADA system that will allow it to control key components of its facilities in the Wai'ōhinu – Nā'ālehu service area. The master base station for the entire system SCADA system will be at the Ka'ū Baseyard. Communication among sites will use radio telemetry, if possible; where this is infeasible, DWS will use telephone telemetry. In addition to the SCADA remote terminal unit planned for the new control building at the Wai'ōhinu well site, DWS is installing a master control unit at the Ka'ū Baseyard and RTUs at the existing Nā'ālehu Production Well and at the 0.10 MG Nā'ālehu Tank and Booster Station. All the improvements would be indoors, with the exception of a small rooftop antenna.

conform to HELCO's standards and design requirements. The SCADA units planned for Ka'ū Baseyard and DWS' other facilities also require electricity, but those facilities are already outfitted with adequate electrical service and will not require upgrades.

Communications. DWS plans to use radio and licensed DWS FCC frequencies for the SCADA telemetry communications. Telephone service by Verizon is also available at the lower tank site on Wai'ōhinu-Hā'ao Springs Road if it is necessary for the SCADA system at the new well site. The final choice between the two will be made during the design phase of the project.

3.2.2.7 Seepage pits

Two seepage pits will be constructed on the proposed well site (see Figure 3-3). The one on the east side of the site will be approximately 8 feet in diameter and 8 feet deep. It will initially be used to dispose of water from the pump test; once the well is operational, it will accommodate water from the pump startup and provide a drain for the 0.50 MG tank. Another seepage pit located on the southeast corner will provide stormwater drainage from the site and act as a drain for the existing tank.

3.2.3 WELL-DRILLING AND CONSTRUCTION ACTIVITIES

3.2.3.1 Phase 1: Exploratory Well Drilling, Casing, and Pump Testing

The contractor will grade a level well drilling pad on the heavily vegetated and relatively steeply sloped tank site to provide a working area. Including the casing installation and pump testing, a construction period of up to 9 months is expected (see Table 3-1). Pump testing will be at rates of up to 700 gallons per minute and may extend up to seven consecutive days. The contractor may seek disposal of pumped water off site, subject to compliance with all NPDES requirements of the State Department of Health (Hawaii Administrative Rules 11-55, Appendix I).

3.2.3.2 Phase 2: Production Well Outfitting & Construction of Related Facilities

The research that has been conducted to date suggests that there are no sources of groundwater contamination that could affect the groundwater that the well would tap. DWS will analyze water collected during the pump testing of the exploratory well to ensure that the quality of water is satisfactory. It will incorporate this information into the engineering report that it will submit to the State Department of Health Safe Drinking Water Branch (SDWB). The report will address all the requirements set forth in Hawai'i Administrative Rules §11-20-29. Before the well is placed into service as part of the Wai'ōhinu-Nā'ālehu-South Point system, DWS will obtain approval from the SDWB, as required by these regulations.

As indicated in Table 3-1, the DWS expects that outfitting the well, demolishing the existing reservoir, and constructing the new on and off site facilities will take approximately 12 months. During that period, the contractor will finish grade the site, install access roads and underground piping and utilities, set up the SCADA system, and erect the reservoir and control building. The contractor will also install fencing, landscaping, and other minor site improvements.

3.3 IMPLEMENTATION SCHEDULE

Table 3-1 outlines the DWS schedule for the project.

3.4 PROJECT COSTS

The County of Hawai'i Department of Water Supply has authorized and funded the first phase, which consists of the well's development and pump testing. It is identified as DWS Job No. 2000-758, Wai'ōhinu Well Development. The second phase of the project may be partly funded by Federal funds through the State of Hawai'i's Drinking Water State Revolving Fund (DWSRF) program, which would constitute a Federal action and will require the project to meet all of the Hawai'i DWSRF program requirements (see Section 5.1.3 for further discussion).

Table 3-1. Preliminary Project Schedule

Task	*Estimated Duration*
Final Design	1 month
Design Review	2 months
Bid Solicitation	2 months
Award and Notice to Proceed	1 month
Exploratory Well Construction and Testing	9 months
Design & Construction/ Outfitting of Production Well & Control Facilities (including SCADA)	18 months
Commence Operation	31 months from start
Source: Tom Nance Water Resource Engineering	

The estimated construction cost for the initial phase consisting of drilling, casing, and pump testing the well is $580,000. The subsequent construction to outfit the well, build a new 0.50 MG reinforced concrete tank, install the control building and related SCADA facilities, and pay HELCO service charges is estimated to cost $2,050,000. Table 3-2 summarizes these estimated costs.

Table 3-2. Preliminary Project Costs

Item	*Estimated Cost*
Well Drilling, Casing, and Pump Testing (Exploratory Phase)	$580,000
Well Outfitting, Tank & Facility Construction (Development Phase)	$1,790,000
SCADA Improvements (Development Phase)	$160,000
HELCO Service Charge Extension (Development Phase)	$100,000
Total Estimated Construction Cost	**$2,630,000**
Estimated Design and Construction Administration Cost	**$290,000**
Total Estimated Project Cost	**$2,920,000**
Source: Tom Nance Water Resource Engineering	

4.0 EXISTING ENVIRONMENT, POTENTIAL IMPACTS & MITIGATION MEASURES

This chapter describes existing conditions within the area affected by the project, discusses its potential impacts, and describes measures that the DWS will take to minimize and mitigate those impacts. No significant lasting or secondary environmental impacts are anticipated from the construction of the project. Overall, the well and SCADA improvements will provide long-term public benefits to the Wai'ōhinu-Nā'ālehu-South Point area by ensuring that customers there receive affordable, high quality potable water.[7]

4.1 GEOLOGY, TOPOGRAPHY & SOILS

4.1.1 EXISTING CONDITIONS

The proposed Wai'ōhinu well site is situated on the southeastern flank of Mauna Loa. Most of the surface of this volcano is composed of geologically young lava flows. The region in which the project site is located was initially formed as part of the Nīnole shield volcano. That volcano emerged from the sea about 300,000 years ago, ultimately reaching an elevation of about 8,500 feet msl. Geologists believe the Nīnole volcano emerged around the same time or slightly after the birth of Kohala, which is considered the oldest of Hawai'i's volcanoes (Macdonald et al. 1983). Nīnole ceased activity about 100,000 years ago, at which time activity shifted to a site beneath the present summit of Mauna Loa. Since then, lava from Mauna Loa has almost completely buried the topography created by Nīnole and has accumulated a total volume of more than 10,000 cubic miles. The oldest dated rocks on the surface are 100,000 to 200,000 years old.

As shown in Figure 3-1 and Figure 3-2, the proposed Wai'ōhinu well site slopes steeply (16-18%) from northeast to southwest, with elevations varying from 1,610 to 1,660 ft. MSL. The existing storage tanks and exploratory well are on a graded level area that occupies the southwest portion of the proposed well and reservoir site.

The U.S. Soil Conservation Service classifies the soil at the project site as "Kona extremely rocky muck" (Sato et al. 1973). The soil is thin in most spots, generally between 5 and 12 inches thick, and overlies pāhoehoe lava bedrock. Soil permeability is quite high, and water rapidly runs through the soil and into cracks in the lava bedrock. Consequently, the erosion hazard is relatively low. The site and adjacent properties are not designated as Agricultural Lands of Interest to the State of Hawai'i.

4.1.2 POTENTIAL IMPACTS

As discussed in Section 3.2.3.1, substantial grading will be necessary for construction of the control building and the reservoir on the steep site. The contractor will upgrade the landscaping on the portions of the site not used for structures or pavement.

The Kona extremely rocky muck that constitutes the soil at the site is not particularly valuable for agriculture other than cattle grazing, which is its current use. The proposed project would not substantially change exposure to geological hazards or bar the use of significant geological resources (such as minerals).

[7] Most of the discussion focuses on the environmental characteristics of the proposed well site and surrounding area. With the exception of the small rooftop antenna for the master unit, the SCADA equipment that the DWS is installing at the Ka'ū Baseyard and DWS' other facilities will be entirely indoors.

4.2 HYDROLOGY

4.2.1 EXISTING CONDITIONS

There are no perennial streams, lakes, rivers, or wetlands near the well site. Surface runoff from upslope (north) of the site is intercepted by a small grass- and rock-lined natural drainageway that carries flow around the eastern side of the site (see Figure 3-2). Consequently, no runoff originating off the property can flow across it. No more than a trickle of water was present in the drainageway during a site visit on October 26, 2004, despite recent heavy rainfall.

As shown in Figure 4-1, groundwater exists in a basal lens in makai areas and as high-level groundwater in the mauka areas near the project site. The two spring sources currently serving the Wai'ōhinu-Nā'ālehu-South Point system are located at an elevation of approximately 2,200 feet above sea level. They are fed by a perched groundwater source that is hydrologically isolated from the groundwater (elevation approximately 1,000 feet above sea level) that the proposed well would use.

Although the geologic structures creating the high-level groundwater are not well known, they are most likely associated with Mauna Loa's south rift zone. The project site is near the boundary of two aquifer systems, the Nā'ālehu Aquifer System and the Ka Lae Aquifer System. While the proposed well is thought to be within the Nā'ālehu Aquifer System, the boundaries between the two systems are not well defined in the rift zone area where the project site lies. According to the State Commission on Water Resource Management (CWRM), the aquifer systems' sustainable yields are 117 MGD and 31 MGD, respectively.

Of the wells shown on Figure 4-1, only two are currently used. DWS' Well 0335-01 (the Nā'ālehu Well) is used for supplementary supply for DWS' Wai'ōhinu-Nā'ālehu-South Point system and Well 0240-01 along South Point Road is used to irrigate a field of Ka'ū Gold Oranges.

4.2.2 POTENTIAL IMPACTS

4.2.2.1 Construction Period.

Construction activities themselves will not substantially alter the quantity of stormwater runoff.[8] However, the grading will slightly alter the pattern (i.e., discharge points) of runoff, and the soil disturbance that will occur during construction will affect the quality of the stormwater runoff.

The contractor will use best management practices as necessary during construction of the well site to prevent eroded soil, construction debris, and other pollutants from leaving the site via runoff. Areas that have been grubbed and/or graded will be stabilized and vegetation will be replanted as quickly as possible to control erosion. Since the disturbed area is expected to more than an acre, an NPDES Construction Stormwater permit[9] will be required for construction activities associated with the proposed well. During the pump installation phase of the project, the contractor will direct the discharge from testing into a seepage pit on the southeast corner of the site that will be installed during construction work.

4.2.2.2 Operational Period.

Construction of the proposed facilities will increase the amount of impermeable surface on the project site and will, therefore, slightly increase the potential for stormwater runoff. As discussed in Section 3.2.2.7, the two seepage pits will receive most or all of the storm water runoff from the site.

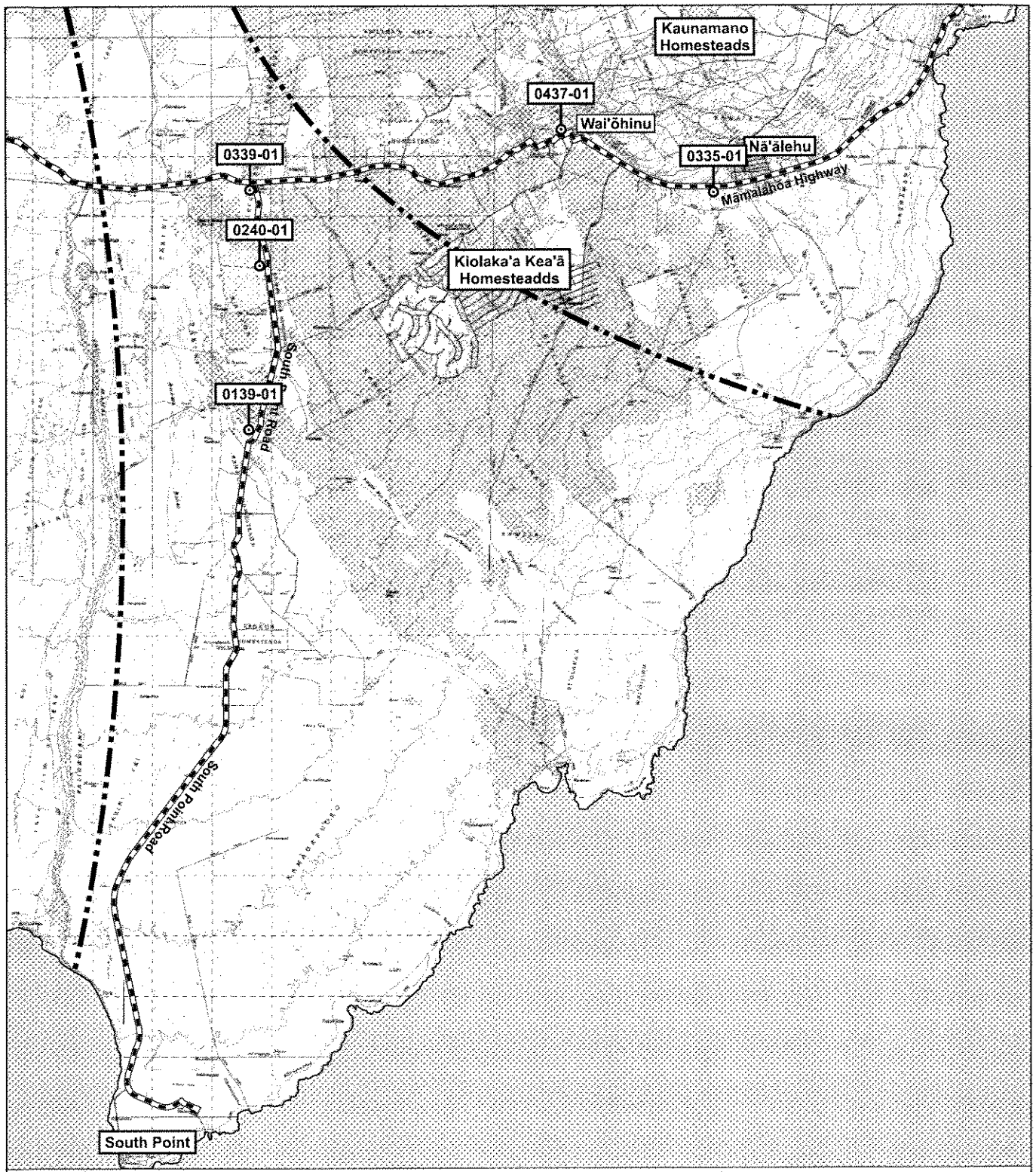
[8] As new facilities with impermeable surfaces are developed they will gradually change the volume, but these are permanent changes and are discussed with the other operational period effects.

[9] National Pollutant Discharge Elimination System administered through the Clean Water Branch of the State Department of Health (Hawai'i Administrative Rules, 11-55, Appendix C).

After the well begins operation, it will discharge approximately 2,000 to 4,000 gallons of water into the drainage system each time the pump starts. This is done so that particulate matter entrained during each well start-up does not enter the water supply system. This arrangement helps assure that only high quality water reaches the Department of Water Supply's customers. Even though the particulate levels in the startup water are higher than is desirable for potable use, they are low compared to naturally occurring levels in surface runoff. The frequency of startups will change over time as water use from the system increases. Initially, engineers expect that the pump will cycle on and off approximately once a day. The seepage pit planned for the northeastern quadrant of the site will be used to dispose of the water from pump startup, as well as tank overflow and hydrotest water.

Initially, high-level groundwater withdrawn from the proposed well will be offset on a one-for-one basis by a decrease in the use of the spring source. When the spring source is eventually abandoned, the water that was formerly diverted into the DWS system will return to its natural pathways, flowing overland or through poorly defined drainageways as it did before. It will quickly infiltrate into the porous soils and lavas of the area, once again becoming high-level groundwater. Because the groundwater feeding the well is hydrologically separated from that serving the spring sources by around 1,000 feet of unsaturated ground, withdrawal of groundwater from the well has no potential to impact the natural flows of the springs.

At a pumping rate of 450 gpm, the well's maximum yield is 0.648 MGD. If the pump is upgraded to 750 gpm in the future, it could draw up to 1.08 MGD. Both of these numbers are small fractions of CWRM's estimated sustainable yields for both the Nāʻālehu and Ka Lae Aquifer Systems. Consequently, no significant effect on other groundwater use is anticipated. It is also worth noting that withdrawing water from the well instead of the spring would not affect groundwater contribution to streamflow nearer the coast.



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County of Hawai'i
Dept. of Water Supply

Prepared By:
PLANNING SOLUTIONS

Sources:
--TNWRE
--Topozone.com

Legend:
- Well Location
- Approximate Ka Lae Aquifer Boundaries

Figure 4-1:

Groundwater Resources & Well Locations

Wai'ohinu Well Project

Figure 4-1 Ka Lae Aquifer 2004 12-07.cdr

4.3 GROUNDWATER CONTAMINATION

4.3.1 EXISTING CONDITIONS

The USGS tested water from the Wai'ōhinu exploratory well when it conducted pump tests at that location in 1994. The results of its tests are presented in Table 4-1 and Table 4-2. Because the proposed Wai'ōhinu Production Well is even further inland and more distant from potential sources of contamination, the quality of water withdrawn from the proposed well is expected to be as good as or better than the quality measured at the USGS test well. Maps prepared by the State Department of Health (DOH 2003) show that no chemical contaminants have been detected in the wells of the Nā'ālehu Aquifer System.

The areas adjacent to the site are used primarily for cattle grazing, which is not chemically intensive. The nearest residence (and therefore the nearest cesspool) is approximately 0.25 miles west of the site. The nearest up-gradient cesspools (of which there are only three) are slightly further away. Moreover, the vertical separation between these and the formation from which the well would draw water is hundreds of feet. Hence, the probability of groundwater contamination at the proposed well site is small.

The nearest identified site of concern is the Wai'ōhinu landfill, which is located approximately one mile downslope of the proposed well site (State Department of Health Office of Hazard Evaluation and Emergency Response report to the State Legislature, DOH 2000a). It is hydrologically down-gradient from the proposed well and does not have the potential to influence the quality of the water from it.

4.3.2 POTENTIAL IMPACTS

As described above in Section 3.2.2.1, the upper 500 feet of the well will be cased with grout, isolating it from surface water inputs. This, together with the absence of up-gradient sources of pollution make it unlikely that the well could be contaminated by existing sources of pollution. No hazardous materials will be used or generated during the drilling itself. DWS will, at the end of the pump test for its exploratory well, collect water samples and test these for the full suite of parameters for which drinking water standards exist to confirm the absence of contaminants that could make it unsuitable as a potable water source.

Table 4-1. USGS Wai'ōhinu Test Well Water Quality for Constituents with Levels Above Detectable Limits

Property or Constituent	*Value*	*Property or Constituent*	*Value*
Physical properties:		***Metals (µg/L)***	
Specific conductance (/cm at 25°C)	89	Aluminum, total recoverable	<10
pH (standard units)	7.4	Arsenic, total	<1
Temperature °C)	17.5	Barium, total recoverable	<100
Dissolved solids, all constituents (mg/L)	90	Beryllium, total recoverable	<10
Major Ions		Cadmium, total recoverable	<1
Hardness, total (as CaCO3)	23	Chromium, total recoverable	2
Calcium, dissolved (as Ca)	5.3	Cobalt, total recoverable	<1
Magnesium, dissolved (as Mg)	2.4	Copper, total recoverable	1
Sodium, dissolved (as Na)	8.0	Iron, total recoverable	<10
Potassium, dissolved (as K)	1.2	Iron, dissolved	6
Alkalinity (as CaCO3)	26	Zinc, total recoverable	30
Sulfate, dissolved (as SO4)	9.1	Lead, total recoverable	<1
Chloride, dissolved (as Cl)	4.5	Lithium, total recoverable	<10
Fluoride, dissolved (as F)	0.20	Manganese, total recoverable	<10
Silica, dissolved (as SiO2)	44	Manganese, dissolved <1	
Nutrients		Mercury, total recoverable	<0.10
Nitrogen, ammonia organic, total (as N)	<0.20	Molybdenum, total recoverable	<1
Phosphorus, total (as P)	0.070	Nickel, total recoverable	<1
Organic Constituents		Selenium, total	<1
Volatile organic compounds (µG/l)		Silver, total recoverable	<1
Toluene, total	0.2		
Source: U.S. Geological Survey Open File Report 98-644, Table 6.			

Table 4-2. Organic Constituents Analyzed and Found to be Below Reporting Limits

Property or Constituent	*Reporting Limit (µg/L)*	*Property or Constituent*	*Reporting Limit (µg/L)*
Alachlor	<0.05	Propazine	*<0.05*
Ametryn	<0.05	Silvex	*<0.01*
Atrazine	<0.05	Simazine	*<0.05*
Benzene	<0.2	Styrene	*<0.2*
Bromodichloromethane	<0.2	Tetrachloroethylene	*<0.2*
Bromoform	<0.2	Trichloroethylene	*<0.2*
Carbon tetrachloride	<0.2	Trichlorofluoromethane	*<0.2*
Chlorobenzene	<0.20	Xylene	*<0.20*
Chloroform	<0.2	2,4-DP	*<0.01*
cis-1,2-Dichloroethene	<0.2	1,2-Dichlorobenzene	*<0.01*
Cyanazine	<0.20	1,3-Dichlorobenzene	*<0.20*
Deethylatrazine	<0.05	1, 44 Dichlorobenzene	*<0.20*
Deisopropylatrazin	<0.05	1,1-Dichloroethane	*<0.20*
Dibromochloromethane	<0.2	I ,2-Dichloroethane	*<0.2*
Dichlorodifluoromethane	<0.2	1,1-Dichloroethyl	*<0.2*
Ethylbenzene	<0.2	1,2-Dichloropropane	*<0.2*
Methylene chloride	<0.2	2,4,5-T	*<0.2*
Methyl tert-butyl ether	<0.2	I,2-Transdichioroethene	*<0.01*
Metolachlor	<0.05	1,1,1 -Trichloroethane	*<0.2*
Metribuzin sencor	<0.05	1,1,1 –Trichloro 1,2,2 trichloroethane	*<0.2*
Prometon	<0.05		
Prometryn	<0.05		

Source: U.S. Geological Survey Open File Report 98-644, Table 6.

4.4 AIR QUALITY AND MICROCLIMATE

4.4.1 EXISTING CONDITIONS

Air quality data from the Hawai'i Department of Health's Air Quality Branch show that the project site (and indeed the entire State of Hawai'i) is well within air quality attainment standards for the state and the nation (DOH 2002). The occasional cars traveling along Wai'ōhinu-Hā'ao Springs road constitute the only source of anthropogenic air emissions near the project site.

The National Climatic Data Center's station at Nā'ālehu[10] provides a good indication of rainfall at the project site. The median annual precipitation at Nā'ālehu between 1971 and 2000 was 48.38 inches (NOAA 2002). November was the wettest month during this period, with an average monthly rainfall of 6.70 inches. The average monthly rainfall in June, the driest month, was 1.56 inches. The 1-hour rainfall event having a recurrence interval of 50 years is approximately 4 inches; the 24-hour 50-year event is approximately 12 inches.

Temperatures in the area are moderate. The average daily low temperatures are typically 62-64 degrees F between December and April and 65-67 degrees F between May and November. The average daily high temperatures are 76-77 degrees F between December and April and 78-81 degrees F between May and November. It is unlikely that temperatures at the well site ever reach 90 degrees.

No site-specific wind data are available from the well location. However, prevailing wind maps for the island suggest that DWS' Wai'ōhinu Well site is partially protected from the prevailing northeast trade winds. Wind direction at the site varies diurnally, moving gently down slope and to the southwest during nighttime hours, and traveling upslope from the east-northeast during midday. Kona storms, which usually occur in the winter, can bring stronger southerly winds to the site (Juvik & Juvik 1998).

4.4.2 POTENTIAL AIR QUALITY IMPACTS

Construction Period. Construction of the proposed well and facilities will require grading and excavation, which have the potential to temporarily generate fugitive dust. The project site's moist climate and relative protection from strong trade winds reduce the potential for airborne dust during construction. Potential adverse effects will be further minimized by the dust control measures the contractor will implement in accordance with Hawai'i Administrative Rules Title 11, Chapter 59 and Chapter 60.

The operation of internal combustion engines that power the construction equipment will add small amounts of pollutants to the atmosphere during the few months that site work is underway. The amounts are small, however, and do not have the potential to affect the local or regional air quality substantially.

Operational Period. Normal operation of the proposed facilities will not produce on-site air emissions. Neither are the structures sufficiently large to alter airflow or other microclimatic conditions in the vicinity.

The existing spring source is naturally flowing and is above the height of the reservoir. Consequently, it does not use electricity. Once the well is operational, it will use electricity to lift water from an elevation of a little over 1,000 feet above sea level (the anticipated static water level in the well) to the surface and into the storage tank. Operation of the SCADA system will also use electrical energy. This will marginally increase the amount of fuel Hawai'i Electric Light Company (HELCO) burns at its generating facilities. The change in power use represents a very small fraction of total electrical power use on the island, and the change in gaseous emissions from generating facilities would not have a substantial effect on ambient air quality.

4.5 HAZARDOUS MATERIALS

4.5.1 EXISTING CONDITIONS

No structures using asbestos-containing materials, lead-based paint, or other hazardous materials exist on or near the site. It and the surrounding areas are used only for the existing DWS facilities and for cattle grazing, and have been for many years.

[10] Climatic data is from the National Climatic Data Center/NESDIS/NOAA Nā'ālehu Station #516588.

4.5.2 POTENTIAL IMPACTS

Construction and operation of the well, the 0.50 MG tank, and the supporting facilities will not use or generate any hazardous materials.

4.6 TERRESTRIAL FLORA AND FAUNA

4.6.1 EXISTING CONDITIONS

The proposed Wai'ōhinu Well site is not within an area designated as critical plant or wildlife habitat by the United States Fish and Wildlife Service (USFWS 2002). No aquatic environments exist near the site. The site is thickly vegetated with grasses and shrubs, which transition into dense bamboo forests to the northeast (Figure 3-2). Plant species found on and around the site include fig (*Ficus sp.*), guava (*Psidium sp.*), Christmas-berry (*Schinus terebinthifolius Raddi*), Indian ginger (*Hedychium sp.*), Indian rhododendron (*Melastoma candidum*), various grasses, and bamboo. Given the disturbed nature of the habitat due to cattle grazing, there is no reason to believe that any rare or endangered species are present or that the area hosts biologically sensitive habitats or communities.

4.6.2 POTENTIAL IMPACTS

Approximately 2% of the proposed site is covered with existing structures and impervious surfaces related to the DWS facilities there. The rest is steep, sparsely vegetated land that is used for cattle grazing. The few plants and animals present in the area are primarily introduced and invasive species. The affected area is not habitat for any rare or endangered species. Consequently, the proposed action will not have any substantial direct impacts on terrestrial flora or fauna.

4.7 NOISE

4.7.1 EXISTING CONDITIONS

Table 4-3 summarizes quantitative measurements taken on the site on October 26, 2004. The only discernable noise sources were insects, birds, cattle, and wind in the foliage.

4.7.2 CONSTRUCTION PHASE NOISE IMPACTS

Construction will involve the operation of diesel-powered equipment for a period of up to 12 months. Noise from loudest un-muffled equipment of this sort could be as high as 80 to 85 dBA measured at a distance of 50 feet. The nearest noise-sensitive use, a residence, is approximately 1/2 mile from the site; natural noise attenuation will reduce peak construction noise levels to just over 50 dBA by the time it reaches that home. Noise levels on other, more distant properties would be lower. This noise would be present only for a short time during daytime hours.

Table 4-3. Baseline Sound Levels in dBA at Wai'ōhinu Well Site: October 26, 2004.

Station Description	*Baseline Sound Levels in dBA*[1]		
	Leq[2]	*MaxP*[3]	*MaxL*[5]
Proposed Well Site	43.2	88.2	63.8

[1]A person's ability to hear a sound depends greatly on its frequency. Young, healthy people can hear frequencies as low as about 20 Hertz (Hz) and as high as about 20,000 Hz (one hertz is equivalent to one wave per second, or cycle, per second). People hear sounds best when the predominant sound energy is between 1,000 and 6,000 Hz. To measure sound on a scale that reflects the way people perceive it, more weight must be given to the frequencies that people hear more easily. The U.S. EPA recommends the A-weighting scale for environmental noise because it is convenient to use, accurate for most purposes, and is used extensively throughout the world.

[2] Equivalent Sound Level (Leq). This variable is the root-mean square (RMS) average of the time-varying sound energy measured during the 10-minute measurement interval. Leq correlates reasonably well with the effects of noise on people, even for wide variations in environmental sound levels and time patterns.
[3] Maximum Sound Level (Lmax). This is the maximum sound level (1-second integrated value) recorded during the measurement interval.
[5]Maximum Peak Level (MaxP). This is the instantaneous maximum sound level measured during the measurement interval.
Source: Planning Solutions, Inc. Sound levels were recorded continuously over a ten-minute period using a Brüel & Kjær Type 2239A Integrating meter. The meter was set to integrate data every second using the A-weighting scheme.

Hawai'i Administrative Rules (HAR) §11-46 defines three classes of zoning districts and specifies corresponding maximum permissible sound levels due to (i) stationary noise sources and (ii) equipment related to agricultural, construction, and industrial activities. These are reproduced in Table 4-4. The noise limit for "Class C Districts" [which §11-46-3(3) defines as "...all areas equivalent to lands zoned agriculture, country, industrial, or similar type."] is 70 dBA at any time. The limits are applicable at the property line.

Because construction noise will be below 70 dBA at the property line of the nearest residence, no noise permit will be needed for the construction work.

4.7.3 OPERATIONAL PHASE NOISE IMPACTS

The well pump will produce noise levels of 35 to 42 dBA at the property line. This is below the most stringent noise limit in HAR §11-46 and would probably not be detectable from the nearest dwelling. Should noise abatement be necessary a motor mute will be included in the design portion of this project.

Table 4-4. Maximum Permissible Sounds Levels in dBA (HAR §11-46)

Zoning Districts	*Daytime (7 a.m. to 10 p.m.)*	*Nighttime (10 p.m. to 7a.m.)*
Class A	55	45
Class B	60	50
Class C	70	70

Notes:
(a) The maximum permissible sound levels apply to any excessive noise source emanating within the specified zoning district, and at any point at or beyond (past) the property line.
(b) Noise levels may not exceed the maximum permissible sound levels for more than ten per cent of the time within any twenty-minute period, except by permit or variance issued under sections 11-46-7 and 11-46-8.
(c) For mixed zoning districts, the primary land use designation shall be used to determine the applicable zoning district class and the maximum permissible sound level.
(d) Measurements values are for "A" weighting network and "slow" meter response unless otherwise stated. Sound level meters and calibrators must conform to American National Standard, ANSI S1.4-1983, specifications. The maximum permissible sound level for impulsive noise is ten dBA above the maximum permissible sound levels shown and is measured using the "Fast" meter response.
(e) The limits do not apply to the operation of emergency generators, provided the best available control technology is implemented.
(f) For the purpose of the regulations, the following definitions apply:
"*Construction activities*" means any or all activities, including but not limited to those activities necessary or incidental to the erection, demolition, assembling, renovating, installing, or equipping of buildings, public or private highways, roadways, premises, and parks.
"*Construction equipment*" means any device designed and intended for use in construction, including but not limited to any air compressor, pile driver, bulldozer, pneumatic hammer, steam shovel, derrick, crane, tractor, grader, loader, power saw, pump, pneumatic drill, compactor, on-site vehicle, and power hand tool.
"*Construction site*" means any or all areas, necessary or incidental for the purpose of conducting construction activities.
(g) Class A zoning districts include all areas equivalent to lands zoned residential, conservation, preservation, public space, open space, or similar type.
Class B zoning districts include all areas equivalent to lands zoned for multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type.
Class C zoning districts include all areas equivalent to lands zoned agriculture, country, industrial, or similar type.

Source: Hawai'i Administrative Rules, Title 11, Department of Health, Chapter 46, Community Noise Control

4.8 TRANSPORTATION

4.8.1 EXISTING CONDITIONS

Access to the site is via Wai'ōhinu-Hā'ao Springs Road. The steeper portions of the roadway have asphaltic concrete pavement. Above an elevation of approximately 1,300 feet, most of the roadway is dirt. The roadway does not meet current County standards. The DWS access to the well site, as well as to the present spring source, is via an easement from the State of Hawai'i.

Only three dwellings exist above the proposed well site along Wai'ōhinu-Hā'ao Springs Road. Therefore traffic along the road is very infrequent and normally consists only of a few passenger-vehicle trips per day carrying residents and DWS employees inspecting the Hā'ao Springs facilities.

4.8.2 POTENTIAL IMPACTS

Construction Period. No road improvements are planned as part of the well's construction. Construction vehicles have previously used the road in order to construct homes and DWS facilities located there without difficulty. Trucks and passenger cars will bring workers, equipment, and building materials to the site, increasing traffic on Wai'ōhinu-Hā'ao Springs Road. The number will be small, generally less than 10 to 20 vehicle-trips per day; that, together with the very low existing traffic volumes means that roadway capacity will be more than adequate to accommodate these movements. Heavy trucks may occasionally slow other vehicles traveling in the same direction, and there is limited room in some areas for vehicles traveling in opposite directions to pass one another. Consequently, the construction traffic will increase the required travel time. However, the short distance over which this will occur, the small number of vehicles that will be affected, and the limited duration of the construction work mean that the adverse affect will be small. Site construction does not entail work in the existing road right-of-way, eliminating that as a potential source of adverse effects.

Operational Period. The well will not require manned operation, but only occasional monitoring and maintenance. Service vehicles will park in designated on-site stalls and will not interfere with traffic. Consequently, operation of the facility will have virtually no effect on traffic in the area.

4.9 ARCHAEOLOGICAL, HISTORIC AND CULTURAL FEATURES

4.9.1 EXISTING CONDITIONS

There are no sites listed on the State and National Registers of Historic Places within a mile of the site. The Ki'i Petroglyphs (Site No. 10-76-3598) are located on Department of Hawaiian Home Lands' property *makai* of Māmalahoa Highway, far from the well site.

DWS records do not indicate the presence of any historic, archaeological, or cultural features on the project site at the time the existing reservoir and other facilities were constructed. The additional land where DWS would construct the new facilities is presently in pasture use and was cleared of native vegetation for that purpose at some time in the past. As illustrated by the photographs in Figure 3-2, there is no evidence that remains are present, but no subsurface or other archaeological investigations have been conducted to confirm this.

4.9.2 POTENTIAL IMPACTS

The DWS construction contract for work on the parcel will stipulate that should any artifact or burial site be encountered during construction, all activities would halt and SHPD would be notified. It will provide that work may be resumed only after consultation with the SHPD is completed and a monitoring program is in place. Interviews with DWS staff indicate that there are no known cultural resources or activities on the property. This observation is consistent with the absence of any resources typically used in such practices.

4.10 NATURAL HAZARDS VOLCANIC AND SEISMIC HAZARDS

4.10.1 RISK FROM LAVA FLOWS

The proposed well is located on the southeastern flank of Mauna Loa. It is approximately eight miles east of the southwest rift zone and two miles east of the 'Akihi cinder cone (Macdonald et al. 1983). Between 1832 (the time of its first recorded eruption) and 1950, Mauna Loa averaged one eruption every 3.6 years (Macdonald et al. 1983). Since 1950 Mauna Loa has erupted only twice (1975 and 1984).

The U.S. Geological Survey has divided the island into zones based on the probability of coverage by future lava flows; Zone 1 represents the greatest hazard and Zone 9 the least. As shown in Figure 4-2,

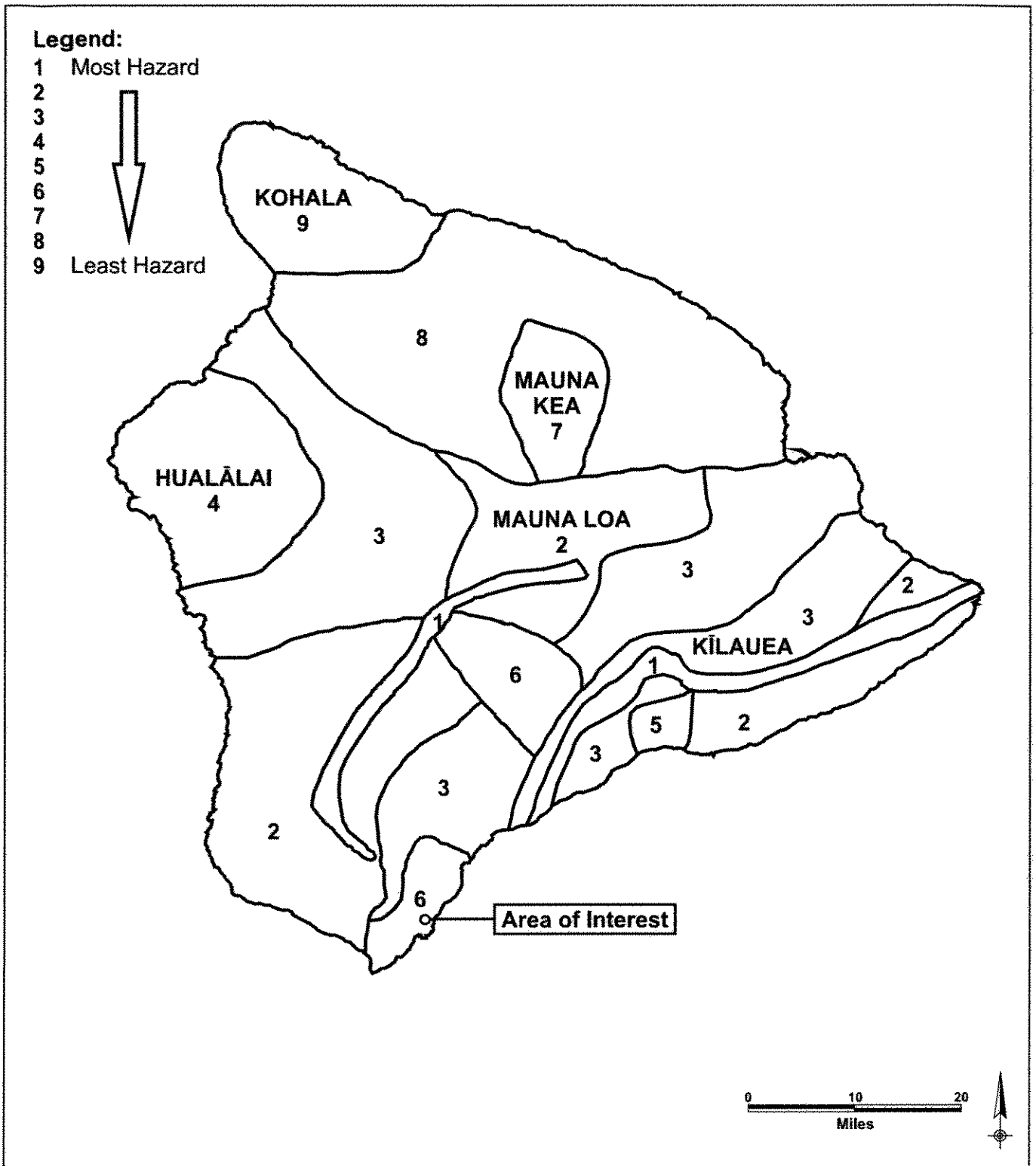
the proposed Wai'ōhinu well site is in Zone 6, which signifies an area of Mauna Loa currently protected from lava flows by the topography of the volcano (Juvik & Juvik 1998).[11] According to USGS, only a very small percentage of Zone 6 (perhaps 1-2%) has been covered by lava within the last 750 years. Inundation of the proposed well site by lava flows in the foreseeable future is highly unlikely because the hills in that area stand well above the adjacent slopes of Mauna Loa (USGS 1997).

4.10.2 RISK FROM EARTHQUAKES

The USGS has not defined hazard zones for the effects of earthquakes. Figure 4-3 and Table 4-5 describe the major earthquakes that have occurred there in historic times. The project site is located very near the known Wai'ōhinu fault. The largest Hawaiian earthquake in recorded history occurred in 1868 along this fault; it had an estimated magnitude of between 7.5 and 8.1 on the Richter scale (USGS 1997). The 1868 earthquake was the last severe earthquake centered near the project site, and it caused damage across the entire island.

For the purposes of structural design, the entire Island of Hawai'i is classified as Zone 4 (10% chance of severe ground shaking in a 50-year interval) by the Uniform Building Code adopted by the County of Hawai'i in 1993 (USGS 1997). This is the highest risk category that is assigned. All structures associated with the proposed well will be built to comply with the Uniform Building Codes for Earthquake Zone 4.

[11] This is the same risk zone as the existing spring source.



Prepared For:
County of Hawai'i
Department of Water Supply

Prepared By:
PLANNING SOLUTIONS

Source:
--Dept. of Interior USGS
--County of Hawai'i Office of Planning

NOTE: The island of Hawaii is divided into zones according to the degree of hazard from lava flows. Zone 1 is the area of the greatest hazard, Zone 9 of the least.

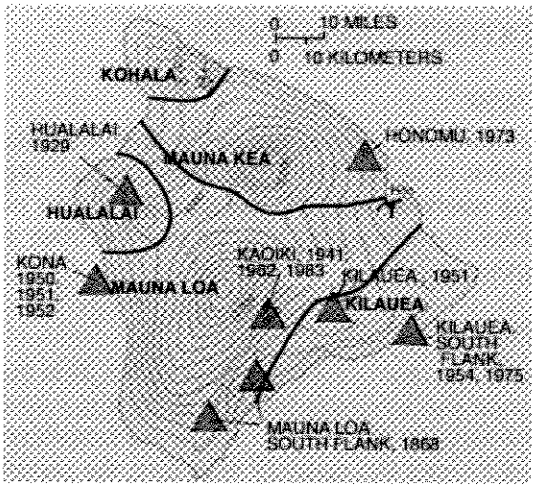
Figure 4-2:

Island of Hawai'i Lava Hazard Zones

Wai'ōhinu Well Project

Figure 4-2 Lava Hazard Zones 8008-01-11.cdr

Figure 4-3. Generalized Locations of Damaging Earthquakes of Magnitude 6 or Greater Since 1868 on the Island of Hawai'i



Source: Volcanic and Seismic Hazards on the Island of Hawai'i. Updated July 18, 1997

Table 4-5. Damaging Earthquakes of Magnitude 6 or Greater Since 1868 on the Island of Hawai'i

Year	*Date*	*Location*	*Magnitude*	*Depth (Mi)*
1868	Mar. 28	Mauna Loa south flank	6.5-7.0*	No data
1868	Apr. 2	Mauna Loa south flank	7.5-8.1*	No data
1929	Oct. 5	Hualalai	6.5*	No data
1941	Sept. 25	Ka'oiki	6.0*	No data
1950	May 29	Mauna Loa southwest rift	6.2	No data
1951	Apr. 22	Kīlauea	6.3	20
1951	Aug. 21	Kona	6.9	5
1952	May 23	Kona	6.0	5
1954	Mar. 30	Kīlauea south flank	6.5	5
1962	June 27	Ka'oiki	6.1	6
1973	Apr. 26	Honomu	6.2	25
1975	Nov. 29	Kīlauea south flank	7.2	6
1983	Nov. 16	Ka'oiki	6.6	7
1989	June 25	Kīlauea south flank	6.1	9

Note: The magnitudes marked by an (*) are based on eyewitness accounts of the earthquakes' effects and on reports of damage.

Source: USGS 1997.

4.10.3 FLOOD AND TSUNAMI HAZARDS

The proposed well site is not located within a designated Flood Hazard Safety Area (FHSA). As discussed in Section 4.2.1, virtually no overland flow enters the site from surrounding areas.

4.11 SCENIC AND AESTHETIC RESOURCES

4.11.1 EXISTING CONDITIONS

None of the existing facilities on the Wai'ōhinu site can be seen from Māmalahoa Highway or from residences, the nearest of which is about 0.25 miles away. Dense vegetation almost completely obscures views of the existing reservoir from the road as well. As the pictures in Figure 3-2 show, there are expansive *makai* views from the project site, but views in other directions are limited by the vegetation and steep topography.

4.11.2 POTENTIAL IMPACTS

As noted above, the facilities to be constructed will not be visible from the highway below or nearby residences. The facilities should also be mostly invisible to passing vehicles along Wai'ōhinu-Hā'ao Springs Road. Because of the very steep topography above and below the site, the proposed facilities will not disrupt the broad *makai* views that currently exist from the pasturelands. The small external antenna that will be installed as part of the SCADA system will not detract from views. For these reasons, the project will not have any substantial impacts on scenic and aesthetic resources.

4.12 EXISTING LAND USE & ECONOMIC AND CULTURAL ENVIRONMENT

4.12.1 EXISTING CONDITIONS

The proposed facilities would be installed adjacent to the existing Wai'ōhinu Homesteads reservoir and pump control station, which are currently used by DWS for water storage and distribution. The surrounding land is State-owned and is presently used for cattle grazing. The nearest dwelling is Whalings Bed and Breakfast, about a quarter of a mile to the west of the proposed well site. Three additional homes are located further up Wai'ōhinu-Hā'ao Springs Road, at least a quarter mile north of the site. There are no other commercial or industrial activities in the immediate area.

The proposed well site is contained within Census Tract 212, a large area which includes the communities of Wai'ōhinu, Nā'ālehu, Ocean View, Discovery Harbor, Pāhala, Ka Lae, Ka'alu'alu, Honu'apo, and Punalu'u (see Figure 4-4). The 2000 population of Census Tract 212 was 5,827 people. These constituted 2,209 households. The area reported a median household income of $29,466 in 2000, which is low considering that the statewide median household income in 2000 was $49,820 and roughly 65% of households in the State of Hawai'i reported annual incomes above $35,000. At 16% of the civilian labor force, unemployment was high in Census Tract 212 as well, approximately ten percentage points above the statewide average of 6.3%. Of those residents working, almost half commuted, averaging 42 minutes each way. Educational attainment in the project area was about average in 2000, with approximately 15% of residents in Census Tract 212 holding at least a bachelor's degree compared to 17.8% of state residents.

4.12.2 POTENTIAL IMPACTS

DWS already uses part of the project site for water storage and treatment facilities. Nearly 1 acre of adjacent pasture land to the east will be converted for DWS use as part of the proposed project, however this represents a small portion of the agricultural land available and will not impede the continued use of the area for cattle grazing. Consequently, the proposed facilities do not constitute a significant change in use. The project will not affect recreational activities in the area. Neither would it alter views from nearby residences.

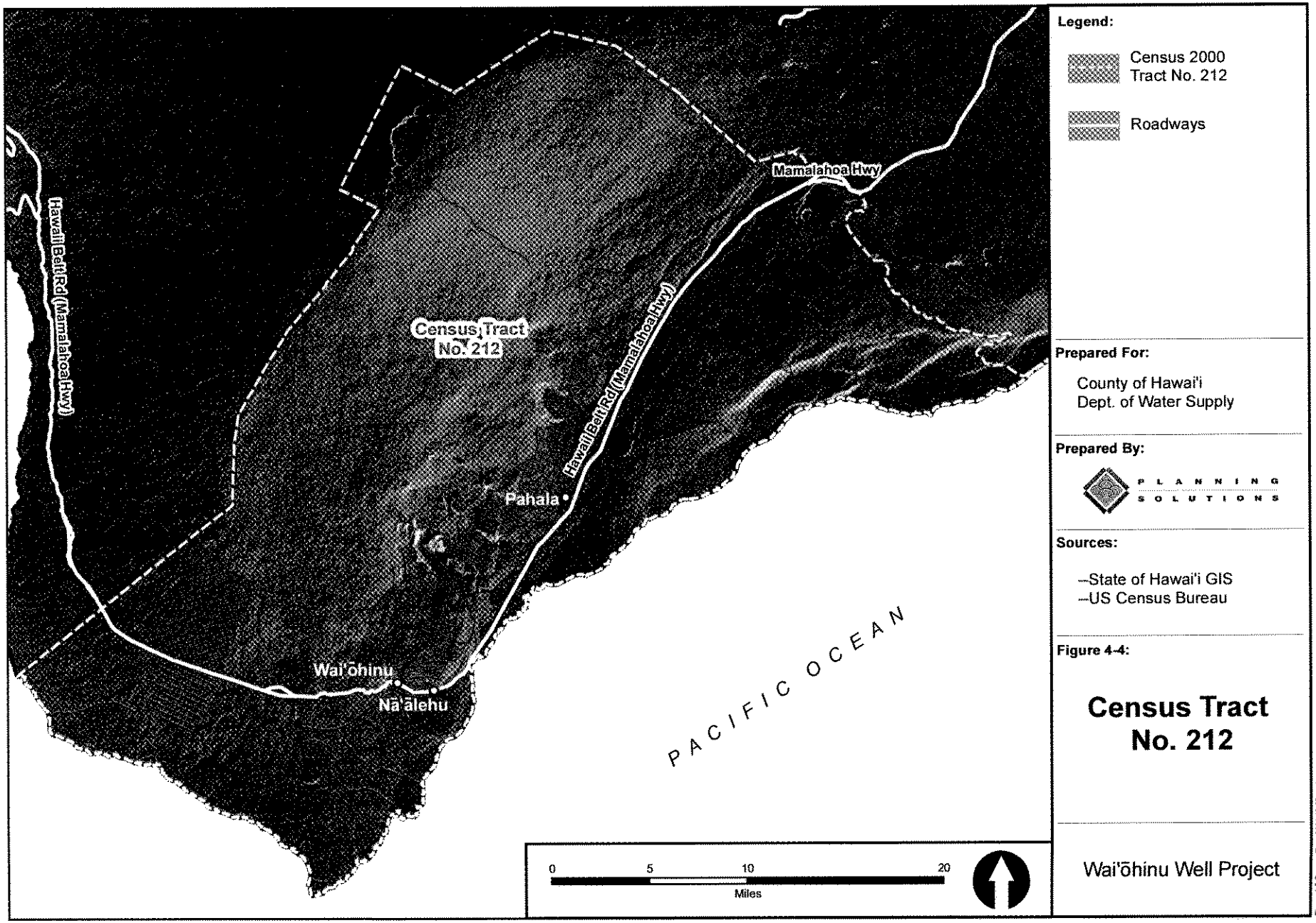
The proposed well and reservoir will increase DWS' total source and storage capacity in the Ka'ū District. This will allow the Department to meet current system demands. Aside from the temporary construction employment and expenditures that it would create, the project will not in and of itself stimulate or otherwise promote population growth or economic activity.

4.13 LAND USE CONTROLS

The site is in the State Agriculture District, as are all the properties bordering the site. The County zoning is also Agriculture (Ag-1a). The Hawai'i General Plan land use designation for the parcel is Orchard. The proposed facilities are allowable uses in these zoning districts.

4.14 LAND OWNERSHIP

The existing facilities and the land where the new proposed well would be constructed are ceded lands owned by the State of Hawai'i, as is the land bordering the project on all sides. The State will retain ownership of the land but will grant DWS management jurisidiction over the property via an Executive Order so it can operate and maintain the well.


Census Tract No. 212
Hawaii Belt Rd (Mamalahoa Hwy)
Mamalahoa Hwy
Hawaii Belt Rd (Mamalahoa Hwy)
Pahala
Wai'ōhinu
Nā'ālehu
PACIFIC OCEAN
0
5
10
20
Miles
Legend:
Census 2000 Tract No. 212
Roadways
Prepared For:
County of Hawai'i
Dept. of Water Supply
Prepared By:
PLANNING SOLUTIONS
Sources:
--State of Hawai'i GIS
--US Census Bureau
Figure 4-4:
Census Tract No. 212
Wai'ōhinu Well Project

5.0 RELATIONSHIPS TO RELEVANT PLANS, POLICIES & CONTROLS

5.1 COUNTY AND STATE REGULATIONS

5.1.1 COUNTY OF HAWAI'I GENERAL PLAN

5.1.1.1 Applicable Goals, Policies, and Recommended Actions

The Department of Water Supply operates and maintains twenty-three separate water systems in the County of Hawai'i, including the Wai'ōhinu-Nā'ālehu-South Point System. As discussed in Section 1.2, DWS is proposing the new well in anticipation of high costs associated with maintaining the two surface water-influenced spring sources. The County of Hawai'i acknowledges these costs in the Revised General Plan of 2001:

> *Surface water or a groundwater source under the influence of surface water is required to be treated and quality monitored to ensure compliance with the SDWA [Safe Drinking Water Act], whereas groundwater need only be chlorinated. As such, the maintenance of surface water systems are much more expensive and labor intensive.*

The 2001 Draft Revision to the *Hawai'i County General Plan* contains goals and policies concerning the development and operation of essential water supply facilities. The *General Plan* recognizes that water supply facilities are needed to support the patterns of development which the *General Plan* seeks to achieve. It makes planning for the location of utility facilities such as wells, reservoirs, and pumping stations an integral part of the land planning process.

The *Draft 2001 General Plan* makes it the goal of the County to address the following water supply issues:

- Ensure that properly regulated, adequate, efficient and dependable public and private utility services are available to users.
- Maximize efficiency and economy in the provision of public utility services.
- Design public utility facilities that fit into their surroundings or are concealed from public view.

To achieve those goals, the *2001 Draft General Plan* makes it County policy to:

- Design public utility facilities so that they complement adjacent land uses and operate them so as to minimize pollution or disturbance.
- Encourage the use of properties or easements owned by public or private utility companies or agencies as supplemental open space and recreational areas.
- Provide utilities and service facilities that minimize total cost to the public and effectively service the needs of the community.
- Design utility facilities to minimize conflict with the natural environment and natural resources.
- Improve existing utility services to meet the needs of users.
- Develop capital improvement programs and plans for public utilities that are consistent with the General Plan.
- Correlate water system improvements with the County's desired land use development pattern.
- Design and build all water systems to Department of Water Supply standards.
- Improve and replace inadequate systems.
- Adequately protect water sources to prevent depletion and contamination from natural and manmade occurrences or events.

- Install water system improvements first in areas that have established needs and characteristics, such as occupied dwellings, agricultural operations and other uses, or in areas adjacent to them if there is need for urban expansion.
- Develop a coordinated effort by County, State and private interests to identify sources of additional water supply and implement it to ensure the development of sufficient quantities of water for existing and future needs of high growth areas and agricultural production.
- Promote the use of ground water sources to meet State Department of Health water quality standards.
- Seek State and Federal funds to assist in financing projects to bring the County into compliance with the Safe Drinking Water Act.

The *Draft 2001 Hawai'i County General Plan* identifies a number of actions to implement these policies in the Ka'ū District. Specifically, it directs DWS to:

- Provide additional water system improvements for the currently serviced areas of Nā'ālehu, Wai'ōhinu, and Pāhala.
- Pursue groundwater source investigation, exploration and well development at Ocean View, Pāhala, and Wai'ōhinu.
- Continue to evaluate growth conditions to coordinate improvements as required to the existing water system.

5.1.1.2 Conformance with the 2001 Hawai'i County General Plan

DWS is proposing to construct the Wai'ōhinu Well in accordance with the specific *General Plan* mandate to explore a well at Wai'ōhinu. It is consistent with the General Plan's policies of encouraging the use of ground water sources in order to facilitate compliance with DOH standards and seeking Federal funding in support of this objective. The well, reservoir, and related facilities comply with all applicable design standards. It will allow DWS to continue to meet the needs of the people of the Ka'ū District in a cost-effective manner while complying with the State Department of Health requirements for potable water sources.

5.1.2 COUNTY OF HAWAI'I ZONING ORDINANCE

The Hawai'i County Code (2000 Edition), Section 25-4-11(b) states:

> *Any substation used by a public utility for the purpose of furnishing telephone, gas, electricity, water, radio, or television shall be a permitted use in any district provided that the use is not hazardous or dangerous to the surrounding area and the director has issued plan approval for such use.*

The proposed well and reservoir would be a public utility that would furnish water for the Wai'ōhinu, Nā'ālehu and South Point communities and would thus qualify as a permitted use under this regulation. DWS will submit an *Application for Plan Approval* to the County Department of Planning to obtain the necessary director's approval for the project.

5.1.3 STATE DRINKING WATER STATE REVOLVING FUND (DWSRF)

This project may be funded by Federal funds through the State of Hawai'i's Drinking Water State Revolving Fund (DWSRF) program. The U.S. Congress established the DWSRF program as a new section 1452 of the Safe Drinking Water Act (SDWA), 33 U.S.C. 300j-12, by the SDWA Amendments of 1996, Public Law 104-182. The DWSRF was established to help prevent contamination through source water protection and enhanced water system management. It also emphasizes the needs of small water systems, such as Wai'ōhinu. The proposed project is consistent with the overall program intent to prevent potential contamination and with the program's emphasis on small water systems. This document includes all of the environmental information required for compliance with the DWSRF program.

5.1.4 STATE OF HAWAIʻI LAND USE

As discussed in Section 4.13, the site is in the State Agriculture District. HRS Chapter 205 §205-4.5 (7) lists public utility facilities such as the proposed well as permissible uses within the State Agricultural District.

5.2 CROSS-CUTTING FEDERAL ENVIRONMENTAL AUTHORITIES

5.2.1 ARCHEOLOGICAL AND HISTORIC PRESERVATION ACT (16 U.S.C. § 469A-1) & NATIONAL HISTORIC PRESERVATION ACT (16 U.S.C. § 470(F))

Informal consultation with staff of the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources indicate that no known archaeological or historic features exist at the site. Similarly, interviews with DWS employees suggest that the site is not used for cultural practices. DWS will instruct its contractors to halt activity and notify SHPD in the event that any artifact or burial site is encountered during construction. SHPD was provided a copy of the *Draft EA*.

5.2.2 CLEAN AIR ACT (42 U.S.C. § 7506(C))

As discussed in Section 4.4, air quality at the Waiʻōhinu Well site is good. It is in an air quality attainment area as defined by the State of Hawaiʻi Department of Health in its EPA-approved air quality program (DOH 2002). Measures will be taken to control fugitive dust during construction in accordance with Hawaiʻi Administrative Rules Title 11, Chapters 59 and 60. Normal operation of the proposed facilities will not produce on-site air emissions, will not alter airflow in the vicinity, and will have no other measurable effect on the area's microclimate.

5.2.3 COASTAL BARRIER RESOURCES ACT (16 U.S.C. § 3501)

Coastal Barrier Resources Act (CBRA), Public Law 97-348 (96 Stat. 1653; 16 U.S.C. 3501 et seq.), enacted October 18, 1982, designated various undeveloped coastal barrier islands, depicted by specific maps, for inclusion in the Coastal Barrier Resources System (System). Areas so designated were made ineligible for direct or indirect Federal financial assistance that might support development, including flood insurance, except for emergency life-saving activities. Exceptions for certain activities, such as fish and wildlife research, are provided, and National Wildlife Refuges and other, otherwise protected areas are excluded from the System. The proposed project will not affect any areas protected by this Act.

5.2.4 COASTAL ZONE MANAGEMENT ACT (16 U.S.C. § 1456(C) (1))

Enacted as Chapter 205A, HRS, the Hawaiʻi Coastal Zone Management (CZM) Program was promulgated in 1977 in response to the Federal Coastal Zone Management Act of 1972. The CZM area encompasses the entire state, including all marine waters seaward to the extent of the state's police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters.

The Hawaiʻi Coastal Zone Management Program focuses on ten policy objectives:

- Recreational Resources. To provide coastal recreational opportunities accessible to the public and protect coastal resources uniquely suited for recreational activities that cannot be provided elsewhere.
- Historic Resources. To protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.
- Scenic and Open Space Resources. To protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

- Coastal Ecosystems. To protect valuable coastal ecosystems, including reefs, from disruption and to minimize adverse impacts on all coastal ecosystems.
- Economic Uses. To provide public or private facilities and improvements important to the state's economy in suitable locations; and ensure that coastal dependent development such as harbors and ports, energy facilities, and visitor facilities, are located, designed, and constructed to minimize adverse impacts in the coastal zone area.
- Coastal Hazards. To reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.
- Managing Development. To improve the development review process, communication, and public participation in the management of coastal resources and hazards.
- Public Participation. To stimulate public awareness, education, and participation in coastal management; and maintain a public advisory body to identify coastal management problems and provide policy advice and assistance to the CZM program.
- Beach Protection. To protect beaches for public use and recreation; locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion.
- Marine Resources. To implement the state's ocean resources management plan.

Other key areas of the CZM program include: a permit system to control development within a Special Management Area (SMA) managed by the Counties and the Office of Planning; a Shoreline Setback Area which serves as a buffer against coastal hazards and erosion, and protects view-planes; and the Marine and Coastal Affairs. Finally, a Federal Consistency provision requires that federal activities, permits and financial assistance be consistent with the Hawai'i CZM program.

The proposed Wai'ōhinu Well project is located more than 2.5 miles from the coastline. It does not involve the placement, erection, or removal of materials near the coastline. As documented in this environmental assessment, the type and scale of the activities that it involves do not have the potential to affect coastal resources significantly. Finally, it is consistent with the CZM objectives that are relevant to a project of this sort. A copy of the *Draft EA* was sent to the Office of Coastal Zone Management at the State of Hawai'i Department of Business, Economic Development, and Tourism.

5.2.5 ENDANGERED SPECIES ACT (16 U.S.C. 1536(A)(2) AND (4))

The Endangered Species Act (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended 1976-1982, 1984 and 1988) provides broad protection for species of fish, wildlife, and plants that are listed as threatened or endangered in the U.S. or elsewhere. The Act mandates that federal agencies seek to conserve endangered and threatened species and use their authorities in furtherance of the Act's purposes. It provides for listing species, as well as for recovery plans and the designation of critical habitat for listed species. The Act outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species, and contains exceptions and exemptions.

Section 4.6 of this EA discusses existing biota on and near the project site. The discussion documents the fact that there are no known rare or endangered species on or immediately adjacent to the project site. Copies of the Draft EA were provided to the U.S. Fish and Wildlife Service and to the State Department of Land and Natural Resources for review and comment.

5.2.6 ENVIRONMENTAL JUSTICE (EXECUTIVE ORDER 12898)

The Environmental Justice Executive Order was issued in 1994 for the purpose of protecting low-income and minority residents of the United States from disproportionate exposure to environmental and health hazards. Section 1-101 of the Executive Order States:

> *To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make*

achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

As discussed in Section 4.12, the Census Tract in which the proposed well is located is in the lower 35% income bracket for the State of Hawai'i, with a 2000 median annual household income of $29,466. The purpose of the proposed well is to continue to provide those residents with a clean and affordable source of drinking water that conforms to State and Federal standards. The project will not have adverse secondary environmental, economic, or social impacts, as discussed in detail in Chapter 4. Moreover, the State and Federal regulations regarding safe drinking water are applicable to all water systems in Hawai'i, irrespective of the economic or demographic characteristics of their residents. Thus, the proposed Wai'ōhinu Well complies with this Executive Order.

5.2.7 FLOODPLAIN MANAGEMENT (42 U.S.C. § 4321)

Based on the Flood Insurance Rate Map for the area, the site proposed for the Wai'ōhinu Well lies outside a defined floodplain. The project does not involve property acquisition, management, or construction within a 100-year flood plain (Zones A or V), and it does not involve a "critical action" within a 500-year flood plain. Consequently, it is consistent with applicable regulations and guidance relating to floodplain management.

5.2.8 PROTECTION OF WETLANDS (42 U.S.C. § 4321)

As noted in Section **Error! Reference source not found.**, there are no wetlands on or near the site. Neither are there food resources on the site that are important to wildlife that use wetlands elsewhere on the island. Copies of the *Draft EA* were sent to the administrator of the Pacific Island Eco-Region, U.S. Fish & Wildlife Service, and to the State Department of Land and Natural Resources Department of Aquatic Resources to ensure adequate consideration of this topic in the environmental review for this project.

5.2.9 FARMLAND PROTECTION POLICY ACT (7 U.S.C. § 4202(8))

The U.S. Congress adopted the Farmland Protection Policy Act (FPPA) (Public Law 97-98) on December 22, 1981). The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) has national leadership for administering the FPPA. The effective date of the FPPA rule (part 658 of Title 7 of the Code of Federal Regulations) is August 6, 1984.

The stated purposes of the FPPA are to:

- Minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses.
- Assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government, and private programs and policies to protect farmland.

"Farmland", as used in the FPPA, includes prime farmland, unique farmland, and land of statewide or local importance. "Farmland" subject to FPPA requirements does not have to be currently used for cropland. As discussed in Section 4.13, the Wai'ōhinu Well site is within a designated agricultural area. The surrounding lands and portions of the site are currently used for cattle grazing. However, neither the proposed well site nor the immediately adjacent properties are recognized as prime or unique agricultural lands on the most recent Agricultural Lands of Importance to the State of Hawai'i (ALISH) map (State of Hawai'i 2002). As such, the well site does not qualify as farmland under the provisions of the FPPA.

5.2.10 FISH AND WILDLIFE COORDINATION ACT (16 U.S.C. § 662(A))

The Federal Fish and Wildlife Coordination Act, as amended, authorizes the Secretaries of Agriculture and Commerce to require consultation with the U.S. Fish and Wildlife Service and the fish and wildlife agencies of States where the *"waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted . . . or otherwise controlled or modified"* by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of *"preventing loss of and damage to wildlife resources."*

As documented in this report, the proposed project will not result in the diversion of any water body and will not result in impacts on fish or wildlife resources. The U.S. Fish and Wildlife Service and the State Department of Land and Natural Resources were provided copies of the Draft EA.

5.2.11 SAFE DRINKING WATER ACT (42 U.S.C. § 300H-3(E))

The Safe Drinking Water Act (SDWA) is the principal federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The SDWA requires that all public water systems meet stringent water quality standards. These standards cover a long list of potential chemical, radiological and biological contaminants.

As discussed above, the purpose of the proposed Wai'ōhinu Well project is to permit continued compliance of the Ka'ū District Water System with the standards mandated pursuant to the Act, by providing a source of high quality freshwater for the system. Before connecting the new Wai'ōhinu Production Well to its existing system, DWS will test water from it to ensure that the water is consistent with all State and Federal standards for potable water.

The Safe Drinking Water Act also provides the impetus behind the development of regulatory protection of principal or sole source aquifers. Part C of this Law pertains specifically to the protection of underground sources of drinking water, including the establishment of regulations on the injection of materials into subsurface aquifers in those areas of the United States where only one aquifer (principal or sole source aquifer) exists. Section 1424(e) of PL 93-523 states:

> *(e) If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of the determination in the Federal Register. After the publication of any such notice, no commitment for Federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for Federal financial assistance may, if authorized under another Provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer.*

As identified by the U.S. Environmental Protection Agency, Region IX Groundwater Office (http://www.epa.gov/OGWDW/swp/ssa/reg9.html), there are only two Sole Source Aquifers in Hawai'i. They are the Southern O'ahu Basal Aquifer on the Island of O'ahu and the Moloka'i Aquifer on the island of Moloka'i. There are no sole source aquifers on the Island of Hawai'i where the proposed Wai'ōhinu Well project is located.

5.2.12 WILD AND SCENIC RIVERS ACT (16 U.S.C. 1271-1287)

The purpose of this act, as stated in Section (b) of its preamble is as follows:

> *It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be*

preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

As discussed in Section 4.6, no perennial streams or major fresh water bodies exist near the proposed well. As such, development of the Waiʻōhinu well does not have the potential to affect the hydrology, water quality, or aquatic resources in any streams and therefore is consistent with the provisions of the Wild and Scenic Rivers Act.

6.0 DETERMINATION

6.1 SIGNIFICANCE CRITERIA

Hawai'i Administrative Rules §11-200-11.2 establishes procedures for determining if an environmental impact statement (EIS) should be prepared or if a finding of no significant impact is warranted. §11-200-11.2 (1) provides that proposing agencies should issue an environmental impact statement preparation notice (EISPN) for actions that it determines may have a significant effect on the environment. Hawai'i Administrative Rules §11-200-12 lists the following criteria to be used in making that determination:

In most instances, an action shall be determined to have a significant effect on the environment if it:

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;*
2. *Curtails the range of beneficial uses of the environment;*
3. *Conflicts with the State's long-term environmental policies or goals as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*
4. *Substantially affects the economic or social welfare of the community or State;*
5. *Substantially affects public health;*
6. *Involves substantial secondary impacts, such as population changes or effects on public facilities;*
7. *Involves a substantial degradation of environmental quality;*
8. *Is individually limited but cumulatively has considerable effect on the environment or involves a commitment for larger actions;*
9. *Substantially affects a rare, threatened, or endangered species, or its habitat;*
10. *Detrimentally affects air or water quality or ambient noise levels;*
11. *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;*
12. *Substantially affects scenic vistas and view planes identified in county or state plans or studies; or,*
13. *Requires substantial energy consumption.*

6.2 FINDINGS

The potential effects of the proposed project described earlier in this document were evaluated using these significance criteria. The findings with respect to each criterion are summarized below:

6.2.1 IRREVOCABLE LOSS OR DESTRUCTION OF VALUABLE RESOURCE

The proposed project would be constructed partially on land housing an existing Department of Water Supply facility and partially on land that is currently used for cattle grazing. It does not involve the loss of any significant cultural or natural resources.

6.2.2 CURTAILS BENEFICIAL USES

Construction and operation of the well would not curtail beneficial uses of the site. The water that the DWS proposed to withdraw is a small fraction of the developable yield of the aquifer, and its removal from the groundwater flow into the ocean will not have a measurable effect on ocean or groundwater quality. The project would significantly enhance the utility of the Wai'ōhinu site for Ka'ū customers of DWS.

6.2.3 CONFLICTS WITH LONG-TERM ENVIRONMENTAL POLICIES OR GOALS

The proposed project is consistent with the County of Hawai'i's General Plan (see Section 5.1.1.2) and with the State's long-term environmental policies and goals as expressed in Chapter 344, Hawai'i Revised statutes and elsewhere in State law.

6.2.4 SUBSTANTIALLY AFFECTS ECONOMIC OR SOCIAL WELFARE

The proposed well is intended to provide a continuing supply of water to existing residents of Ka'ū. It will not have a substantial adverse effect on economic or social welfare except insofar as it allows DWS to assure its customers that they are receiving the best quality water at the lowest cost, consistent with the maintenance of environmental quality.

6.2.5 PUBLIC HEALTH EFFECTS

The proposed project will not adversely affect air or water quality. Neither will it generate solid waste or produce other emissions that will have a significant adverse effect on public health.

6.2.6 PRODUCE SUBSTANTIAL SECONDARY IMPACTS

The proposed project will not produce significant secondary impacts. It is not designed to foster population growth or to promote economic development. Instead, it is intended to meet current potable water demands, allowing for moderate growth.

6.2.7 SUBSTANTIALLY DEGRADE ENVIRONMENTAL QUALITY

The proposed project will not have substantial long-term environmental effects. Noise from construction and demolition activities is the only impact of note, and it will be of limited duration. So long as adequate measures are taken to control the intensity of the construction noise and the time of day during which it will occur, any effects on nearby residents can be managed.

6.2.8 CUMULATIVE EFFECTS OR COMMITMENT TO A LARGER ACTION

Development of the proposed well and reservoir is not a commitment to a larger action and is not intended to facilitate substantial population growth. It will provide enough potable water to accommodate moderate growth for the area.

6.2.9 EFFECTS ON RARE, THREATENED, OR ENDANGERED SPECIES

The proposed project will be constructed partly on an already developed site, and partly on disturbed agricultural land. It will not utilize a resource needed for the protection of rare, threatened, or endangered species.

6.2.10 AFFECTS AIR OR WATER QUALITY OR AMBIENT NOISE LEVELS

Construction and operation of the proposed well will not have a measurable effect on air or water quality. Neither will it have a long-term effect on noise levels, as discussed in Section 4.7.

6.2.11 ENVIRONMENTALLY SENSITIVE AREAS

There are no environmentally sensitive areas or resources near the proposed project. The Island of Hawai'i as a whole is subject to certain geologic hazards, such as earthquakes and lava flows. The project site is above the tsunami evacuation zone and is largely protected from lava flows by the surrounding topography. The structures built as part of the well and reservoir development will be constructed consistent with the Hawai'i Uniform Building Code for Earthquake Zone 4.

6.2.12 AFFECTS SCENIC VISTAS AND VIEWPLANES

The proposed new facilities are not within a designated scenic area. They will not significantly alter the visual character of the site or significantly change views across it.

6.2.13 REQUIRES SUBSTANTIAL ENERGY CONSUMPTION

Operation of the new well and the SCADA system could require slightly more energy than is used for the withdrawals from the spring sources. The increase is relatively small, however, and would be largely offset by the elimination of the springs as primary sources.

6.3 ANTICIPATED DETERMINATION

In view of the foregoing, DWS concludes that the proposed project will not have a significant adverse impact on the environment. Consequently, it is issuing a Finding of No Significant Impact for the proposed action.

7.0 CONSULTATION & DISTRIBUTION

7.1 PARTIES CONSULTED

Table 7-1 lists the organizations contacted in the development of the Draft EA (DEA).

Table 7-1. Organizations Contacted in Preparation of the Draft EA

State Agencies
Department of Health, Safe Drinking Water Branch
Historic Preservation Division, Department of Land and Natural Resources
County of Hawai'i
Department of Environmental Management, Solid Waste Division
Department of Planning

7.2 DRAFT EA DISTRIBUTION

The Draft EA was distributed to the individuals and organizations listed in Table 7-2. A copy of the distribution letter is included here as Figure 7-1.

Table 7-2. Preliminary Draft EA Distribution List

Federal Agencies	
	District Engineer, U.S. Army Engineer District, Honolulu
Environmental Protection Agency, Pacific Islands Contact Office	U.S. Fish & Wildlife Service, Pacific Island Eco-Region
U.S. Department of Agriculture, Natural Resources Conservation Service	U.S. Geological Survey, Department of the Interior
State Agencies	
Office of Environmental Quality Control	Department of Business and Economic Development & Tourism, Office of Planning (5 copies)
State Department of Defense	Department of Health, Environmental Planning Office
Department of Education	Department of Health, Safe Drinking Water Branch
Department of Hawaiian Home Lands	Department of Land and Natural Resources (DLNR) (5 copies)
Office of Hawaiian Affairs	DLNR Historic Preservation Division
State Department of Accounting and General Services	
State Department of Agriculture	
County of Hawai'i	
Planning Department	Fire Department
Department of Parks and Recreation	Department of Environmental Management, Solid Waste Division
Other Organizations	
Environmental Reporter, *Hawai'i Tribune Herald*	Environmental Reporter, *West Hawai'i Today*
Water Resources Center, University of Hawai'i	Environmental Center, University of Hawai'i
Libraries and Depositories	
Hawai'i State Library Hawai'i Documents Center	Hilo Regional Public Library
University of Hawai'i, Hilo Campus Library	Kailua-Kona Regional Library
Nā'ālehu Public Library	

Figure 7-1. Draft EA Distribution Letter

[Date]

Subject: Wai'ōhinu Production Well and Reservoir
Draft Environmental Assessment/Anticipated Finding of No Significant Impact

A copy of the Draft Environmental Assessment (DEA) for the proposed Wai'ōhinu Well and Reservoir project is enclosed. An announcement of its availability will appear in the [date] edition of *The Environmental Notice* published by the State Office of Environmental Quality Control (OEQC).

The County of Hawai'i Department of Water Supply proposes to drill, test, and, if successful complete a new municipal water supply well on a site approximately 0.5 mile *mauka* of the community of Wai'ōhinu and adjacent to an existing 50,000-gallon tank. A single-story, 575 square-foot control building is planned to house the motor control center, chlorination system, and other electrical equipment needed to start and stop the well pump. Water would be stored in a new 0.50 MG reinforced concrete storage tank. Water from the well would replace most of the usage of the present water sources (Hā'ao and Old Mountain House Tunnel Springs). The DWS would install remote system monitoring units that will report to a master station at Ka'ū Baseyard; the equipment will allow the DWS to monitor the proposed well and other wells in the system.

As indicated in the DEA, the Department of Water Supply has concluded that construction and operation of the well and reservoir would not have substantial adverse impacts on the environment. It proposes to mitigate short-term construction impacts on nearby residents by requiring the selected contractor to incorporate mitigation measures in its work program. Consequently, it anticipates a Finding of No Significant Impact (FONSI) for the project.

We would appreciate it if you would review the DEA/Anticipated FONSI and write to us with any comments or suggestions. If you have any questions or would like additional information before reaching a conclusion, please call Ms. Melissa May or me at (808) 550-4483.

Sincerely,

Perry J. White

Enclosure: *Draft Environmental Assessment, Wai'ōhinu Production Well and Reservoir*

cc: Office of Environmental Quality Control (w/o Attachment)
Mr. Milton D. Pavao, Hawaii County DWS (w/o Attachment)

7.3 COMMENTS RECEIVED ON THE DRAFT EA

The comment period for the Draft EA ended on March 9, 2005. Table 7-3 below lists the parties that submitted written comments on the project. Their comments and DWS' responses to them are reproduced at the end of this section.

Table 7-3. Written Comments Received on the Draft EA

No.	*Name & Title of Commenter*	*Organization*
1	Barbara Bell, Director	County of Hawai'i Dept. of Environmental Management
2	Gordon Tribble, District Chief	U.S. Geological Survey, Water Resources Division
3	Darryl Oliviera, Fire Chief	County of Hawai'i Fire Department
4	Ernest Y.W. Lau, Public Works Administrator	Department of Accounting and General Services, State of Hawai'i
5	Patricia Hamamoto, Superintendent	Department of Education, State of Hawai'i
6	Rodney K. Haraga, Director	Department of Transportation, State of Hawai'i
7	Clyde W. Nāmu'o, Administrator	Office of Hawaiian Affairs, State of Hawai'i
8	Christopher J. Yuen, Planning Director	Planning Department, County of Hawai'i
9	Warren F. Wegesend, Jr., Administrator	Land Division, Department of Land and Natural Resources, State of Hawai'i
10	William Wong, P.E., Chief	Safe Drinking Water Branch, State of Hawai'i Dept. of Health
11	Galen M. Kuba, Division Chief	Engineering Division, Dept. of Public Works, County of Hawai'i
12	Genevieve Salmonson, Director	Office of Environmental Quality Control, State Dept. of Health
13	Denis R. Lau, P.E., Chief	Clean Water Branch, State of Hawai'i Dept. of Health

Source: Compiled by Planning Solutions, Inc. (2005).

Harry Kim
Mayor

Barbara Bell
Director

Nelson Ho
Deputy Director

County of Hawaii

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street, Room 210 • Hilo, Hawai'i 96720-4252
(808) 961-8083 • Fax (808) 961-8086

January 31, 2005

Mr. Perry J. White
Planning Solutions
Ward Plaza, Suite 330
210 Ward Avenue
Honolulu, HI 96817

Re: Wai'ohinu Production Well and Reservoir
Draft Environmental Assessment/Anticipated Finding of No Significant Impact

Dear Mr. White,

We have no comments at this time regarding the proposed project.

Thank you for allowing us the opportunity to offer input on this project and if we can be of further assistance, please don't hesitate to contact us.

Barbara Bell
DIRECTOR

cc: Mr. Milton Pavao, Department of Water Supply
State of Hawai'i OEQC

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Ms. Barbara Bell, Director
Department of Environmental Management
County of Hawai'i
25 Aupuni Street, Room 210
Hilo, Hawai'i 96720-4252

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Ms. Bell:

Thank you for your January 31, 2005 letter commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and your staff spent reviewing the document and understand that you have no comments at this time regarding the project.

If you have any questions, please call me or Melissa May at (808) 550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, Hawai'i County Department of Water Supply
Office of Environmental Quality Control

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4012
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
WATER RESOURCES
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813
Phone: (808) 587-2400/Fax: (808) 587-2401

February 2, 2005

Mr. Perry J. White
Planning Solutions
1210 Auahi Street, Suite 221
Honolulu, Hawaii 96814

Dear Mr. White:

Subject: Waiōhinu Production Well and Reservoir
Draft Environmental Assessment/Anticipated Finding of No Significant Impact

Thank you for forwarding the subject Draft Environment Assessment/Anticipated Finding of No Significant impact for review and comment by the staff of the U.S. Geological Survey, Water Resources Discipline, Hawaii District office. We regret however, that due to prior commitments and lack of available staff, we are unable to review this document.

We appreciate the opportunity to participate in the review process.

Sincerely,

Gordon Tribble
District Chief

PLANNING SOLUTIONS

U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
HONOLULU HAWAII
JAN 21 2005
RECEIVED

January 20, 2005

Subject: Wai'ōhinu Production Well and Reservoir
Draft Environmental Assessment/Anticipated Finding of No Significant Impact

A copy of the Draft Environmental Assessment (DEA) for the proposed Wai'ōhinu Well and Reservoir project is enclosed. An announcement of its availability will appear in the January 23, 2005 edition of *The Environmental Notice* published by the State Office of Environmental Quality Control (OEQC).

The County of Hawai'i Department of Water Supply proposes to drill, test, and, if successful complete a new municipal water supply well on a site approximately 0.5 mile *mauka* of the community of Wai'ōhinu and adjacent to an existing 50,000-gallon tank. A single-story, 575 square-foot control building is planned to house the motor control center, chlorination system, and other electrical equipment needed to start and stop the well pump. Water would be stored in a new 0.50 MG reinforced concrete storage tank. Water from the well would replace most of the usage of the present water sources (Hā'ao and Old Mountain House Tunnel Springs). The DWS would install remote system monitoring units that will report to a master station at Ka'ū Baseyard; the equipment will allow the DWS to monitor the proposed well and other wells in the system.

As indicated in the DEA, the Department of Water Supply has concluded that construction and operation of the well and reservoir would not have substantial adverse impacts on the environment. It proposes to mitigate short-term construction impacts on nearby residents by requiring the selected contractor to incorporate mitigation measures in its work program. Consequently, it anticipates a Finding of No Significant Impact (FONSI) for the project.

We would appreciate it if you would review the DEA/Anticipated FONSI and write to us with any comments or suggestions. If you have any questions or would like additional information before reaching a conclusion, please call Ms. Melissa May or me at (808) 550-4483.

Sincerely,

Perry J. White

Enclosure: *Draft Environmental Assessment, Wai'ōhinu Production Well and Reservoir*

cc: Office of Environmental Quality Control (w/o Attachment)
Mr. Milton D. Pavao, Hawaii County DWS (w/o Attachment)

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4812
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

Draft Environmental Assessment

WAI'ŌHINU PRODUCTION WELL AND RESERVOIR

PREPARED FOR:
Department of Water Supply
County of Hawai'i

PREPARED BY:
PLANNING SOLUTIONS

DECEMBER 2004

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Mr. Gordon Tribble, District Chief
Water Resources Division
U.S. Geological Survey
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawai'i 96813

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Mr. Tribble:

Thank you for your February 2, 2005 letter regarding the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir*. We understand that your staff will be unable to the review the document. If you have any questions regarding the project, please call me or Melissa May at (808) 550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, Hawai'i County Department of Water Supply
Office of Environmental Quality Control

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4012
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

Harry Kim
Mayor

Darryl J. Oliveira
Fire Chief

Desmond K. Wery
Deputy Fire Chief

County of Hawai'i
FIRE DEPARTMENT

25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720
(808) 961-8297 • Fax (808) 961-8296

February 4, 2005

TO : PERRY J. WHITE
PLANNING SOLUTIONS INC.
210 WARD AVE., SUITE. 330
HONOLULU, HAWAII 96814

FROM : DARRYL OLIVEIRA, FIRE CHIEF

PROJECT : WAI'OHINU WELL AND RESERVOIR
APPLICANT: DEPT. OF WATER SUPPLY, COUNTY OF HAWAI'I
LOCATION: KA'U DISTRICT; ISLAND OF HAWAI'I
TAX MAP KEY: 9-5-003:019

We have no comments to offer at this time in reference to the above-mentioned DWS proposed project.

DARRYL OLIVEIRA
FIRE CHIEF

JCP:cmj

Hawai'i County is an Equal Opportunity Provider and Employer.

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Chief Darryl Oliveira
County of Hawai'i Fire Department
25 Aupuni Street, Suite 103
Hilo, Hawai'i 96720

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Chief Oliveira:

Thank you for your February 4, 2005 letter commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and your staff spent reviewing the document.

We understand that the Fire Department has no comments to offer at this time in reference to the project.

If you have any questions, please call me or Melissa May at (808) 550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4012
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

LINDA LINGLE
GOVERNOR

PATRICIA HAMAMOTO
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

February 4, 2005

Mr. Perry J. White
Planning Solutions
210 Ward Avenue, Suite 330
Honolulu, Hawaii 96814-4012

Dear Mr. White:

Subject: Draft Environmental Assessment for the
Waiohinu Well and Reservoir, Kau, Hawaii

The Department of Education (DOE) has reviewed the Draft Environmental Assessment for a new water well north of the Waiohinu community. The Hawaii County Department of Water Supply plans to develop the well and in the future, a storage tank and control building.

The DOE has no comment concerning the proposed project. If you have any questions, please call Rae Loui, Assistant Superintendent of the Office of Business Services, at 586-3444 or Heidi Meeker of the Facilities and Support Services Branch, at 733-4862.

Very truly yours,

Patricia Hamamoto
Superintendent

PH:mp

c: Rae Loui, OBS

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Ms. Patricia Hamamoto, Superintendent
Department of Education
State of Hawai'i
P.O. Box 2360
Honolulu, Hawai'i 96804

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Ms. Hamamoto:

Thank you for your February 4, 2005 letter commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and your staff spent reviewing the document.

We understand that the DOE has no comment concerning the proposed project at this time.

If you have any questions concerning the project, please call me or Melissa May at (808)550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4012
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

LINDA LINGLE
GOVERNOR

RUSS K. SAITO
COMPTROLLER

KATHERINE H. THOMASON
DEPUTY COMPTROLLER

(P)1039.5

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

FEB - 7 2005

Mr. Perry White
Planning Solutions
Ward Plaza, Suite 300
210 Ward Avenue
Honolulu, Hawaii 96814

Dear Mr. White:

Subject: Wai'ohinu Production Well and Resevoir
Draft Environmental Assessment/Anticipated Finding of No Significant Impact
Ka'u District, Island of Hawaii
TMK: 9-5-003:019

Thank you for the opportunity to review the information regarding the subject project. The project does not impact any of the Department of Accounting and General Services' projects or existing facilities and we have no comments to offer.

If you have any questions regarding the above, please call Mr. David DePonte of the Planning Branch at 586-0492.

Sincerely,

ERNEST Y. W. LAU
Public Works Administrator

DD:mo
c: Ms. Genevieve Salmonson, OEQC
Mr. Milton Pavao, Hawaii County DWS

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Mr. Ernest Y.W. Lau, Public Works Administrator
Department of Accounting and General Services
State of Hawai'i
P.O. Box 119
Honolulu, Hawai'i 96810

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Mr. Lau:

Thank you for your February 7, 2005 letter commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and your staff spent reviewing the document.

We are pleased that the project will not impact any of your Department's projects or facilities and understand that you have no further comments.

If you have any questions regarding the project, please call me or Melissa May at (808)550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4012
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

LINDA LINGLE
GOVERNOR

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1579

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

February 4, 2005

Mr. Peter J. White
Planning Solutions
Ward Plaza, Suite 330
210 Ward Avenue
Honolulu, Hawaii 96814-4012

Dear Mr. White:

Subject: Wai'ohinu Production Well and Reservoir
Draft Environmental Assessment/Anticipated Finding of No Significant Impact
TMK: 9-5-003: 019

Thank you for your transmittal requesting our review of the subject project.

The proposed action will not impact our State transportation facilities.

We appreciate the opportunity to provide comments.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Mr. Rodney K. Haraga, Director
Department of Transportation
State of Hawai'i
869 Punchbowl Street
Honolulu, Hawai'i 96813-5097

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Mr. Haraga:

Thank you for your February 4, 2005 letter commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and your staff spent reviewing the document and providing written comments.

Thank you for confirming that the project will not impact your State transportation facilities. Should you have any questions, please call me or Melissa May at (808) 550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4012
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD05/1712

February 12, 2005

Planning Solutions
Attention: Perry White / Melissa May
210 Ward Avenue Suite 330
Honolulu, Hawai'i

RE: Review of Draft Environmental Assessment (DEA) and Anticipated Finding of No Significant Impact for the Wai'ōhinu Production Well and Reservoir, TML 9-5-003:019

Dear Perry White,

The Office of Hawaiian Affairs (OHA) is in receipt of your January 20, 2005, request for comments on the above project, to drill, test, and complete a new municipal well.

OHA appreciates the proper use of 'okina and kahakō in the document. We also have the following constructive comments to offer.

First, we are concerned that there are no planned pump tests to determine if the operation of the proposed will adversely affect the flow of springs in the area, particularly Hā'ao Springs. Hawai'i water law, including the State Constitution, case law and the Water Code (HRS §174C) protects and guarantees Hawaiian water rights, including the use of surface water sources for traditional and customary purposes. While abandonment of the municipal use of the springs could possibly enhance the ability for Hawaiians to utilize these springs for these protected purposes, well withdrawals that decrease or eliminate the spring flow would necessarily infringe on these rights. We did not locate meaningful consideration of these possibilities in the draft environmental assessment. We suggest that the preparers contact Hawaiians in the area to determine the potential significance of these springs as well. You may feel free to contact OHA's East Hawai'i Community Affairs Coordinator Ululani Sherlock at (808) 920-6148 as a preliminary way to identify appropriate people in the project area.

Secondly, we note that the document refers to abandonment of certain facilities as part of this project, particularly one water tank and the two spring diversions. OHA encourages the county DWS to restore these areas to their natural state rather than abandoning infrastructure in place as an integral part of the project. This could help mitigate visual and other impacts.

Finally, we note that the project anticipates acquiring land from the state of Hawai'i. It is not clear from the report of these are "ceded" (former crown and government) lands. The Office of Hawaiian Affairs benefits from revenue from the use of "ceded" lands, and while on page 4-16 the document cites Table 3-2 as noting the cost of acquisition, no such information is included in that table. In any case, OHA consistently opposes the sale of "ceded" lands by any entity unless there is a direct benefit to native Hawaiians and Hawaiians. This is a possible barrier to successful completion of the project that should be noted in the alternatives section.

Thank you for the opportunity to comment. If you have further questions, please contact Dr. Jonathan Likeke Scheuer at 594-1946 or e-mail him at jonathans@oha.org.

Sincerely,

Clyde W. Nāmu'o
Administrator

CC: Ululani Sherlock
Office of Hawaiian Affairs
162 A Baker Avenue
Hilo, Hawai'i 96720

PLANNING
SOLUTIONS

March 29, 2005
2004-0018-001

Mr. Clyde W. Nāmu'o, Administrator
Office of Hawaiian Affairs
State of Hawai'i
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawai'i 96813

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Mr. Nāmu'o:

Thank you for your February 12, 2005 letter (your reference HRD05/1712) commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* Thank you also for noticing and commending us on our proper usage of Hawaiian grammar in the report. We appreciate the time you and your staff spent reviewing the document and responding.

Item-by-item responses to your comments (reproduced for your convenience in italics before each response) are provided below.

Comment 1:

> *"First, we are concerned that there are no planned pump tests to determine if the operation of the proposed [well] will adversely affect the flow of springs in the area, particularly Hā'ao Springs. Hawai'i water law, including the State Constitution, case law and the Water Code (HRS §174C) protects and guarantees Hawaiian water rights, including the use of surface water sources for traditional and customary purposes. While abandonment of the municipal use of the springs could possibly enhance the ability for Hawaiians to utilize these springs for these protected purposes, well withdrawals that decrease or eliminate the spring flow would necessarily infringe on these rights. We did not locate meaningful consideration of these possibilities in the draft environmental assessment. We suggest that the preparers contact Hawaiians in the area to determine the potential significance of these springs as well. You may feel free to contact OHA's East Hawai'i Community Affairs Coordinator Ululani Sherlock at (808) 920-6148 as a preliminary way to identify appropriate people in the project area."*

Response:

All of the springs in the area are fed by what is referred to as perched groundwater. These are entirely separate from the groundwater that the proposed well would tap. Hence, there is no possibility that withdrawals from the well will affect spring flow. We have revised the discussion to read as shown below to better highlight this separation. The new material is underlined for your convenience.

Section 4.2.1 (Page 4-2, Paragraph 2)

> *"As shown in Figure 4-1, groundwater exists in a basal lens in makai areas and as high-level groundwater in the mauka areas near the project site. The two spring sources currently serving the Wai'ōhinu-Nā'ālehu-South Point system are located at an elevation of approximately 2,200 feet above sea level. They are fed by a perched groundwater source that is hydrologically isolated from the groundwater (elevation approximately 1,000 feet above sea level) that the proposed well would use."*

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Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

In addition to the foregoing, we have also revised the third paragraph in Section 4.2.2.2 to read as follows.

> *Initially, high-level groundwater withdrawn from the proposed well will be offset on a one-for-one basis by a decrease in the use of the spring source. When the spring source is eventually abandoned, the water that was formerly diverted into the DWS system will return to its natural pathways, flowing overland or through poorly defined drainageways as it did before. It will quickly infiltrate into the porous soils and lavas of the area, once again becoming high-level groundwater. Because the groundwater feeding the well is hydrologically separated from that serving the spring sources by around 1,000 feet of unsaturated ground, withdrawal of groundwater from the well has no potential to impact the natural flows of the springs.*

Because the well would not have the potential to reduce the springs' flow, it will not infringe upon their continued use by Hawaiians and, as you wrote, could enhance that use when municipal use of the springs eventually ceases.

Comment 2:

> *"Secondly, we note that the document refers to abandonment of certain facilities as part of this project, particularly one water tank and the two spring diversions. OHA encourages the county DWS to restore these areas to their natural state rather than abandoning infrastructure in place as an integral part of the project. This could help mitigate visual and other impacts."*

Response:

The DEA mentions that preliminary plans called for the existing water tank at the site to either be abandoned or demolished as part of the project. DWS has subsequently decided to demolish the tank and remove the debris. This is consistent with your suggestion.

Infrastructure at the spring site will not be abandoned. It will remain in place and DWS will continue to use it to supply the residents living above the well site and within DWS' South Point service area until such time as an alternate source is found and use of the springs is completely discontinued. At that time the existing facilities will be either removed or used for another purpose.

Comment 3:

> *"Finally, we note that the project anticipates acquiring land from the State of Hawai'i. It is not clear from the report if these are "ceded" (former crown and government) lands. The Office of Hawaiian Affairs benefits from revenue from the use of "ceded" lands, and while on page 4-16 the document cites Table 3-2 as noting the cost of acquisition, no such information is included in that table. In any case, OHA consistently opposes the sale of "ceded" lands by any entity unless there is a direct benefit to native Hawaiians and Hawaiians. This is a possible barrier to successful completion of the project that should be noted in the alternatives section."*

Response:

The plans for purchasing the land for the well site at the time the Draft EA was released were preliminary. DWS has since learned that the project site is on ceded lands. As such, they are no longer planning to purchase the land outright. Instead, the State of Hawai'i would transfer only managerial rights to DWS via an Executive Order upon the approval of the well project. The title would remain with the State and the lands would remain as ceded lands. This updated information is included in Sections 3.1 and 4.14 of the Final EA.

Thank you again for your comments. If you have any further questions, please call me or Melissa May at (808)550-4483.

Sincerely,

Penny J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

Harry Kim
Mayor

Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • Fax (808) 961-8742

February 15, 2005

Mr. Perry J. White
Planning Solutions
Ward Plaza, Suite 330
210 Ward Avenue
Honolulu HI 96814-4012

Dear Mr. White:

SUBJECT: **Draft Environmental Assessment**
Applicant: Department of Water Supply
Project: Waiohinu Production Well and Reservoir
TMK: 9-5-3:por. of 19 (Tank Site "A" and Remainder)

This is to acknowledge receipt on January 21, 2005 of a copy of the Draft Environmental Assessment for the Waiohinu Production Well and Reservoir.

The proposed development, which consists of two phases, would replace Ha'ao and Old Mountain House Tunnel Springs as a water source. The proposal is to drill, test, and, if successful, complete a new municipal water supply well. Additional improvements include a single-story, 575 square foot control building, a .50 MG reinforced concrete storage tank and remote system monitoring units. The existing reservoir would be abandoned or demolished.

By Subdivision No. 4795, approved on April 30, 1982, TMK: 9-5-3:19, consisting of 10.38 acres, was subdivided into Tank Site "A", consisting of .225 acres, and remainder, consisting of 10.155 acres. However, no tax map key numbers were assigned to each parcel.

Hawai'i County is an equal opportunity provider and employer.

These parcels are designated Agricultural by the State Land Use Commission and zoned Agricultural (A-1a) by the County. The General Plan designation is Orchard. They are not located in the County's Special Management Area.

Other than the foregoing, we have no further comments to offer.

If you have questions, please feel free to contact Esther Imamura or Larry Brown of our office at 961-8288.

Sincerely,

CHRISTOPHER J. YUEN
Planning Director

ETI:cd
P:\WPWIN60\ETI\EAdraft\Pre-consult\WhiteWaiohinuWell.doc

xc: Planning Department - Kona

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Mr. Christopher J. Yuen, Planning Director
Planning Department
County of Hawai'i
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720-3043

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Mr. Yuen:

Thank you for your February 15, 2005 letter commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and your staff spent reviewing the document and providing written comments.

Item-by-item responses to your comments (reproduced for your convenience in italics before each response) are provided below.

Comment 1:

By Subdivision No. 4795, approved on April 30, 1982, TMK 9-5-3:19, consisting of 10.38 acres, was subdivided into Tank Site "A", consisting of .225 acres, and remainder, consisting of 10.153 acres. However, no tax map key numbers were assigned to each parcel. These parcels are designated Agricultural by the State Land Use Commission and zoned Agricultural (A-1a) by the County. The General Plan designation is Orchard. They are not located in the County's Special Management Area."

Response:

Thank you for correcting the parcel information we presented in the document. Your office also apprised us of the correction by phone, which we greatly appreciate. The Final EA has been revised to reflect these changes. Thank you also for confirming County and State zoning and land use designations, which match those cited in the EA. We included the General Plan designation you provided in Section 4.13 of the Final EA. We will provide your office with a copy of that document when it is completed.

If you have any further questions concerning the project, please call me or Melissa May at (808) 550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4012
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 16, 2005
LD-NAV

WAIOHINUWELL.RCM

Mr. Milton Pavao
Department of Water Supply
County of Hawaii
345 Kekuanaoa Street, Suite 20
Hilo, Hawaii 96720

Dear Mr. Pavao:

Subject: Draft Environmental Assessment for Waiohinu Production Well and Reservoir
Island of Hawaii, Hawaii – TMK: 3rd/ 9-5-003: 019

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of the DEA pertaining to the subject matter to the following DLNR Divisions for their review and comment:

- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office

Enclosed please find a copy of the Commission on Water Resource Management and Engineering Division comments and Hawaii District Land Office response.

The Department of Land and Natural Resources has no other comment to offer on the subject matter. If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

WARREN F. WEGESEND JR
Administrator

C: HDLO
Planning Solutions, Inc.

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 28, 2005

LD/NAV
Ref.: WAIOHINUWELL.CMT Suspense Date: 2/7/05

MEMORANDUM:

TO: XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
✓XXX Land-Hawaii District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA)
Project: WAIOHINU PRODUCTION WELL & RESERVOIR
Authority: County of Hawaii Department of Water Supply
Consultant: Planning Solutions
TMK: (3) 9-5-003: 019

Please review the DEA pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments. ( ) Comments attached

Division: Lamp Signed:

Date: 2/11/05 Name: Harry Yada

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 28, 2005

LD/NAV
Ref.: WAIOHINUWELL.CMT

Suspense Date: 2/7/05

MEMORANDUM:

TO: ✓XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Hawaii District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA)
Project: WAIOHINU PRODUCTION WELL & RESERVOIR
Authority: County of Hawaii Department of Water Supply
Consultant: Planning Solutions
TMK: (3) 9-5-003: 019

Please review the DEA pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments.

(X) Comments attached.

Division: Engineering

Signed: Eric T. Hirano

Date: 2/4/05

Name: ERIC T. HIRANO, CHIEF ENGINEER

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LA/NAV

Ref.: WAIOHINUWELL.CMT
Hawaii.302

COMMENTS

(X) **We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is not located within a 100-year flood plain, Zones A or V. The project site is located in Zone X. The Flood Insurance Program does not have any regulations for development within Zone X.**

( ) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

( ) Other: _____

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: Eric T. Hirano
ERIC T. HIRANO, CHIEF ENGINEER

Date: 2/4/05

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHIYOME L. FUKINO, M.D.
LAWRENCE H. MIKE, M.D., J.D.
STEPHANIE A. WHALEN

YVONNE Y. IZU
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

February 4, 2005

TO: Mr. Warren Wegesend, Jr., Administrator
Land Division

FROM: Yvonne Y. Izu, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Draft EA – Waiohinu Production Well and Reservoir

FILE NO.: WAIOHINUWELL.CMT

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the 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. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[x] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

[ ] We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[x] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

[ ] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

[ ] OTHER:

If there are any questions, please contact Ryan Imata at 587-0255.

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

January 28, 2005

LD/NAV
Ref.: WAIOHINUWELL.CMT

Suspense Date: 2/7/05

MEMORANDUM:

TO: XXX Engineering Division
✓XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Hawaii District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA)
Project: WAIOHINU PRODUCTION WELL & RESERVOIR
Authority: County of Hawaii Department of Water Supply
Consultant: Planning Solutions
TMK: (3) 9-5-003: 019

Please review the DEA pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments. (X) Comments attached.

Division: CWRM Signed:

Date: 2/3/05 Name: Ryan Imata

RECEIVED
05 JAN 31 A11:52

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Mr. Warren F. Wegesend, Jr., Administrator
Land Division
Department of Land and Natural Resources
State of Hawai'i
P.O. Box 621
Honolulu, Hawai'i 96809

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Mr. Wegesend:

Thank you for your February 16, 2005 letter (your reference LD-NAV WAIOHINUWELL.RCM) commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and other DLNR staff spent reviewing the document and providing written comments.

Item-by-item responses to the comments from DLNR's various divisions (reproduced for your convenience in italics before each response) are provided below.

Comment 1 (Engineering Division):

"We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is not located within a 100-year flood plain, Zones A or V. The project site is located in Zone X. The Flood Insurance Program does not have any regulations for development within Zone X."

Response:

Thank you for confirming that the project site is within Flood Zone X and is not regulated by the Federal Flood Insurance Program. This is in accordance with the assessment included in Section 5.2.7 of the DEA.

Comment 2 (Commission on Water Resource Management):

"We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan."

Response:

The DWS plans to coordinate with other county agencies to ensure that the project is incorporated into the Water Use and Development Plan.

Comment 3 (Commission on Water Resource Management):

"A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project."

Response:

Thank you for confirming this. These approvals are listed as required permits within the EA.

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Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

Thank you again for your comments. We understand that DLNR's other divisions have no comments to offer on the project at this time. If you have any further questions, please call me or Melissa May at (808)550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to
EMD/SDWB

February 17, 2005

Mr. Perry J. White
Planning Solutions
Ward Plaza, Suite 330
210 Ward Avenue
Honolulu, Hawaii 96814

Dear Mr. White:

SUBJECT: COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT FOR WAI'OHINU PRODUCTION WELL AND RESERVOIR, DECEMBER 2004

We have reviewed the Draft Environmental Assessment (EA) for the Wai'ohinu Production Well and Reservoir, dated December 2004.

The Draft EA does adequately address the environmental review items that are required for DWSRF projects. This includes an appropriate review of the Federal Cross Cutters, consultation with applicable agencies, and a notice in the document and announcement that federal monies may be used.

Please have a copy of the Final Environmental Assessment and findings and determination sent to this office when completed.

If you have any questions or comments, please contact Denise Dang of the Safe Drinking Water Branch, at 586-4258.

Sincerely,

WILLIAM WONG, P.E., CHIEF
Safe Drinking Water Branch
Environmental Management Division

DD:slm

c: Milton Pavao, Hawaii Dept. of Water
Wastewater Branch

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Mr. William Wong, P.E., Chief
Safe Drinking Water Branch
Environmental Management Division
Department of Health
State of Hawai'i
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Ka'u District, Island of Hawai'i

Dear Mr. Wong:

Thank you for your February 17, 2005 letter (your reference EMD/SDWB) commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir*. We appreciate the time you and your staff spent reviewing the document and providing written comments.

Thank you very much for confirming that the information contained in the Draft EA and its publication announcement fulfills the environmental review requirements for DWSRF projects. We will provide your office with a copy of the Final EA when it is completed.

If you have any further questions concerning the project, please call me or Melissa May at (808)550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4012
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

Harry Kim
Mayor

Bruce C. McClure
Director

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
Aupuni Center
101 Pauahi Street, Suite 7 · Hilo, Hawaii 96720-4224
(808) 961-8321 · Fax (808) 961-8630

February 22, 2005

Mr. Perry J. White
Planning Solutions
Ward Plaza, Suite 330
210 Ward Avenue
Honolulu, Hawaii 96814-4012

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
Wai'hino Production Well and Reservoir
TMK: 9-5-03: 019

We have reviewed the subject project as described in your memo dated January 20, 2005 and have the following comments.

All development-generated runoff shall be disposed of on site and shall not be directed toward any adjacent properties. A drainage study should be prepared and the recommended drainage system shall be constructed meeting the approval of the Department of Public Works.

All earthwork activity, including grading and grubbing, shall conform to Chapter 10, Erosion and Sedimentation Control, of the Hawaii County Code.

Questions may be referred to Mr. Kelly Gomes of the Engineering Division at (808) 961-8327.

for GALEN M. KUBA, Division Chief
Engineering Division

KG

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PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Mr. Galen M. Kuba, Division Chief
Engineering Division
Department of Public Works
County of Hawai'i
101 Pauahi Street, Suite 7
Hilo, Hawai'i 96720-4224

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Mr. Kuba:

Thank you for your February 22, 2005 letter commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and your staff spent reviewing the document and providing written comments. Item-by-item responses to your comments (reproduced for your convenience in italics before each response) are provided below.

Comment 1:

"All development-generated runoff shall be disposed of on site and shall not be directed toward any adjacent properties. A drainage study should be prepared and the recommended drainage system shall be constructed meeting the approval of the Department of Public Works."

Response:

DWS' preliminary design provides for seepage pits on the well site for on-site disposal of runoff, as described in Section 3.2.2.7 of the EA. A drainage plan will be prepared and submitted to DPW once the well site design is finalized.

Comment 2:

"All earthwork activity, including grading and grubbing, shall conform to Chapter 10, Erosion and Sedimentation Control, of the Hawaii County Code."

Response:

Thank you for calling this to our attention. All earthwork activity at the site will conform to Hawai'i County Code Chapter 10, Erosion and Sedimentation Control.

Thank you again for your comments. If you have any further questions, please call me or Melissa May at (808)550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawaii 96814-4012
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

March 7, 2005

Mr. Milton D. Pavao, Manager
Department of Water Supply
345 Kekuanaoa Street, Suite 20
Hilo, Hawai'i 96720

Dear Mr. Pavao:

Subject: Draft EA for the Wai'ōhinu Production Well and Reservoir, Hawai'i

Thank you for the opportunity to review and comment on the subject project. We have the following comments.

1. Please consult with the Commission on Water Resources Management and any affected individuals or groups.

2. For assistance in completing the assessment please review the attached guidelines for water well development available at http://www.state.hi.us/health/oeqc/guidance/wells.html.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson
Director

c: Planning Solutions

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
Department of Health
State of Hawai'i
235 South Beretania Street, Suite 702
Honolulu, Hawai'i 96813

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Ms. Salmonson:

Thank you for your March 7, 2005 letter commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and your staff spent reviewing the document and providing written comments.

Item-by-item responses to your comments (reproduced for your convenience in italics before each response) are provided below.

Comment 1:

"Please consult with the Commission on Water Resources Management and any affected individuals or groups."

Response: The Draft EA was distributed to the Commission on Water Resources Management and to other relevant agencies and interested groups. Any comments received on the DEA will be reproduced in the Final EA.

Comment 2:

"For assistance in completing the assessment please review the attached guidelines for water well development available at www.state.hi.us/health/oeqc/guidance/wells.html."

Response: We have followed the OEQC *Guidelines for Assessing Water Well Development Project* throughout the EA process.

Thank you again for your comments. If you have any further questions, please call me or Melissa May at (808)550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply

Ward Plaza, Suite 330 • 210 Ward Avenue • Honolulu, Hawai'i 96814-4912
Phone: 808 550-4483 • Fax: 808 550-4549 • www.psi-hi.com

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD / CWB

03008PKP.05

March 1, 2005

Mr. Perry J. White
Planning Solutions
210 Ward Avenue, Suite 330
Honolulu, Hawaii 96814-4012

Dear Mr. White:

Subject: Waiohinu Production Well and Reservoir
Draft Environmental Assessment/Anticipated Finding of No Significant Impact

The Department of Health, Clean Water Branch (CWB), has reviewed the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Control Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters..."

2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:

   a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).

   b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.**

   c. Discharges of treated effluent from leaking underground storage tank remedial activities.

   d. Discharges of once through cooling water less than one (1) million gallons per day.

   e. Discharges of hydrotesting water.

   f. Discharges of construction dewatering effluent.

   g. Discharges of treated effluent from petroleum bulk stations and terminals.

   h. Discharges of treated effluent from well drilling activities.

   i. Discharges of treated effluent from recycled water distribution systems.

   j. Discharges of storm water from a small municipal separate storm sewer system.

   k. Discharges of circulation water from decorative ponds or tanks.

   The CWB requires that a Notice of Intent (NOI) to be covered by an NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/index.html

3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. NPDES general permits do not cover discharges into Class 1 or Class AA State waters). **Please note that an NPDES permit will not be issued for discharges of rinse water from the proposed Aircraft Rinse Facility unless adequate treatment is performed.** An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/index.html

4. Hawaii Administrative Rules, Section 11-55-38, also requires the applicant to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD.

If you have any questions, please contact Ms. Kris Poentis of the Engineering Section, CWB, at 586-4309.

Sincerely,

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:np

PLANNING SOLUTIONS

March 22, 2005
2004-0018-001

Mr. Denis R. Lau, P.E., Chief
Clean Water Branch
Department of Health
State of Hawai'i
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

Subject: Draft Environmental Assessment (DEA), Wai'ōhinu Production Well and Reservoir, Kā'u District, Island of Hawai'i

Dear Mr. Lau:

Thank you for your March 1, 2005 letter (your reference EMD/CWB 03008PKP.05) commenting on the County of Hawai'i Department of Water Supply's *Draft Environmental Assessment (DEA): Wai'ōhinu Production Well and Reservoir.* We appreciate the time you and your staff spent reviewing the document and providing written comments.

Item-by-item responses to your comments (reproduced for your convenience in italics before each response) are provided below.

Comment 1:

"The Army Corps of Engineers should be contacted at 438-9258 to identify whether a Federal license or permit (including a Department of the Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Control Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."

Response: Thank you for the information you provided concerning potential permits required for the proposed stormwater drainage facilities. DWS has consulted with the Corps of Engineers and found that a Department of the Army permit will not be needed.

Comment 2:

"A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:

a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).

b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the commencement of the construction activities.

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c. Discharges of treated effluent from leaking underground storage tank remedial activities.

d. Discharges of once through cooling water less than one (1) million gallons per day.

e. Discharges of hydrotesting water.

f. Discharges of construction dewatering effluent.

g. Discharges of treated effluent from petroleum bulk stations and terminals.

h. Discharges of treated effluent from well drilling activities.

i. Discharges of treated effluent from recycled water distribution systems.

j. Discharges of storm water from a small municipal separate storm sewer system.

k. Discharges of circulation water from decorative ponds or tanks.

The CWB requires that a Notice of Intent (NOI) to be covered by an NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/index.html."

Response: Thank you for the comprehensive listing of the activities for which NPDES General Permit coverage is required. At present DWS expects coverage will be required only under item b., construction activities.

Comment 3:

"The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. NPDES general permits do not cover discharges into Class 1 or Class AA State waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at: http:www.hawaii.gov/healthlenvironmental/water/cleanwater/index.html"

Response: The proposed project would not result in a non-stormwater discharge into State waters. As discussed, DWS is seeking NPDES permit coverage only for construction activities, for which general permit coverage is available.

Comment 4:

Hawaii Administrative Rules, Section 11-55-38, also requires the applicant to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD.

Response: A copy of the Draft EA has been sent to SHPD, and their comments (if any) will be reproduced in the Final EA. Copies of any NOI's submitted to the Clean Water Branch will also be sent to SHPD.

Thank you again for your comments. If you have any further questions, please call me or Melissa May at (808)550-4483.

Sincerely,

Perry J. White

cc: Milton D. Pavao, County of Hawai'i Department of Water Supply
Office of Environmental Quality Control

8.0 BIBLIOGRAPHY

CWRM (State of Hawai'i Commission on Water Resource Management). (1995) *Ground Water Hydrologic Units.* In Water Data Section of CWRM web site. URL: http://www.state.hi.us/dlnr/cwrm/data/maps.htm

County of Hawai'i (2001) *County Of Hawai'i General Plan Revision.* County of Hawai'i Planning Department, December 21, 2001.

DBEDT (State of Hawai'i Department of Business, Economic Development, and Tourism) (2002) *2002 Data Book.* URL: http://www.hawaii.gov/dbedt/db02/sec01.html

DOH (State of Hawai'i Department of Health) (2003) *2002 Groundwater Contamination Maps for the State of Hawai'i.* Environmental Health Division, Safe Drinking Water Branch. URL: http://www.hawaii.gov/health/environmental/water/sdwb/conmaps/pdf/conmaps02.pdf

DOH (State of Hawai'i Department of Health), Air Quality Branch. (2002) *2002 Annual Summary: Hawai'i Air Quality Data.* *http://www.hawaii.gov/health/environmental/air/cab/cabmaps/pdf/ansum02.pdf*

DOH (State of Hawai'i Department of Health) (2000a) *Facilities, Sites, or Areas in which HEER has an Interest.* URL: http://www.hawaii.gov/health/environmental/hazard/sitelist.xls

DOH (State of Hawai'i Department of Health) (2000b) *Classification of Hawaii State Waters.* URL: http://www.state.hi.us/health/eh/cwb/wqmaps/wqstand.htm

EPA (Environmental Protection Agency). (2004). 2004 Edition of the Drinking Water Standards and Health Advisories. URL: http://www.epa.gov/waterscience/drinking/standards/dwstandards.pdf

Juvik, S.P., J.O. Juvik, and T.R. Paradise (1998) *Atlas of Hawai'i, Third Edition.* University of Hawai'i Press, Honolulu, 333 p.

Macdonald, G.A., A.T. Abbott, and F.L. Peterson. (1983). *Volcanoes in the Sea: The Geology of Hawai'i.* 2nd Edition. Honolulu: University Press, 517 p.

NOAA (National Oceanic and Atmospheric Administration) (2002) *CLIMATOGRAPHY OF THE UNITED STATES NO. 81: Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling, Degree Days1971 - 2000* . 51 Hawai'i. 21 p.

Sato, H.H., W. Ikeda, R. Paeth, R. Smythe, and M. Takehiro, Jr. (1973) *Soil Survey of the Island of Hawaii, State of Hawaii.* U.S. Dept. of Agriculture, Soil Conservation Service in cooperation with the University of Hawai'i Agricultural Experiment Station.

State of Hawai'i (2001) *Hawaii Statewide GIS Program.* Office of Planning, Department of Business, Economic Development and Tourism. URL: http://www.hawaii.gov/dbedt/gis/

USFWS (United States Fish and Wildlife Service) (2002) *Critical Habitat for 47 Plant Species from the Island of Hawaii. URL: http://pacificislands.fws.gov/CHRules/bigislandch_fs.pdf*

USGS (United States Geological Survey) (1998). *Drilling, Construction, Caliper-Log, Aquifer-Test, and Water-Quality Data for Well 8-0437-01, Waiohinu Exploratory Well, Island of Hawaii. Open-file report 98-644.*

USGS (United States Geological Survey) (1997). *Volcanic and Seismic Hazards on the Island of Hawai'i.* Compiled by USGS Staff Kathie Watson. URL: http://pubs.usgs.gov/gip/hazards/earthquakes.html

USGS National Water Information System (2004). URL: http://nwis.waterdata.usgs.gov/hi/nwis/si