

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

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September 15, 2009

Ms. Katherine Puana Kealoha, Director
State of Hawai'i
Department of Health
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

**FINAL ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
TAX MAP KEY: 5-3-004:001
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

The Department of Water Supply has reviewed and responded to the comments received on the Draft Environmental Assessment during the 30-day public comment period (which ended on June 7, 2009). After considering the additional information contained in the comments and from follow-up analyses, the agency has affirmed its preliminary determination that this project will not have significant environmental effects. Accordingly, we have issued a Finding of No Significant Impact. I would appreciate it if you would publish this notice in the next available OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form along with one hard copy of the Final EA/FONSI (electronic copies of each document are on the enclosed CD). Please call the project consultant, Mr. Perry White of Planning Solutions, Inc., at 808-550-4483, if you have any questions.

Sincerely yours,



Milton Pavao, P.E.
Manager

LEB:dfg

Encs.

- (1) Final EA/FONSI, (1 hard & 1 electronic copy)
- (2) OEQC Publication Form (1 hard and 1 electronic copy)

... Water brings progress...

*Final Environmental Assessment &
Finding of No Significant Impact*

HALA‘ULA EXPLORATORY WELL

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



SEPTEMBER 2009

PROJECT SUMMARY

Project:	HALA‘ULA EXPLORATORY WELL
Applicant/Approving Agency:	Department of Water Supply County of Hawai‘i Contact: Lawrence E. Beck, P.E. (808-961-8070 x260) 345 Kekūanaō‘a Street., Suite 20, Hilo, HI 96720
Location:	North Kohala District; Island of Hawai‘i
Tax Map Keys:	5-3-004:001
Parcel Area:	1,070 acres
Project Site Area:	Approximately 0.99 acres
State Land Use District:	Agriculture
County Zoning:	Ag-20a
Proposed Action:	The Department proposes to drill, case, and pump test an exploratory well. The exploration would help DWS determine if the well produces water of sufficient quality and quantity to warrant its development into a production source for its Hāwī-Hala‘ula Water System.
Associated Actions Requiring Environmental Assessment:	Proposed use of County land, County and federal funds.
Consultation:	The State Historic Preservation Division and parties listed in Table 7.1 were consulted during the preparation of this EA.
Required Approvals:	<ul style="list-style-type: none"> • Grading Permit, Hawai‘i County • Well Construction Permit, Commission on Water Resource Management • Construction Noise Variance (possible)
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 PURPOSE OF & NEED FOR THE PROJECT

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. DWS proposes to construct an exploratory well and perform the pump and water quality testing needed to confirm the suitability of the exploratory well for potable water supply to serve the Hāwī and Hala‘ula Water System. It would remove existing vegetation and construct a small well-drilling pad and security fence as part of the project.

DWS may seek Federal funding for the project under the Drinking Water State Revolving Fund (DWSRF) program administered by the Safe Drinking Water Branch of the State Department of Health. Because allocation of DWSRF funds would constitute a Federal action, this *Environmental Assessment* has been prepared under the dual legal authorities of Chapter 343, Hawai‘i Revised Statutes/Hawai‘i Administrative Rules §11-200 and the National Environmental Policy Act (NEPA). It incorporates the content required to comply with the Hawai‘i DWSRF program (see Section 4.1.5 for details).

1.2 PURPOSE OF & NEED FOR THE PROJECT

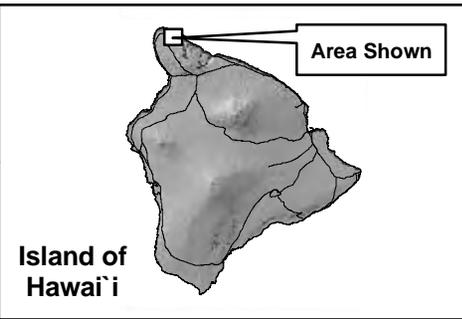
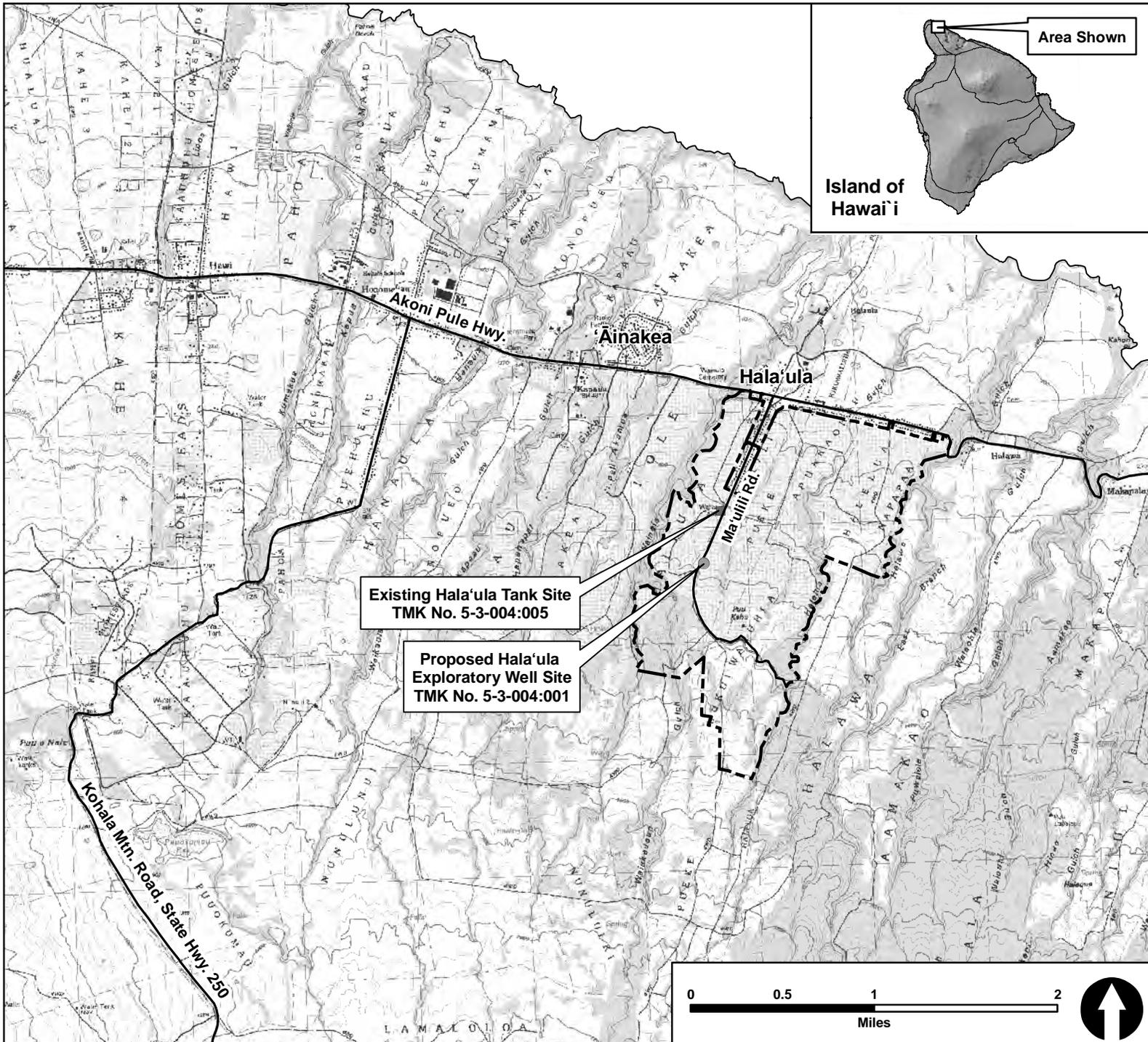
1.2.1 LOCATION AND EXISTING USE OF THE PROPOSED SITE

The proposed Hala‘ula Exploratory Well is located near the communities of Hala‘ula and ‘Āinakea in the North Kohala District of the Island of Hawai‘i (TMK 5-3-004:001, see Figure 1.1). The proposed site is on a private parcel owned by Kohala Preserve Conservation Trust, LLC. Currently, this area is a producing macadamia nut orchard and is a little over a quarter of a mile south of and uphill from the DWS’ existing 0.10 MG Hala‘ula Tank. Access to the well site is via Ma‘ulili Road off Akoni Pule Highway. If the proposed well produces water of adequate quantity and quality, DWS would then pursue the approvals needed to develop the exploratory well into a production well, add storage capacity to the site, and construct a pipeline connecting it with the existing municipal water system.

1.2.2 EXISTING HĀWĪ-HALA‘ULA WATER SYSTEM

The Hala‘ula Water System currently has no wells of its own. It is connected to, and receives all its water supply from, the two deep wells in the neighboring Hāwī Water System (Hāwī No. 1 and Hāwī No. 2, see Figure 1.2). The total rated capacity of these two wells together is 1.58 million gallons per day (MGD; see Table 1.1), however DWS regulations require that each well have a 33% reserve, so only 1.06 MGD is considered available water supply. In 2003, the average production from these wells was 0.62 MGD (Beck 2006).

The Hala‘ula Water System is a small one that serves customers in the ‘Āinakea Village subdivision, the community of Hālawa, and users along Akoni Pule Highway, Old Hala‘ula Mill Road and Ma‘ulili Road. These communities are from 300 to 650 feet above mean sea level. There is no pumping capacity in this water system and only one operational zone, one storage tank and one pressure reduction valve. In total, the Hala‘ula Water System consists of just 5 miles of pipe. Because the Hala‘ula Water System is completely dependent upon the Hāwī Water System for its water source, the following discussion frequently refers to a combined Hāwī-Hala‘ula Water System.



- Legend:**
-  Proposed Hala'ula Exploratory Well Project Parcel Boundary
 -  Roadways

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

Prepared By:

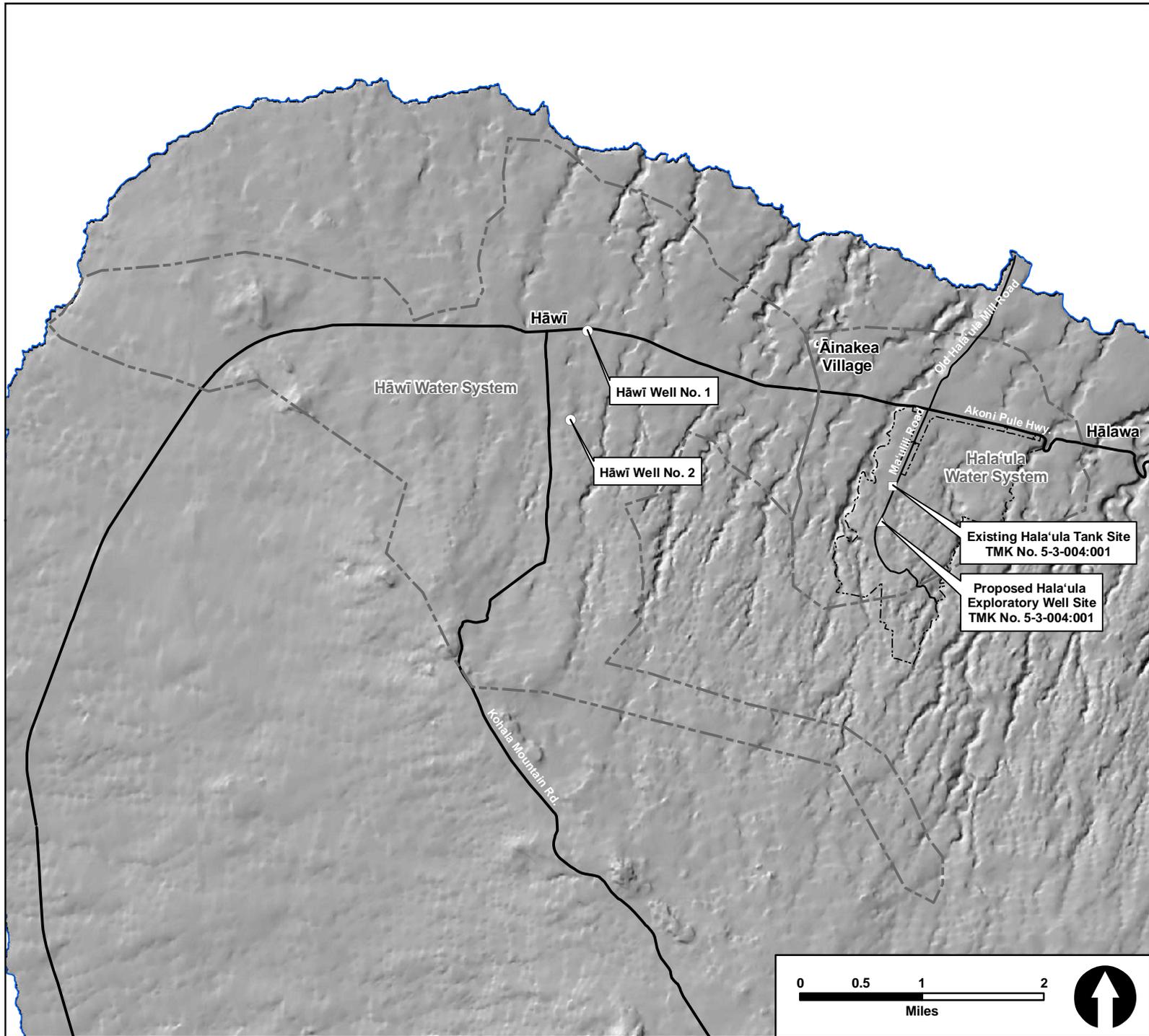

Sources:
-TNWRE
-State of Hawai'i GIS
-USGS 7.5' Quad Map

Figure 1.1:

Location Map

Hala'ula Exploratory Well

Figure 1.1: Location Map, 2009-04-03.mxd



Legend:

-  DWS Water System Boundaries
-  Project Site Parcel

Prepared For:

Dept. of Water Supply,
County of Hawai'i

Prepared By:



Sources:

- TNWRE
- State of Hawai'i GIS
- USGS 7.5' Quad Map

Figure 1.2:

Existing Hāwī-Hala'ula Water System

Hala'ula Exploratory Well

Table 1.1 Hāwī Municipal Water Wells

	Well	
	Hāwī #1	Hāwī #2
Well Number	7449-02	7349-01
Parcel TMK	5-5-002:089	5-5-016:018
Year Drilled	1975	1993
Casing Diameter (in.)	12	18
Ground Elevation (ft. MSL)	541	791
Depth Below Ground Level (ft.)		
Total Drilled	591	847
Solid Casing	581	785
Perforated Casing	-	847
Flows (MGD)		
Test Maximum	1.166	2.376
Installed Pump Capacity	0.576	1.008
Supply Rating	0.384	0.672
Source: State of Hawai‘i GIS		

1.2.3 NEED FOR WELL EXPLORATION IN THE HALA‘ULA WATER SYSTEM

As noted above, there are currently no existing municipal water sources in the Hala‘ula Water System. Adding a well source in the Hala‘ula area would increase the reliability of service to customers by removing the complete dependency on the interconnecting pipeline, act as a backup source to the Hāwī Water System, and reduce the costs associated with depending on water from source wells in the Hāwī system.

DWS is committed to providing the additional needed source capacity to its Hala‘ula System, but because the nature and extent of the groundwater resources in the area are unknown, DWS cannot anticipate whether the resource is adequate for production or what size pump and storage tank would be appropriate until it constructs and tests the proposed exploratory well. DWS selected the proposed location because of its proximity to the communities that would be served, its location uphill from those communities, and the recommendation from consulting hydrology experts that a likely adequate source of potable water exists below the site. The site is also desirable as it helps spread the load of the Hāwī Aquifer. Should the exploratory well prove to be a viable source of potable water, it would also serve as a backup to the two wells supporting the Hāwī- Hala‘ula Water System.

1.3 OBJECTIVES OF THE PROPOSED ACTION

DWS’ objectives for the proposed project include the following:

- Determine the amount of water that can be obtained from a well located on a site from which a new source could readily serve the Hala‘ula Water System, and
- Test water from the prospective source to confirm that the quality is suitable for potable use.

1.4 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

The remainder of this EA is organized as follows:

- Chapter 2 describes the proposed action in detail and outlines the alternatives analyzed in this EA, as well as other alternatives that were considered during earlier planning phases.
- Chapter 3 describes the existing environment and analyzes the potential for impacts on natural, cultural, and socioeconomic resources. It also outlines strategies for minimizing and mitigating unavoidable adverse effects.
- Chapter 4 discusses the consistency of the proposed exploratory well with relevant plans, policies, and controls at local, regional, state, and federal levels.
- Chapter 5 provides justification for the determination of a Finding of No Significant Impact (FONSI) by considering each individual significance criterion with respect to the proposed project.
- Chapters 6 and 7, respectively, list the references cited and parties consulted during preparation of this EA.

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2.0 PROPOSED ACTION & ALTERNATIVES CONSIDERED

2.1 DESCRIPTION OF THE PROPOSED ACTION

2.1.1 WELL INSTALLATION AND TESTING

DWS proposes to construct a new exploratory well on private property in the North Kohala District of the Island of Hawai'i. DWS would drill, case and pump test the well to determine if its yield is adequate and the quality suitable for use as drinking water. A 120' by 200' well drilling pad and short well pad access road would be constructed to facilitate the drilling and testing. Should the exploratory well be determined to be a viable source of water, DWS would pursue the approvals necessary to convert the well into a production facility, including preparation of an environmental assessment. Figure 2.1 contains a site plan showing the proposed layout; Figure 2.2 presents photographs showing the existing conditions on the property. Details concerning the site preparation, well drilling, pump installation, and testing are provided below.

Site Preparation. DWS would acquire from the property owner the development rights to an area of approximately 370' X 394' (3.35 acres) for the project. Approximately 62 trees would have to be removed and about 43,000 square feet of orchard land cleared to make room for the well pad (see Figure 2.3). DWS estimates that site grading would require the excavation of 3,110 cubic yards of soil and the embankment of 2,725 cubic yards (see Figure 2.4). The well pad itself would then be compacted and covered with gravel to permit efficient operation of the drilling and testing equipment.

Well Drilling. Preliminary plans call for the well to be drilled from the project site elevation (planned finish grade at the well site about +773 feet MSL) to an elevation of less than -52 feet MSL. Groundwater is believed to occur at this location at an elevation of about +23 feet MSL. The borehole would have a diameter of 21 inches. As shown in Figure 2.5, solid steel casing (18" inner diameter) would be installed in the upper 750 feet of the hole. Below that, approximately 75 feet of perforated casing would extend into the aquifer. The upper 740 feet of the annulus space between the outside of the boring and the solid casing would be filled with cement grout. The exploratory well would be drilled and tested using diesel-powered equipment. Hence, it would not require electrical power during the exploratory phase of development.

Pump Testing. Pump testing would be at rates up to 700 gallons per minute (GPM) and may continue up to 5 consecutive days. The water produced from these tests would be discarded into an irrigation ditch or used for irrigation, as determined by the landowner.

Schedule. Table 2.1 lists the preliminary project schedule.

Table 2.1 Preliminary Project Schedule

<i>Task</i>	<i>Approximate Duration</i>	<i>Estimated Completion Date</i>
Final Design	1 month	June 1, 2009
Design Review	2 months	August 1, 2009
Bid Solicitation	2 months	October 1, 2009
Bid Evaluation, Contracting, Notice-to-Proceed	1 month	November 1, 2009
Well Construction and Testing	6 months	May 1, 2010

Source: Tom Nance Water Resource Engineering

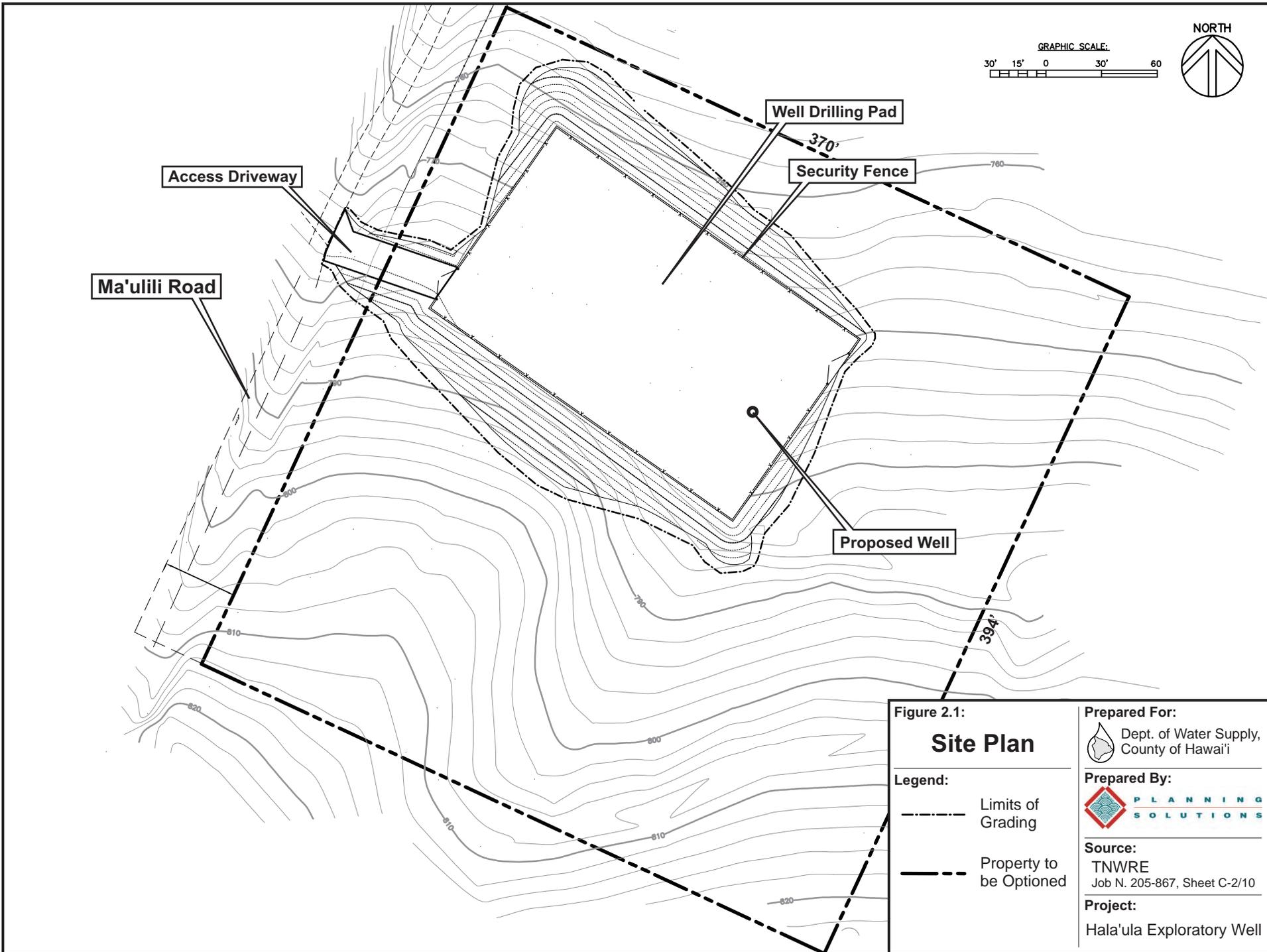


Figure 2.1:
Site Plan

- Legend:**
- Limits of Grading
 - Property to be Optioned

Prepared For:

 Dept. of Water Supply,
 County of Hawai'i

Prepared By:

PLANNING SOLUTIONS

Source:
 TNWRE
 Job N. 205-867, Sheet C-2/10

Project:
 Hala'ula Exploratory Well

Figure 2.1 Site Plan 2009-03-27.cdr



A. View of access road, looking mauka from the end of paved portion of Ma'ulili Road.



B. View from access road looking makai from near the proposed well site.

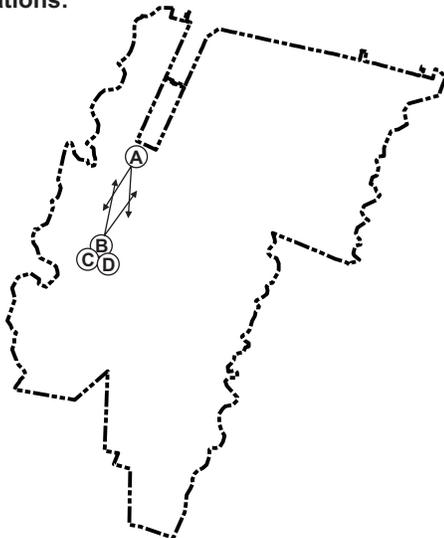


C. View across macadamia nut orchard in the vicinity of proposed well site.



D. View makai through macadamia nut orchard from the vicinity of proposed well site.

Photograph Locations:



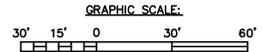
**Figure 2.2:
Photographs of
Exploratory Well Site**

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

Prepared By:
 **PLANNING
SOLUTIONS**

Source:
 Planning Solutions, Inc.
 Photos taken January 30, 2007

Project:
 Hala'ula Exploratory Well



Entry Way

Limits of Grading

PROPOSED LIMITS OF DEVELOPMENT

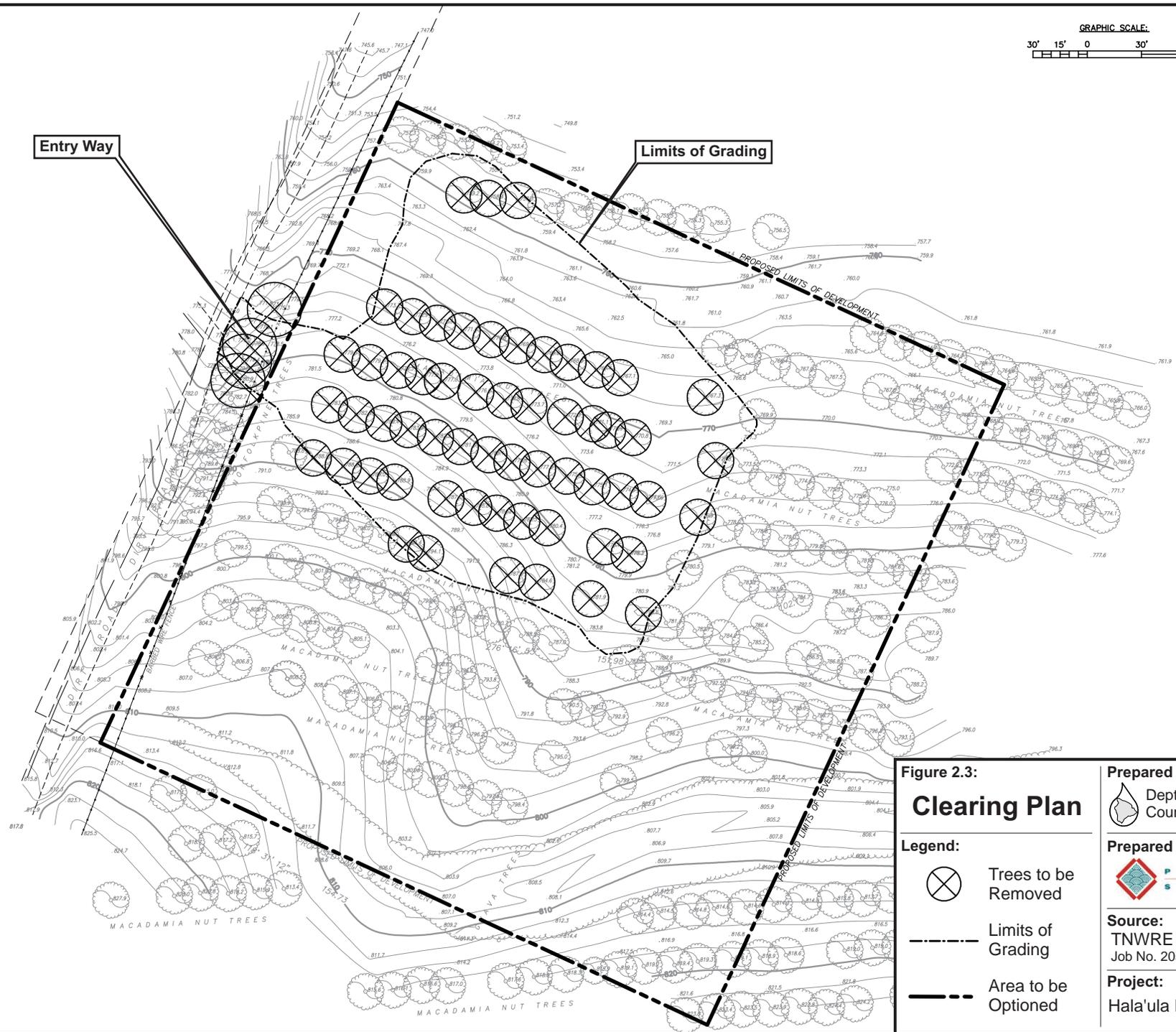
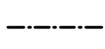


Figure 2.3:
Clearing Plan

- Legend:
-  Trees to be Removed
 -  Limits of Grading
 -  Area to be Optioned

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

Prepared By:


Source:
 TNWRE
 Job No. 205-867, Sheet C-4/10

Project:
 Hala'ula Exploratory Well

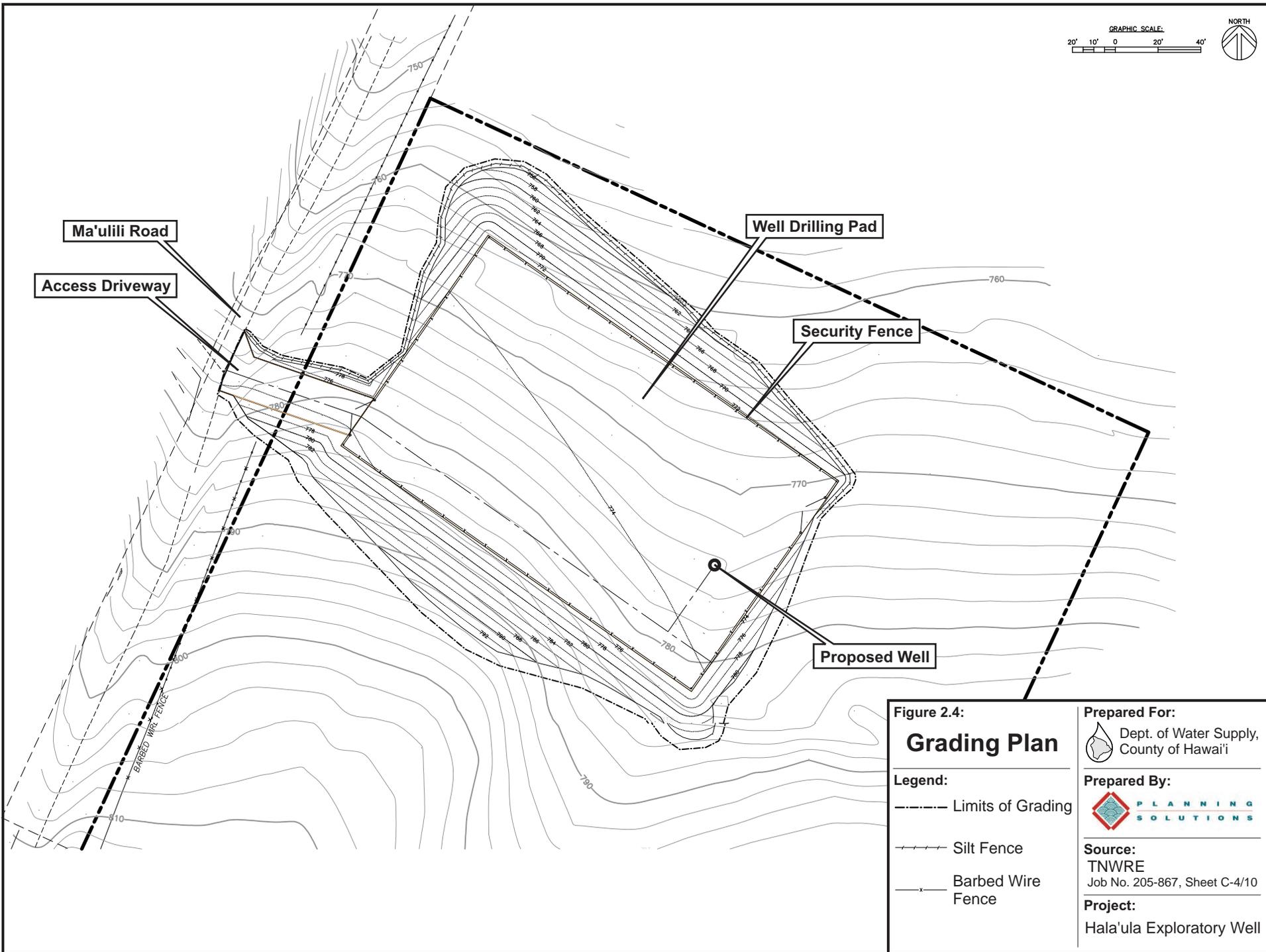
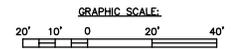


Figure 2.4:
Grading Plan

- Legend:**
- Limits of Grading
 - - - - - Silt Fence
 - x - - - Barbed Wire Fence

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

Prepared By:


Source:
 TNWRE
 Job No. 205-867, Sheet C-4/10

Project:
 Hala'ula Exploratory Well

Figure 2.4 Grading Plan 2009-03-30.cdr

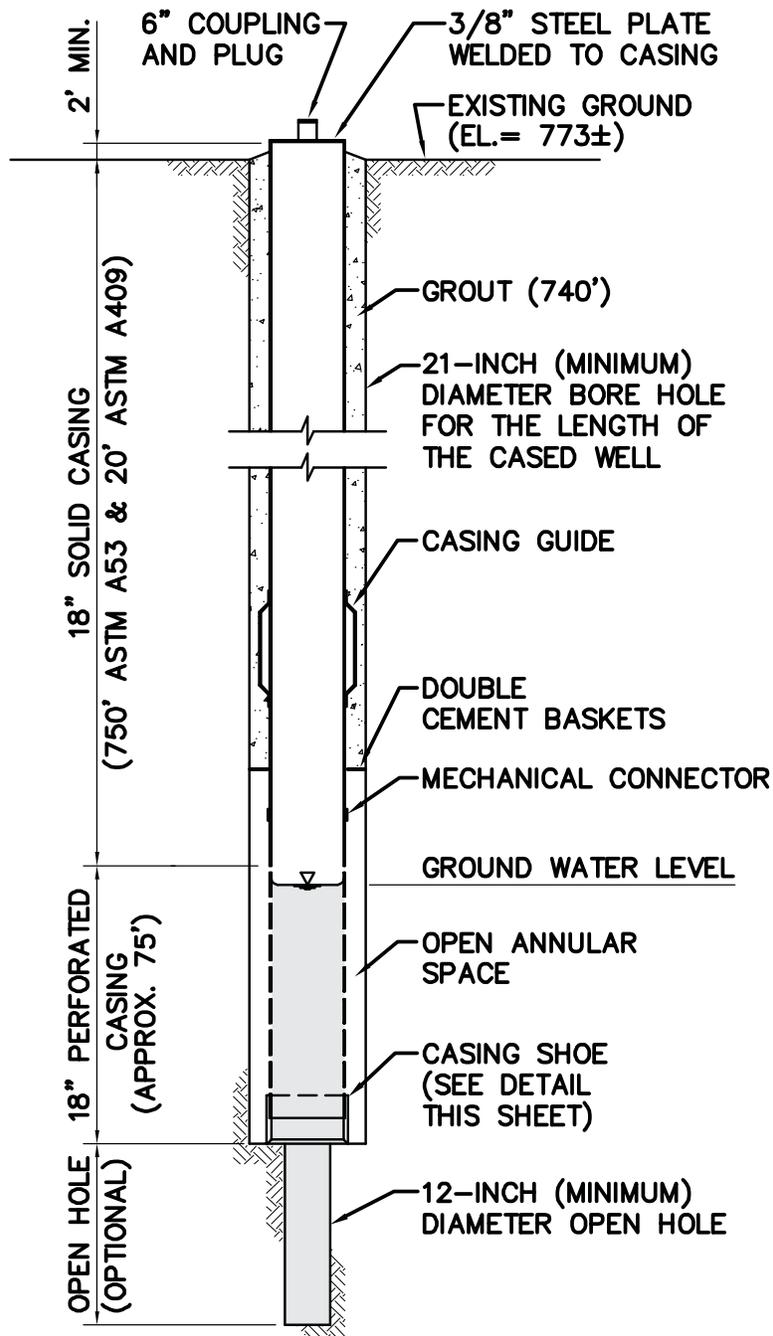


Figure 2.5:
Well Shaft Sections

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

Prepared By:
 PLANNING SOLUTIONS

Source:
TNWRE
Job No. 2005-867, Sheet C-9/10

Project:
Hala'ula Exploratory Well

2.1.2 PROJECT COST

Table 2.2 presents preliminary estimates of the construction costs. The project would be funded by the Department of Water Supply, County of Hawai'i. The proposed exploratory well's development and pump testing has been authorized and identified as DWS Job No. 2005-867, Hala'ula Well Development, Phase 1. It may also be 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 would require the project to meet all of the Hawai'i DWSRF program requirements (see Section 4.1.5 for further information).

Table 2.2 Preliminary Project Cost Estimate

<i>Item</i>	<i>Estimated Cost</i>
Exploratory Well Construction	\$750,000
Well Testing	\$138,000
Other Well Development Costs	\$234,000
Contingency (Approx. 10%)	\$114,000
Total Cost	\$1,236,000
Source: Tom Nance Water Resource Engineering	

2.2 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 must 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 water conservation, reduced scale action, alternate 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 and testing the Hala'ula Exploratory Well as currently designed. 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.

2.3 ALTERNATIVES ADDRESSED IN DETAIL

2.3.1 PROPOSED ACTION: DRILLING, CASING, & PUMP TESTING EXPLORATORY WELL

This alternative consists of the proposed action as described in Section 2.1 above. DWS believes constructing and testing an exploratory well at the proposed site would best enable it to assure that adequate source capacity remains available for the Hala'ula Water System, and thus it represents their preferred course of action.

2.3.2 NO ACTION ALTERNATIVE

The “No Action” Alternative consists of not constructing an exploratory well at the Hala‘ula site. This would go against what has already been recommended in the DWS’ Water Master Plan. Hence, “No Action” is not a viable alternative. It is evaluated in the EA solely to fulfill the requirements of HRS Chapter 343, HAR 11-200, and NEPA.

2.4 ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS

2.4.1 CONSTRUCT AND TEST WELLS IN ALTERNATE LOCATIONS

Because the groundwater flux through the area is believed to be high, it is likely that wells drilled in other locations would also be productive. However, the proposed site has several characteristics that make it unlikely that a different location would be superior from an economic, environmental, or operational viewpoint. These include:

- The proposed exploratory well site’s location uphill from the existing 0.10 MG Hala‘ula Tank avoids additional costs associated with building and operating booster pumps.
- The exploratory well site’s elevation will make it possible at the site to install a storage reservoir with an overflow elevation of 810 feet. This will match the overflow elevation of the existing storage tank in Hāwī, permitting efficient, gravity-driven flows from either tank to the other. The connection between the reservoirs will allow for redundancy and reliability, especially in the event of pump failure or when one reservoir becomes temporarily disabled.
- The proposed site’s location in an existing agricultural area means that construction and operation of the proposed facilities will not conflict with other uses of the area.
- The proposed well site’s proximity to the existing water transmission and distribution system avoids the need for substantial new water line construction.

A detailed analysis of potential environmental impacts from development of alternative water sources was beyond the scope of this assessment. However, in view of the absence of adverse effects documented above and in Chapter 3, it seems unlikely that other well locations might be better from an environmental standpoint.

2.4.2 CONSTRUCT EXPLORATORY WELL AND PRODUCTION WELL IN ONE PHASE

The proposed project consists only of the exploratory well and related testing. DWS considered combining the exploratory and production well into one project as it has done for many other jobs, but decided against it in this instance. Its decision stemmed from the fact that the capabilities of the resource that the well would tap are more poorly understood than those of the water resource in locations where a combined approach has been used.

2.4.3 DELAYED ACTION

Currently, the Hāwī-Hala‘ula Water System depends entirely upon the two Hāwī wells. Should either of these wells fail for any reason, DWS would not be able to provide sufficient water to its customers in this system. Delay in moving forward with this project would only continue this liability into the future. There are no existing activities or conditions at the site or in the project area that would make delaying the project desirable or that would reduce the impacts associated with it appreciably if delayed. DWS wants to act quickly to ensure that it maintains adequate storage and a safe drinking water supply for its customers in Hala‘ula. Therefore, it does not consider delayed action a viable alternative.

2.4.4 ENHANCED WATER CONSERVATION ALTERNATIVE

The primary purpose of the proposed exploratory well is not to accommodate a substantial increase in demand. Instead, it is to confirm that the resource is present and could be developed when needed. Conserving water will decrease the demand on the existing wells, but it would not provide information concerning the viability of alternate sources of supply. DWS has already requested extensive water conservation measures of its customers countywide, and it is very unlikely that further conservation measures could decrease the demands sufficiently to eliminate the need for the project.

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3.0 EXISTING ENVIRONMENT & PROBABLE IMPACTS

3.1 TOPOGRAPHY, GEOLOGY, AND SOILS

3.1.1 EXISTING CONDITIONS

The Hala'ula area is on the lower slope of the northeastern flank of the Kohala Mountains. Geologists divide the rocks of the Kohala Volcano into two series. The older, the Pololū Volcanic Series, consists very largely of flows of basalt. Ash layers are rarely found, but near the top of that series they become more numerous. The younger series, the Hāwī Volcanic Series, is separated from the rocks of the Pololū Series by an eroded surface covered with red soil and in places is underlain by as much as 15 meters of decomposed, weathered rock. (Macdonald, Abbott, and Peterson 1983).

The U.S. Soil Conservation Service classifies the soil as 'Āinakea silty clay loam, 12 to 20 percent slopes. The surface layer is a dark brown silty clay loam about 10 inches thick. The subsoil is dark-brown silty clay loam generally about 20 inches thick. The substratum is soft, weathered basic igneous rock. The surface layer is extremely acidic, and the subsoil is medium to strongly acidic. Runoff is medium, and the erosion hazard is moderate (USDA-NRCS 2008). 'Āinakea silty clay loam is well suited to agricultural use, and the State has classified the general area as prime agricultural soil.

As previously described, the Hala'ula site is located within a macadamia nut orchard. The project site slopes consistently downwards from north to south from an elevation of 810 feet at its upper end to 750 feet at the lowest point of the project site, averaging about 15% percent.

3.1.2 PROBABLE IMPACTS

Grading and other land disturbance for the proposed project would require excavation of approximately 3,110 cubic yards of material, but most of this soil (2,725 yd³) will be used as fill on the lower side of the pad; the remainder would be used on the property by the landowner or would be disposed of properly. As noted above, 'Āinakea silty clay loam is classified as prime agricultural soil even though the land is moderately steep, and the construction of the well pad would preclude its continued agricultural use unless and until the pad is removed.¹

The proposed project would not substantially change exposure to geological hazards or bar the use of significant geological resources. No commercially useful minerals are present.

3.2 HYDROLOGY

3.2.1 EXISTING CONDITIONS

3.2.1.1 Surface Water

The project site is located between two streams designated as perennial by the State of Hawai'i (State of Hawai'i, 2002), the Wainai Stream, approximately 1,250 feet to the south-southwest at its closest point and the Halelua Gulch, approximately 3,100 feet to the east. The Wainai Stream watershed, in which the project site is located, encompasses approximately 4.61 square miles and has five existing diversions on it.² Halelua Stream has a drainage area of 1.7 square miles; there are no registered

¹ The contractor would remove approximately 60 macadamia nut trees to allow construction of the exploratory well.

² Taken from *Water Resource Protection Plan*, Section 3, Inventory and Assessment of Resources, June 2008, The Water Resource Protection Plan (WRPP) is one of five major plans that comprise the Hawaii Water Plan (HWP), established pursuant to Chapter 174C, Hawaii Revised Statutes (HRS §174-C) (State Water Code). The Water Resource Protection Plan, together with the Water Quality Plan (WQP), State Water Projects Plan (SWPP), Agricultural Water Use and Development Plan (AWUDP), and the County Water Use and Development Plans (WUDPs), provides the overall guidance and direction for managing Hawaii's water resources.

EXISTING ENVIRONMENT & PROBABLE IMPACTS

diversions. Neither of these streams is designated by the National Park Service to be a “Scenic River”, (U.S. National Park Service, 2009), and the State Department of Health Clean Water Branch has classified the waters as Inland Class 2 (CWB, 1987). An emptied and overgrown irrigation pond, once fed by the Kohala Ditch, is located approximately 1,400 feet uphill to the south, and an apparently inactive branch of the Kohala Ditch, trending down the hill to the north, is located 500 to 600 feet to the east of the project site.

3.2.1.2 Groundwater

The proposed exploratory well would tap water in the Hāwī Aquifer System as designated by the State Commission on Water Resource Management (CWRM 1995). Along the shoreline, the System extends from Pu‘uepa on the north to Akoakoa Point on the south, a distance of about 12 miles (see Figure 3.2). The sustainable yield of the Hāwī Aquifer System is 27 MGD, while the existing water use (July 2005 estimate) is only 0.582 MGD (Wilson Okamoto, 2008).

3.2.2 PROBABLE IMPACTS**3.2.2.1 Surface Water**

The proposed project does not involve any activities that would alter existing stream channels, wetlands, or other surface water bodies, but construction work would disturb the existing ground cover and create a temporary potential for increased soil erosion. DWS will require the contractor to use best management practices as necessary during construction to prevent contaminants such as sediment, petroleum products, and debris from leaving the site via storm water runoff. It will also require it to attempt to schedule work for periods of minimal rainfall and to place permanent erosion control measures on lands denuded of vegetation as quickly as possible. Since the disturbed area is expected to be under an acre, NPDES Construction Storm Water General Permit coverage is not required.³

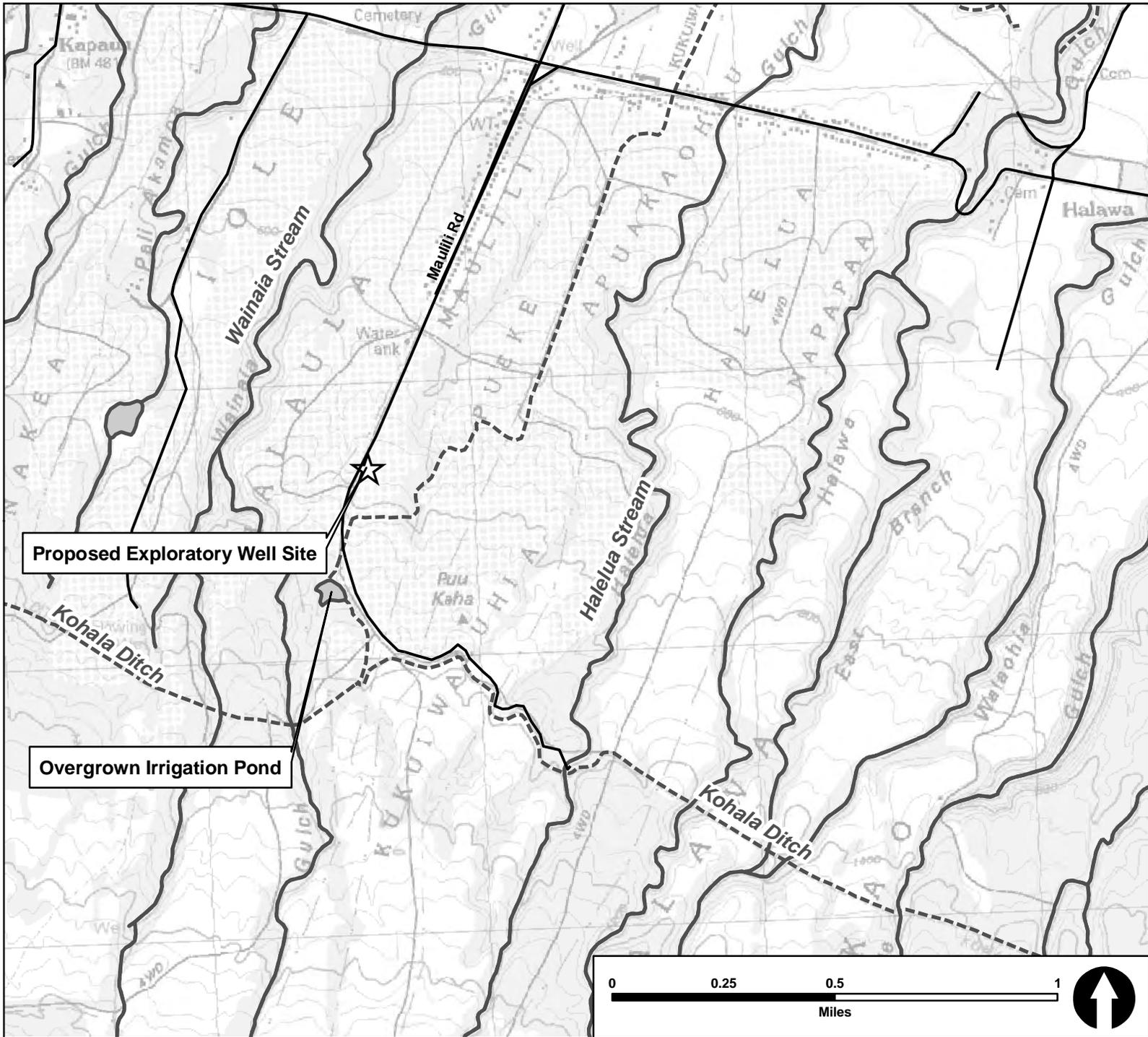
During the testing phase, a temporary diesel engine-powered pump would be used to develop the exploratory well (i.e., to remove sediment and well cuttings that are a by-product of the drilling) and to determine its hydraulic capacity. Well water produced during these tests will be discharged into an adjacent unnamed depression. The project site is in the watershed of the Wainai Stream, which is about a quarter of a mile away from the site (see Figure 3.1). The BMPs that the contractor would implement during construction (see Figure 2.4) would minimize any sediment entrainment or contamination of these discharges and storm water runoff.

3.2.2.2 Ground Water

As noted above, only a small fraction of the sustainable yield for the Hāwī Aquifer is currently being used. The pump testing would draw water from the screened portion of the casing (below +23 feet MSL); this is too deep for there to be a potential effect on streamflow.⁴

³ 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)

⁴ The same is true for pumping that would occur if the tests proved successful and the County converted this into a production well.



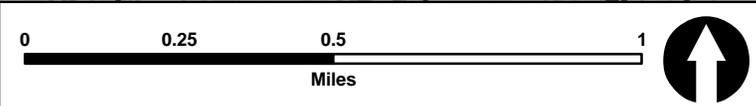
- Legend:**
-  Perennial Streams
 -  Irrigation Ditches
 -  Irrigation Ponds

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

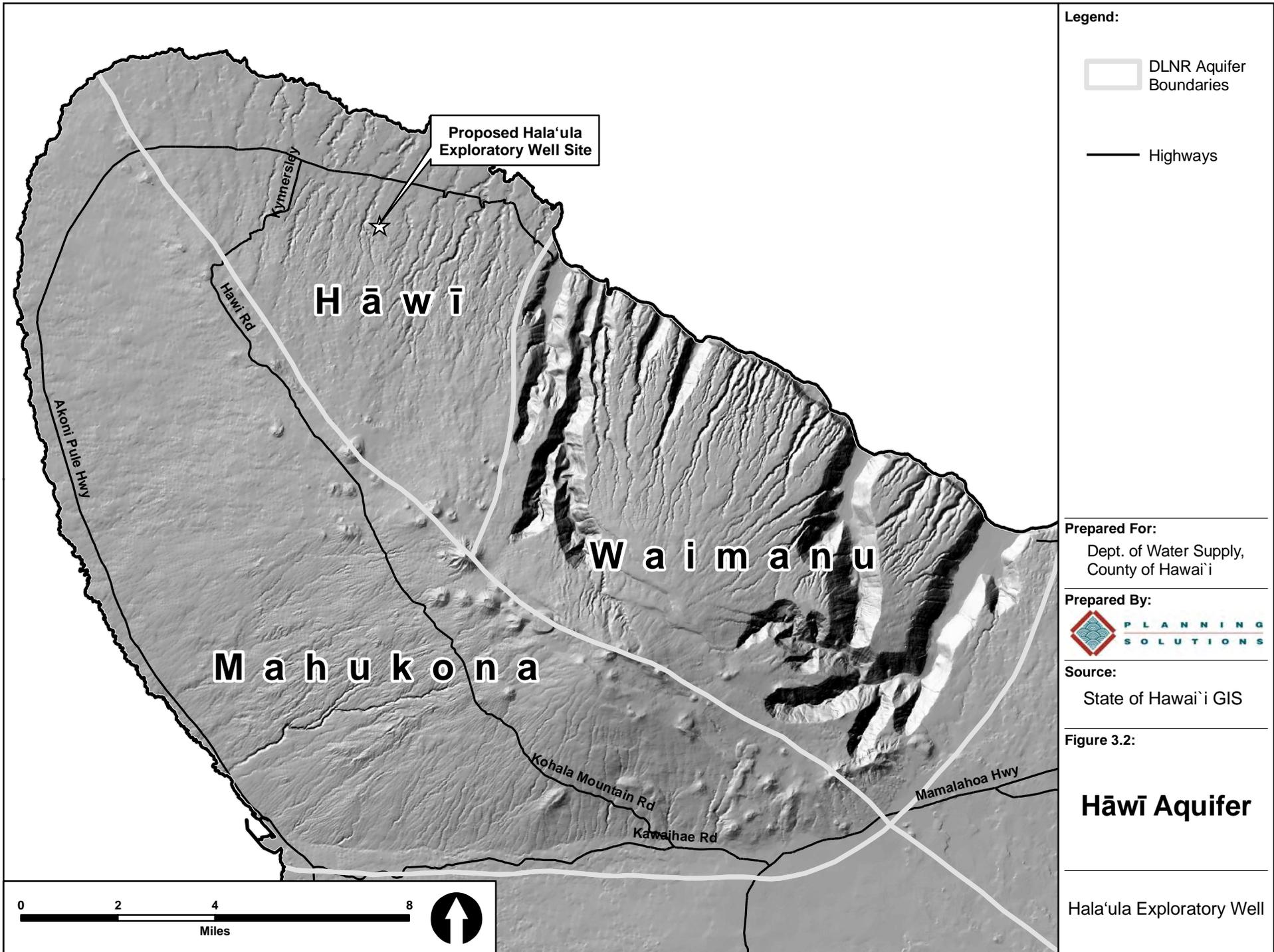
Prepared By:
 PLANNING SOLUTIONS

Sources:
 -State of Hawai'i GIS
 -USGS 7.5' Quad Map

Figure 3.1:
**Surface Waters
 Near Project Site**



Hala'ula Exploratory Well



3.3 GROUNDWATER CONTAMINATION

For reasons outlined below, there is a low probability that the groundwater that the proposed well would tap is, or would become, contaminated:

- No chemical contaminants have been detected in active wells of the Hāwī Aquifer System.
- According to the County of Hawai'i Department of Environmental Management, Solid Waste Division, the nearest landfill to the project site is in Pu'uana'hulu, about 16 miles away. The nearest transfer station is in Ka'auhuhu, west of the project site, about 2.5 miles away. Both are too distant and the groundwater flow direction such that there is no potential for contamination from either of these sources to affect the well.
- The well site is entirely surrounded by agricultural land, with the nearest dwelling located more than 2,000 feet down-gradient with respect to groundwater flow. Because of this, there is no potential for contamination of the well from leaking sanitary systems.
- As described above in Section 2.1.1, the upper 740 feet of the well would be cased with grout, isolating it from surface water inputs. This, together with the absence of up-gradient sources of pollution and the distance to the nearest residence, make it very unlikely that the well could be contaminated by existing sources.
- Based on the State Department of Health Office of Hazard Evaluation and Emergency Response (DOH 2008), no identified site of concern to the State Department of Health is located within the proposed well site area.⁵
- The proposed well site does not contain any hazardous materials at the present time.
- Any hazardous materials used during the well construction and testing (primarily petroleum products used for construction equipment and pumping) would be handled appropriately to eliminate the potential for contaminating the site.

3.4 CLIMATE AND AIR QUALITY

3.4.1 EXISTING CONDITIONS

The rain gauging station at Hāwī, located at an elevation of 580 feet above sea level over 4 miles west of the project site, provides the best indication of conditions at the project site. The median annual precipitation between 1971 and 2000 was 54.39 inches (NOAA 2002). March was the wettest month of the year during this period, with an average rainfall of 6.55 inches; with an average of 2.48 inches during the period, September was the driest month. Rainfall varies significantly according to time of day as well as time of year, with the mid-day being generally much drier than the nighttime.

Temperatures at the project site are moderate. Between 1971 and 2000, the median annual temperature, measured at O'ōkala (the most comparable location from which temperature data are available) was 72.9° F. February had the lowest monthly average low temperature at O'ōkala (64°), while September had the highest monthly average high temperature (81.6°).

No site-specific wind data are available. However, information from other investigations strongly suggests that the wind pattern at the site reflects the influence that the island's large land mass has on the prevailing trade winds. During the daytime, the winds normally blow out of the east with speeds averaging between 10 to 12 miles per hour. During the nighttime, the down-slope movement of cool air opposes the trade winds and the wind direction is from the southwest.

⁵ The nearest listed site is an abandoned tannery in Hala'ula, a little more than one mile from the site. The EPA has determined that the site's cleanup is complete, that it does not present any health risks to the surrounding environment, and that no further action is required. It has been archived (Reference No. HID980894216).

EXISTING ENVIRONMENT & PROBABLE IMPACTS

There are no substantial sources of anthropogenic air emissions and very little chance for the development of air inversions on the mountain slope. Emissions from the currently active volcanic eruptions are usually carried to the southwest around the island and are not likely to affect the project site. Consequently, air quality is generally excellent.

3.4.2 PROBABLE IMPACTS

As mentioned, grading for the proposed well site would disturb less than one acre of land. No more than a few pieces of construction equipment would operate on the site at any one time. Moreover, work would be limited to period of a several months. The site’s relatively high rainfall, generally moderate wind speeds, and distance from sensitive receptors means that fugitive dust is unlikely to be a problem during construction. The contractor would ensure that the work conforms with the State Department of Health’s guidelines for controlling fugitive dust as outlined in Hawai‘i Administrative Rules §11-60.1. Consequently, pollutant emissions from construction do not have the potential to affect the local or regional air quality substantially.

3.5 TERRESTRIAL FLORA AND FAUNA**3.5.1 EXISTING CONDITIONS**

The project site is located on an active macadamia nut (*Macadamia integrifolia*) orchard (see photos in Figure 2.2). The site has been highly modified by agricultural activities and almost no native vegetation remains on the property. On August 13, 2009, Rana Biological Consulting, Inc. conducted a biological survey of the site (see Appendix C). The survey report concludes that the project is not expected to result in significant impacts to botanical, avian or mammalian threatened or endangered species or proposed for listing under either the Federal, or State of Hawai‘i endangered species programs. It also finds that development of the site is not expected to have a significant deleterious impact on native faunal resources found within the North Kohala District.

One of the species recorded, Hawaiian Hawk (*Buteo solitarius*) or ‘io, is listed as an endangered species under both federal and state of Hawai‘i endangered species statutes. It is not expected that the development of the proposed well will result in deleterious impacts to Hawaiian Hawks. This opinion reflects the fact that the trees that must be cleared are predominantly relatively short macadamia nut trees, a substrate that is not usually associated with Hawaiian Hawk nesting activity. Individual foraging hawks may be temporarily disturbed by construction activity. Such potential disturbance to foraging Hawaiian Hawks is not likely to be significant, as there are miles of suitable foraging habitat surrounding the very small project site.

The survey report notes that the trees on the project site are potentially suitable roosting habitat for the Hawaiian hoary bat (*Lasiurus cinereus semotus*), which is listed as an endangered species under both federal and state of Hawai‘i endangered species statutes. It concluded that while no bats were observed during the course of the survey, the possibility exists that bats may occasionally be present in the general project area. If bats roost in the dense vegetation on the project site, the removal of the trees could affect individual bats by eliminating potential roosting sites. At the same time, the report noted that as bats use multiple roosts within their home territories, the significance of such displacement is likely to be minimal because in most instances the bats will simply relocate to one of the other trees in the neighborhood.

The one situation when some potential for adverse impacts exists is if trees used as roosts are disturbed during the pupping season. There are two reasons for this. First, Hawaiian hoary bats are thought to be less able to vacate a roost tree rapidly during the pupping season when adult females are caring for their pups; in such instances it is conceivable that the bat would not leave the tree quickly enough to avoid harm if tree removal began while the parent was present. Second, if tree removal were to begin during the brief periods when parents may leave their pups alone, it is possible that the young could be inadvertently harmed. All chance of harming bats can be avoided by clearing the

vegetation after August 15 and before April 15 as this time frame falls outside of the period when very young bats are likely to occur.

3.5.2 PROBABLE IMPACTS

Construction of the proposed facilities will affect less than an acre of land. The land is a cultivated orchard that is managed for commercial production and currently supports introduced and invasive species. DWS will take appropriate preventative measures as recommended in the report to avoid impacting the Hawaiian hoary bat by prohibiting tree clearing between April 15 and August 15. As a result, the proposed action is not expected to have any substantial direct impacts on flora or fauna.

3.6 NOISE

3.6.1 EXISTING CONDITIONS

Trucks, motorcycles, and cars traveling between Akoni Pule Highway and the residences on the lower part of Ma'ulili Road are the most significant existing noise sources in the area. However, because the site is more than 2,000 feet from the highway, traffic noise is normally not a dominant noise source there. Wind, birdcalls, and the occasional farm vehicle passing the site are the most apparent noise sources under most conditions. Based on measurements made in other, similar areas, ambient noise levels during regular trade wind weather is probably near 55 dBA. Noise levels during periods of calm winds and no traffic are probably less than 45 dBA.

3.6.2 PROBABLE IMPACTS

Construction of the well and reservoir on the site would involve the operation of diesel-powered drilling equipment for a period of several months. Noise source levels from un-muffled equipment of this sort could be as high as 80 to 85 dBA measured at a distance of 50 feet. This could result in sound levels of about 53 - 58 dBA at the property line of the nearest residence (> 2,000 feet from the project site); this is enough to be audible above background noise levels during periods of low wind speed, but would not be as noticeable as existing vehicle noise during such periods.

With the exception of the well pump-testing, construction activities would be limited to daytime hours. Well testing utilizes diesel-powered pumps and requires continuous (i.e., 24-hour-per-day) pumping for a period of at least five days. Consequently, noise from this activity necessarily extends through the night.

Hawaii Administrative Rules §11-46 (Community Noise Control) establishes noise limits for construction, agricultural, and industrial activities. 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 noise limit for "Class A Districts" [which §11-46-3(3) defines as "...all areas equivalent to lands zoned residential, conservation, preservation, public space, open space, or similar type."] is 55 dBA during the day and 45 dBA at night (see Table 3.1). The limits are applicable at the property line. Based on the 2,000-foot distance to the dwelling closest to the well site, any of these activities that are conducted at night could exceed the 45 dBA limit. It is possible that careful selection of equipment used for the nighttime tests will allow the contractor to keep noise levels below the regulatory limit. Otherwise, a construction noise permit may be needed from the State Department of Health as provided for in HAR §11-46.

EXISTING ENVIRONMENT & PROBABLE IMPACTS

3.7 AQUATIC RESOURCES**3.7.1 EXISTING CONDITIONS****3.7.1.1 Wainaia Stream**

As previously noted, the site drains into Wainaia Stream. This perennial stream has a total stream length 10.1 miles and a watershed area of 4.61 square miles. The watershed extends from an elevation of just over +2,800 feet msl at its upper end to the ocean. The watershed's DAR cluster code is 5, meaning that it is medium size, steep in the upper watershed, and has little embayment. Nearly 90 percent is in the State Agricultural Land Use District; the remainder is split evenly between the Urban and Agricultural Districts. A detailed breakdown is presented in Table 3.2.

Past surveys of Wainaia Stream have identified a number of introduced fish species in the headwaters of the stream. These include *Carassius auratus*, *Lepomis* sp., *Micropterus salmoides*, and unidentified *poeciliidae*. Of the five separate assessments that have been conducted of the stream biota, none have deemed the stream worthy of protection.⁶ The Native Insect Diversity does not exceed 19 species, no native species are abundant, there are more than five introduced species present, and there is no Endangered Newcomb's Snail Habitat.

⁶ <http://www.hawaiiwatershedatlas.com/watersheds/hawaii/81009.pdf>

Table 3.1 Maximum Permissible Sounds Levels in dBA (HAR §11-46)

<i>Zoning Districts</i>	<i>Daytime (7 a.m. to 10 p.m.)</i>	<i>Nighttime (10 p.m. to 7a.m.)</i>
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: Hawaii Administrative Rules, Title 11, Chapter 46, Community Noise Control

EXISTING ENVIRONMENT & PROBABLE IMPACTS

Table 3.2 Land Use Within the Wainaiia & Halelua Stream Watersheds

<i>Land Use Category</i>	<i>Wainaiia Stream</i>		<i>Halelua Stream</i>	
	<i>Percent</i>	<i>Square miles</i>	<i>Percent</i>	<i>Square miles</i>
High Intensity Developed	0.7	0.03	0.9	0.01
Low Intensity Developed	1.2	0.06	1.1	0.02
Cultivated	10.5	0.48	10.0	0.17
Grassland	48.0	2.21	51.7	0.88
Scrub/Shrub	0.2	0.01	0.2	0.00
Evergreen Forest	39.2	1.80	36.1	0.62
Palustrine Forested	0.0	0.00	0.0	0.00
Palustrine Scrub/Shrub	0.0	0.00	0.0	0.00
Palustrine Emergent	0.0	0.00	0.0	0.00
Estuarine Forested	0.0	0.00	0.0	0.00
Bare Land	0.1	0.01	0.0	0.00
Unconsolidated Shoreline	0.1	0.01	0.0	0.00
Water	0.0	0.00	0.0	0.00
Unclassified	0.0	0.00	0.0	0.00
Total	100	4.61	100	1.7

Source: *Atlas of Hawaiian Watersheds & Their Aquatic Resources* (April 7, 2008), #81009 & 81010.

Table 3.3 Wainaiia Stream Characteristics

<i>Item</i>	<i>Reach Type Category</i>				
	<i>Estuary</i>	<i>Lower</i>	<i>Middle</i>	<i>Upper</i>	<i>Headwaters</i>
Reach Type					
Percent of Total	0.0	3.1	26.1	66.6	4.2
DAR Rapid BioAssessment Surveys	0	0	1	0	0
Reservoir Surveys	0	0	0	0	1

Source: *Atlas of Hawaiian Watersheds & Their Aquatic Resources* (April 7, 2008), #81009.

3.7.1.2 Halelua Stream

Halelua Stream is perennial. Its total stream length is 4.6 miles and the watershed has an area of 1.7 square miles. The watershed extends from an elevation of just over 2,000 msl at its upper end to the ocean. The State of Hawai‘i Division of Aquatic Resources has not yet established a cluster code for it. According to the *Atlas of Hawaiian Watersheds & Their Aquatic Resources* (April 7, 2008), 94 percent of the watershed area is in agricultural use, 4.4 percent is in Urban use, and 1.5 percent is in Conservation; a further breakdown is presented in Table 3.2.

Table 3.4 Halelua Stream Characteristics

<i>Item</i>	<i>Reach Type Category</i>				
	<i>Estuary</i>	<i>Lower</i>	<i>Middle</i>	<i>Upper</i>	<i>Headwaters</i>
Reach Type					
Percent of Total	0.2	3.5	57.9	38.5	0.0
DAR Rapid BioAssessment Surveys	0	0	1	0	0
Reservoir Surveys	0	0	0	1	0
Source: <i>Atlas of Hawaiian Watersheds & Their Aquatic Resources</i> (April 7, 2008), 81010					

Past surveys of Halelua Stream have identified a number of introduced fish species. These include *Carassius auratus*, an unidentified *cyprinidae*, and an unidentified *poeciliidae*. Only the *Carassius auratus* is present in the middle, upper, and headwater reaches of the stream.

Of the five separate assessments that have been conducted of the stream biota, none have deemed the stream worthy of protection. The Native Insect Diversity does not exceed 19 species, no native species are abundant, there are no Priority 1 native macrofauna, there are more than 5 introduced species present, and there is no Endangered Newcomb's Snail Habitat.

3.7.2 PROBABLE IMPACTS

The data that are available from the *Atlas of Hawaiian Watersheds & Their Aquatic Resources* indicate that neither stream contains high-value aquatic habitat, particularly important native species, or other important aquatic fauna. As discussed above in Section 3.2.2.1, the withdrawal of water from the well operation would not substantially alter the flow in either stream as it is being withdrawn at less than 23 feet above sea level. Neither would it have the potential to introduce pollutants into the stream. Consequently, the proposed action would not have substantial direct or indirect effects on the aquatic communities in streams or nearshore waters. In view of the foregoing, the proposed project does not have the potential to have significant adverse impacts on aquatic biota.

3.8 ARCHAEOLOGICAL, HISTORIC AND CULTURAL FEATURES

3.8.1 EXISTING CONDITIONS

Historically, Kohala became a major force in the sugar industry with the establishment of the Kohala Sugar Company in 1860 (KTF, 1975). By 1904, six sugar mills were operating in North Kohala (Tomonari-Tuggle 1988:I-40-42) on many thousands of acres including the current project area. Following the decline of the sugar industry, other agricultural endeavors were pursued. One of the more successful endeavors was the cultivation of macadamia nut trees, which presently dominate the current project area.

The State Historic Preservation Division (SHPD) was contacted during preparation of this environmental assessment. After reviewing plans for the proposed project and viewing photographs of the area in which it would be constructed, SHPD determined on March 25, 2009 that no historic properties would be affected by the project because intensive cultivation has previously altered the land. A copy of the SHPD determination letter is included in Appendix A. In April 2009, a copy of the Draft Environmental Assessment (DEA) was sent to SHPD for review. On May 22, 2009, SHPD issued its National Historic Preservation Section 106 Review findings, concurring with the findings of the DEA that no historic properties will be affected by the proposed project (see Section 7.3, Comment No. 8).

EXISTING ENVIRONMENT & PROBABLE IMPACTS

DWS also commissioned Rechtman Consulting, LLC to assess the potential archaeological and cultural impacts of the proposed project (see Appendix B). A field inspection of the project area was carried out on August 13, 2009. The report confirmed that there were no historic properties identified within the current study area, nor were there any potential traditional resources or evidence of on-going cultural practices observed. Likewise, there were no traditional cultural resources, beliefs, or practices identified during consultation with individuals familiar with the project area. As a result, there were no archaeological resources identified within the project area and it was concluded that no historic properties would be affected by the development of the proposed exploratory well.

3.8.2 PROBABLE IMPACTS

Based on the findings of the above-referenced archaeological and cultural impact assessment, and concurrence by SHPD, it has been determined that the project should have no cultural impacts or effects on historic properties. There is always the possibility that subsurface remains may be encountered during construction. Consequently, the construction contract for the proposed work will require that in the event that historic resources, including skeletal remains, cultural materials, lava tubes, or lava blisters/bubbles are identified during construction work, the contractor will immediately cease work in the vicinity of the find, protect the area from additional disturbance, and contact SHPD. In the absence of any known traditional native Hawaiian cultural practices, beliefs, and/or properties of any kind, no impacts to these resources are anticipated.

3.9 NATURAL HAZARD DESIGNATIONS**3.9.1 EXISTING CONDITIONS**

The proposed well site is in the region of the Big Island that the U.S. Geological Survey (1997b) has designated as Volcanic Lava Flow Hazard level 8 (as measured on a scale of 1 to 9, with 9 being the least hazardous). This rating means that none of the area has been covered by lava within the last 750 years and that only a few percent of the area has been covered by lava within the last 10,000 years.

For the purposes of structural design, the entire Island of Hawai‘i is classified as Zone 4 by the Uniform Building Code adopted by the County of Hawai‘i in 1999 (USGS 1994, 1997a). Defining hazard zones for the effects of earthquakes is more difficult than for eruptions and has not been attempted in any great detail for the Island of Hawai‘i. For the most part, earthquakes on Hawai‘i are concentrated beneath Kīlauea and Mauna Loa, and particularly beneath the south flanks of both volcanoes and in the Ka‘ōiki region between them. The likelihood of a damaging earthquake on Kīlauea or Mauna Loa probably increases with long-lived activity of the rift zones, but its precise time and magnitude are impossible to predict. Large earthquakes unrelated to volcanic activity also occur at irregular intervals on the Island. At 7:07 AM on October 15, 2006, a relatively large earthquake struck the island. With an epicenter near Kīholo Bay on the Northwestern part of the island, the quake registered a magnitude of 6.7 on the Richter scale and caused more than \$100 million dollars in damage. Numerous people suffered minor injuries, and over 1,100 buildings were damaged, in some cases, extensively. Power outages occurred throughout the Hawaiian Islands. The earthquake was felt as intensity VII-VIII in northern and western Hawai‘i. A tsunami with a wave height of 10 cm was recorded at Kawaihae Harbor.

The proposed well site is not located within a designated Flood Hazard Safety Area nor within a Tsunami Evacuation area (State of Hawai‘i 2002).

3.9.2 PROBABLE IMPACTS

As discussed above, the proposed exploratory well would not be subject to significant hazards from volcanic flows, flooding, or tsunami, and the project does not include construction of any significant structures. The risk of earthquake damage is low, but not absent. However, nothing about the project

would lead a failure of the exploratory well installation, caused by an earthquake or volcanic flow, to affect surrounding uses or to endanger people.

3.10 SCENIC AND AESTHETIC RESOURCES

3.10.1 EXISTING CONDITIONS

Ma'ulili Road, fronting the proposed exploratory well, is used only by the landowner. Tourists use Akoni Pule Highway, which is about a mile northeast of the site to access Pololū Trail and Pololū Valley Lookout, popular tourist destinations. The proposed site is not visible from the main highway. The exploratory well would not be visible to the nearest residence, which is about half a mile north of the proposed site. On the road between Hala'ula and Pololū Valley, the existing scenic views include occasional roadside views of historic properties with occasional distant views of the ocean.

3.10.2 PROBABLE IMPACTS

The construction and testing of the proposed exploratory well would not substantially change the visual character of the area or interfere with significant views across the site. As shown in the photos in Figure 2.2, the site would not be seen from the main road or from the residences situated along the lower portion of Ma'ulili Road.

3.11 TRAFFIC

3.11.1 EXISTING CONDITIONS

Access to the proposed well site would be via Ma'ulili Road. The road intersects Akoni Pule Highway northeast of the site. Virtually all of the traffic along the road fronting the project site consists of vehicles directly affiliated with the landowner.

3.11.2 PROBABLE IMPACTS

Construction vehicles will increase the traffic along Ma'ulili Road past the residential development, and the construction activities may close the road for short periods during the construction work. The impacts will be noticeable to the residents along this road, but will be short in duration and will occur only during the work day. No substantial impacts will occur to traffic along the Akoni Pule Highway.

3.12 LAND USE, SOCIOECONOMIC AND CULTURAL ENVIRONMENT

3.12.1.1 Existing Conditions

The parcel on which the proposed exploratory well would be constructed is owned by Kohala Preserve Conservation Trust LLC (P.O. Box 335, Hāwī, HI 96719). The site has been used as a macadamia nut orchard for many years. The site is in the State Agriculture District, and the County zoning is also Agriculture (Ag-20a). The proposed exploratory well and the potential production well facility are allowable uses under both of these land use designations.

There are no existing commercial, industrial, or economic activities, other than agricultural and residential, in the immediate vicinity. The proposed site is approximately a mile *mauka* of the community of Hala'ula. The nearest home is located nearly half a mile below the proposed well site.

The project site is located within Census Tract 218, which includes the communities of Hāwī and Hala'ula. The year 2000 resident population of this census tract was 6,038 people, or about 4% of the island's population. Of these, 938 resided in the Hāwī Census Defined Place (CDP) and 495 resided in the Hala'ula CDP. Median household income was higher than the county average, at \$47,733 compared to \$39,805. Unemployment within the civilian labor force was 2.6%, lower than the countywide average or 4.9%.

EXISTING ENVIRONMENT & PROBABLE IMPACTS

3.12.2 PROBABLE IMPACTS

The proposed exploratory well is compatible with the existing use of the area. Aside from the temporary minor construction employment and expenditures that it would create, the project would not stimulate or otherwise promote population growth or economic activity.

4.0 RELATIONSHIPS TO RELEVANT PLANS, POLICIES & CONTROLS

4.1 STATE AND COUNTY REGULATIONS

4.1.1 COUNTY OF HAWAI'I GENERAL PLAN

4.1.1.1 *Relevant Provisions*

The Department of Water Supply operates and maintains over twenty separate water systems in the County of Hawai'i, including the Hāwī-Hala'ula Water System. The 2005 *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 2005 *General Plan* identifies the following County policies with regards to public water systems that are relevant to the proposed project:

- (a) *Water system improvements shall correlate with the County's desired land use development pattern.*
- (b) *All water systems shall be designed and built to Department of Water Supply standards.*
- (c) *Improve and replace inadequate systems.*
- (d) *Water sources shall be adequately protected to prevent depletion and contamination from natural and man-made occurrences or events.*
- (e) *Water system improvements should be first installed 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.*
- (f) *A coordinated effort by County, State and private interests shall be developed to identify sources of additional water supply and be implemented to ensure the development of sufficient quantities of water for existing and future needs of high growth areas and agricultural production.*
- (g) *The fire prevention systems shall be coordinated with water distribution systems in order to ensure water supplies for fire protection purposes.*
- (j) *Cooperate with appropriate State and Federal agencies and the private sector to develop, improve and expand agricultural water systems in appropriate areas on the island.*
- (k) *Promote the use of ground water sources to meet State Department of Health water quality standards.*
- (m) *Seek State and Federal funds to assist in financing projects to bring the County into compliance with the Safe Drinking Water Act.*
- (n) *Develop and adopt a water master plan that would consider water yield, present and future demand, alternative sources of water, guidelines and policies for the issuing of water commitments.*
- (o) *Expand programs to provide for agricultural irrigation water.*

The 2005 *Hawai'i County General Plan* identifies a number of actions to implement these policies in the North Kohala District. Specifically, it directs DWS to:

- (a) *Pursue a ground water source for the Makapala-Keokea water system.*

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- (b) *Explore further sources for future needs.*
- (c) *Improve and replace inadequate distribution mains and storage facilities.*
- (d) *Encourage efforts to improve the Kohala ditch system and its use for agricultural purposes.*

4.1.1.2 Conformance with the Plan

The proposed exploratory well is being constructed by DWS in response to the *General Plan* policy for Hala‘ula that encourages groundwater source investigation for this area of the island. The proposed project meets all applicable design standards. The proposed project is compatible with existing uses in the surrounding area and allowable under existing State and County zoning and development regulations. Testing of the exploratory well would not produce substantial air or noise emissions that would disturb existing uses on adjacent properties.

4.1.2 NORTH KOHALA COMMUNITY DEVELOPMENT PLAN (CDP)

The proposed exploratory well is being constructed by DWS in accordance with the *North Kohala Community Development Plan (CDP)* which supports the following actions:

- Repair or replace aging water lines.
- Create redundancy for Kohala’s water system by putting in a new well in Hala‘ula.
- It will be a matching well to the current wells in Hāwī. They will be connected, which will create redundancy.
- In addition, a new well at Makapala will be brought on-line in the near future, and DWS has plans to build and/or replace three enclosed reservoirs in the district.

4.1.3 COUNTY OF HAWAI‘I ZONING ORDINANCE

The County zoning in the project area is Agriculture (Ag-20a). 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.

Construction of an exploratory well is a permitted use under the existing County zoning designation. Should the well produce water of appropriate quality and quantity, the additional facilities (such as a reservoir and pipeline needed for it to serve the Hāwī-Hala‘ula Water System) would be installed. Before committing to that action, DWS would prepare a Chapter 343 Environmental Assessment for the production well and related facilities, obtain *Plan Approval* from the Hawai‘i County Department of Planning, and obtain other required permits.

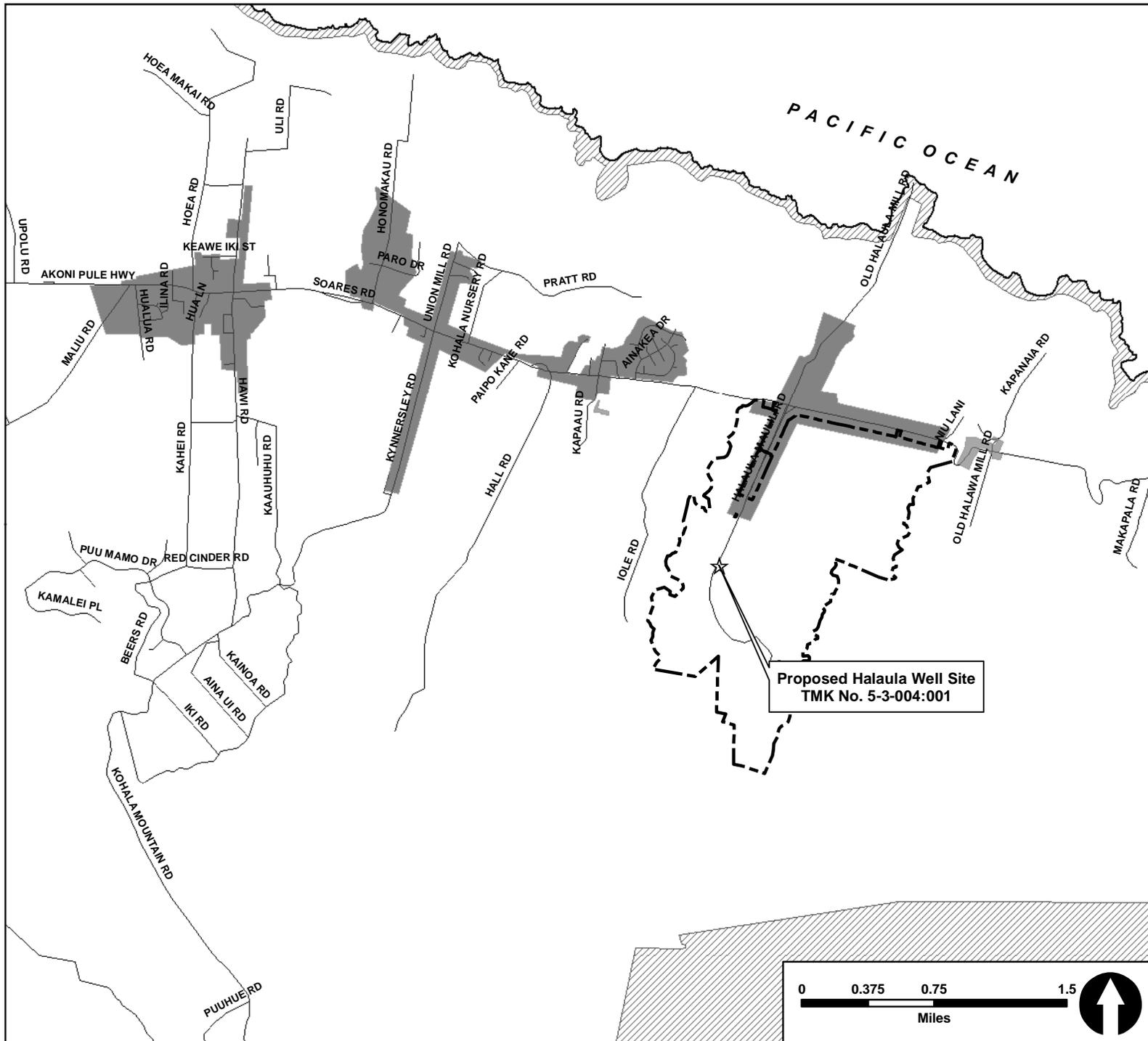
4.1.4 STATE OF HAWAI‘I LAND USE LAW

The site is in the State Agriculture District. HRS Chapter 205 §205-4.5 (7) lists public utility facilities such as water wells as permissible uses within the State Agricultural District.

4.1.5 COMPLIANCE WITH THE STATE OF HAWAI‘I’S DRINKING WATER STATE REVOLVING FUND (DWSRF) PROGRAM REQUIREMENTS

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. It emphasizes the needs of small water systems, such as

Hala'ula. The proposed project is consistent with the program emphasis on small water systems. This document includes all of the environmental information required for compliance with the DWSRF program.



State Land Use Districts:

- Urban
- Rural
- Agriculture
- Conservation

Legend:

- Roadways
- Project Parcel Boundary

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

Prepared By:

PLANNING
SOLUTIONS

Sources:

- TNWRE
- State of Hawai'i GIS
- USGS 7.5' Quad Map

Figure 4.1:

State Land Use Districts

Hala'ula Well & Reservoir

Figure 4.1 State Land Use Districts 2009-04-20.mxd

4.2 CROSS-CUTTING FEDERAL AUTHORITIES

The following sub-sections address the proposed project's relationship to other Federal "cross-cutting" environmental, economic, social, and miscellaneous federal authorities as required by the State of Hawai'i's Drinking Water State Revolving Fund (DWSRF) program.

4.2.1 ENVIRONMENTAL POLICY AUTHORITIES

4.2.1.1 *Archeological and Historic Preservation Act (16 U.S.C. § 469a-1) and National Historic Preservation Act (16 U.S.C. § 470)*

As discussed in Section 3.8, the project site is located in an area that has been used extensively for agriculture for many years and no known archaeological or historic features exist at the site. The State of Hawai'i Historic Preservation Division (SHPD) of the Department of Land and Natural Resources has determined that the project will have no effect on historic properties, and the impact assessment conducted for the project detected no evidence that the site is used or valued for cultural purposes. Consequently, the proposed action complies with these regulations.

4.2.1.2 *Clean Air Act (42 U.S.C. § 7401)*

As discussed in Section 3.4, air quality at the site of the proposed project is good. The site is in an air quality attainment area as defined by the State of Hawai'i Department of Health in its EPA-approved Air Quality program. Only minor amounts of grading and excavation will be required for the project. This, along with the wet climate, means that fugitive dust will not be a problem during construction.

It is anticipated that diesel-powered construction equipment will be used to construct the proposed well and reservoir. Emissions from the diesel will slightly degrade air quality for the short period of time they are in operation. However, all applicable emission and ambient air quality standards will continue to be met. 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 micro-climate. Consequently, the proposed project complies with the provision of the Clean Air Act.

4.2.1.3 *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.

This Act does not apply to the State of Hawai'i at this time. Consequently, the proposed project is consistent with the provisions of the Coastal Barrier Resources Act.

4.2.1.4 *Coastal Zone Management Act (16 U.S.C. § 1451)*

Enacted as Chapter 205A, HRS, the Hawaii 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 Hawai'i 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.

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- 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 Hala‘ula Exploratory Well project is located approximately 2 miles from the coastline. It does not involve the placement, erection, or removal of materials near the coastline. The type and scale of the activities that it involves typically do not have the potential to affect coastal resources. Finally, it is consistent with the CZM objectives that are relevant to a project of this sort.

4.2.1.5 Endangered Species Act (16 U.S.C. 1531)

The Endangered Species Act (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended), 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. Provisions are made 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.

Sections 3.5 and 3.7 of this EA describe 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 around the site of the Hala‘ula Exploratory Well project. Similarly, the site does not contain unique or valuable wildlife habitat. 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, and their responses are included in the *Final EA*.

4.2.1.6 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 3.12.1.1, the Census Tract 218 exhibits a median household income that is higher than the countywide average, and an unemployment rate that is slightly lower. The project area is not considered a low-income area. The purpose of the proposed exploratory well is to determine a viable source of potable 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 3. 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 project complies with this Executive Order.

4.2.1.7 Farmland Protection Policy Act (7 U.S.C. § 4201)

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. Because the Hala'ula Exploratory Well project will result in the use of just under an acre of prime agricultural land for the proposed well and related support facilities and might use funding assistance from a Federal agency, the proposed action is subject to FPPA.

The area that would be affected is a small fraction of the agricultural land in the area. The project will remove approximately 60 macadamia nut trees to accommodate the construction of the exploratory well. It will not impact continued agricultural use for the remaining portion of the private parcel. The proposed project is intended to confirm the availability of a viable source of potable water to serve the Hāwī and Hala'ula Water System. Consequently, the project is in compliance with FPPA.

4.2.1.8 Fish and Wildlife Coordination Act (16 U.S.C. § 661)

The Fish and Wildlife Coordination Act, as amended, authorizes the Secretaries of Agriculture and Commerce to require consultation with the 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”

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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 Hala‘ula Exploratory Well project does not require the diversion of any stream or the modification of any other water body and will not result in impacts on fish or wildlife resources. Nonetheless, the U.S. Fish and Wildlife Service and the State Department of Land and Natural Resources were asked to comment on the Draft EA and to confirm that the project will not cause the loss of wildlife resources.

4.2.1.9 Floodplain Management (Executive Order 11988 (1977), as Amended by Executive Order 12148 (1979))

Based on the latest available (December, 2001) Flood Insurance Rate Map for the area, the project site 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.

4.2.1.10 Protection of Wetlands (Executive Order 11990 (1977), as Amended by Executive Order 12608 (1997))

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.

4.2.1.11 Safe Drinking Water Act (42 U.S.C. § 300(f))

The Safe Drinking Water Act (SDWA) is the principal federal law that ensures the quality of Americans’ drinking water. Under SDWA, the EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The Safe Drinking Water Act 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 and GWUDI sources being far greater than those for groundwater sources.

Extensive testing of the water withdrawn from the well will be carried out by the County of Hawai‘i to determine if it is suitable for development as a potable water source.

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 project is located.

4.2.1.12 Wild and Scenic Rivers Act (16 U.S.C. §1271)

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.

There are no designated Wild and Scenic Rivers in the State of Hawai'i at this time. Consequently, the proposed project is consistent with the provisions of the Wild and Scenic Rivers Act.

4.2.1.13 Essential Fish Habitat Consultation Process Under the Magnuson-Stevens Fishery Conservation and Management Act (16 USC §1801)

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), which was reauthorized and amended by the Sustainable Fisheries Act (1996), requires the eight regional fishery management councils to describe and identify essential fish habitat (EFH) in their respective regions, to specify actions to conserve and enhance that EFH, and to minimize the adverse effects of fishing on EFH. Congress defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). The EFH guidelines under 50 CFR 600.10 further interpret the EFH definition as follows:

Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

The Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Act support one of the Nation's overall marine resource management goals - maintaining sustainable fisheries. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with NMFS regarding the potential effects of their actions on EFH. The Western Pacific Regional Fishery Management Council Website lists EFH areas in Hawai'i and the Pacific Islands (<http://www.wpcouncil.org/maps.htm>). All of the identified areas are offshore marine environments. The proposed Hala'ula Exploratory Well site is about 2 miles from the ocean and has no potential to impact any of the identified EFH areas.

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4.2.2 ECONOMIC POLICY AUTHORITIES**4.2.2.1 Administration of the Clean Air Act and the Water Pollution Control Act with Respect to Federal Contracts or Loans (Executive Order 11738)**

Requirement. This Executive Order prohibits the provision of Federal assistance to facilities that do not comply with either the Clean Water Act or the Clean Air Act unless the purpose of the assistance is to remedy the cause of the violation.

Compliance. As discussed in Sections 3.2 and 3.4, the proposed exploratory well will comply with applicable provisions of the Clean Air Act and Clean Water Act. Consequently, it is consistent with the intent of this Executive Order.

4.2.2.2 Demonstration Cities and Metropolitan Development Act of 1966, Public Law 89-754, as Amended (42 USC § 3331)

Requirement. In 1966, Congress enacted the Demonstration Cities and Metropolitan Development Act to ensure that federal grants were not working at cross-purposes. Section 204 of that act was significant in asserting federal interest in improving the coordination of public facility construction projects to obtain maximum effectiveness of federal spending and to relate such projects to area wide development plans. Section 204 requires that all applications for the planning and construction of facilities be submitted to an area wide planning agency composed of local elected officials for review and comment. To demonstrate compliance with this Act, the Hawai‘i State Department of Health requires DWSRF assistance recipients to describe the proposed project’s effect on local development plans.

Compliance. Section 4.1.1 of this report addresses this requirement by demonstrating the proposed exploratory well’s consistency with the County of Hawai‘i General Plan.

4.2.2.3 Procurement Prohibitions (Executive Order 11738, Section 306 of the Clean Air Act)

Requirement. This Executive Order requires recipients of Federal assistance to certify that they will not procure goods, services or materials from suppliers who are on the EPA’s list of Clean Air Act violators.

Compliance. DWS will comply with this requirement in selecting contractors, construction materials, and other services for the Hala‘ula Exploratory Well project.

4.2.2.4 Procurement Prohibitions (Section 508 of the Clean Water Act)

Requirement. This Executive Order requires recipients of Federal assistance to certify that they will not procure goods, services or materials from suppliers who are on the EPA’s list of Clean Water Act violators.

Compliance. DWS will comply with this requirement in selecting contractors, construction materials, and other services for the Hala‘ula Exploratory Well project.

4.2.3 SOCIAL POLICY AUTHORITIES**4.2.3.1 Age Discrimination Act of 1975 (42 USC § 6102)**

Requirement. This Act stipulates that no person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Compliance. DWS will comply with this requirement in hiring contractors and other staff for its Hala‘ula Exploratory Well project.

4.2.3.2 Civil Rights Act of 1964, Title VI (42 USC §2000(d))

Requirement. This Act stipulates that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Compliance. DWS will comply with this requirement in hiring contractors and other staff for its Hala'ula Exploratory Well project.

4.2.3.3 Equal Employment Opportunity (Executive Order 11246, as amended)

Requirement. This Executive Order requires all recipients of Federal contracts to include certain non-discrimination and "affirmative action" provisions in all contracts. The provisions commit the contractor or subcontractor to maintain a policy of non-discrimination in the treatment of employees, to make this policy known to employees, and to recruit, hire and train employees without regard to race, color, sex, religion and national origin.

Compliance. DWS will include these provisions in all contracts for the Hala'ula Exploratory Well project.

4.2.3.4 Minority Business Enterprise Development (Executive Order 12432)

Requirement. This Executive Order sets forth in more detail the responsibilities of Federal agencies for the monitoring, maintaining of data and reporting of the use of minority enterprises.

Compliance. DWS will comply with all applicable requirements pertaining to this Executive Order.

4.2.3.5 National Program for Minority Business Enterprise (Executive Order 11625)

Requirement. This Executive Order directs Federal agencies to promote and encourage the use of minority business enterprises in projects utilizing federal funds.

Compliance. DWS will comply with this Executive Order in selecting contractors, goods, and services for its Hala'ula Exploratory Well project.

4.2.3.6 National Women's Business Enterprise Policy and National Program for Women's Business Enterprise (Executive Order 12138)

Requirement. This Executive Order directs each department or agency empowered to extend Federal financial assistance to any program or activity to issue regulations requiring the recipient of such assistance to take appropriate affirmative action in support of women's business enterprises and to prohibit actions or policies which discriminate against women's business enterprises on the grounds of sex.

Compliance. DWS will comply with this Executive Order in selecting contractors, goods, and services for its Hala'ula Exploratory Well project.

4.2.3.7 Rehabilitation Act of 1973 (29 USC § 794)

Requirement. This Act stipulates that no otherwise qualified handicapped individual in the United States shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Compliance. DWS will comply with this requirement for its Hala'ula Exploratory Well project.

4.2.3.8 Small Business Administration Reauthorization and Amendment Act of 1998 (Pub. L. 100-590, Section 129)

Requirement. This Amendment directs Federal agencies to promote and encourage the use of small business enterprises in projects utilizing federal funds.

PLANS, POLICIES, AND CONTROLS

Compliance. DWS will comply with this Act in selecting contractors, goods, and services for its Hala‘ula Exploratory Well Project.

4.2.3.9 Department of Veterans Affairs and Housing and Urban Development, and Agencies Appropriations Act (1993, Pub. L. 102-389)

Requirement. This Act requires the Administrator of the Environmental Protection Agency to ensure that at least 8 per centum of Federal funding for prime and subcontracts awarded in support of authorized programs, including grants, loans and contracts for wastewater treatment and for leaking underground storage tanks, be made available to businesses or other organizations owned or controlled by socially and economically disadvantaged individuals (within the meaning of Section 8(a)(5) and (6) of the Small Business Act (15 USC 637(a)(5) and (6)), including historically black colleges and universities.

Compliance. DWS will comply with applicable provisions of this Act in selecting contractors, goods, and services for its Hala‘ula Exploratory Well project.

4.2.3.10 Disadvantaged Business Enterprise Rule (2008, 40 CFR Part 33)

Requirement. This Rule sets forth the responsibilities of entities receiving an identified loan under a financial assistance agreement capitalizing a revolving loan fund, for the monitoring, maintaining of data and reporting of the use of disadvantaged business enterprises (DBEs). It requires the Applicant to fully comply with 40 CFR Part 33, entitled “Participation by Disadvantaged Business Enterprises in Procurement Under Environmental Protection Agency (EPA) Financial Assistance Agreements” and ensure that all contracts funded by a DWSRF loan include a term or condition requiring compliance with 40 CFR Part 33. The Rule further stipulates that the applicant shall not discriminate on the basis of race, color, national origin, or sex in the performance of its contract and that the applicant carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements.

Compliance. DWS will comply with all applicable provisions of this rule for its Hala‘ula Exploratory Well project, including timely completion and submission of the DBE Subcontractor Performance and Utilization Forms (respectively, EPA Forms 6100-3 and 6100-4), as appropriate.

4.2.4 MISCELLANEOUS AUTHORITIES

4.2.4.1 Debarment and Suspension (Executive Order 12549)

Requirement. Prior to the award of a consultant or construction contract, the Applicant (County) shall fully comply with Subpart C of 40 CFR Part 32, entitled “Responsibilities of Participants Regarding Transactions” and ensure that any lower tier covered transaction and subsequent lower tier transaction, includes a term or condition requiring compliance with Subpart C. The Applicant shall certify that the General Contractor, Consultant, sub-consultants, subcontractors and suppliers are not on the Excluded Parties List. The Applicant acknowledges that failing to disclose the information required under 40 CFR 32.335 may result in the delay or negation of payment, or pursuance of legal remedies, including suspension and debarment. The Applicant may access the Excluded Parties List System at <http://epls.arnet.gov>.

Compliance. DWS will include a condition in all contracts funded for this project that would terminate the contract should the contractor be determined to be an Excluded Party under this Executive Order.

4.2.4.2 *Uniform Relocation and Real Property Acquisition Policies Act (Pub. L. 91-646 (1971), as Amended, 42 USC 4601-4655)*

Requirement. The Act establishes a policy for fair and equitable treatment of persons who are displaced from their homes, farms or businesses to make way for a federally assisted project.

Compliance. No such displacements are anticipated for the Hala'ula Exploratory Well project. However, should any such displacements occur as a result of the project, DWS will ensure that the affected parties would receive fair and equitable treatment consistent with this law.

4.2.4.3 *Preservation of Open Competition and Government Neutrality towards Contractor's Labor Relations on Federal and Federally Funded Construction Projects (Executive Order 13202 (2001), as amended by Executive Order 13208 (2001))*

Requirement. DWSRF assistance recipients must ensure that bid specifications, project agreements, and other controlling documents for construction contracts awarded after February 17, 2001 do not require or prohibit agreements with labor organizations. Further, DWSRF assistance recipients and any construction manager acting upon their behalf must not otherwise discriminate against bidders, offerors, contractors, or subcontractors for entering into, or refusing to enter into, agreements with labor organizations.

Compliance. DWS will comply with applicable provisions of this Act in selecting contractors, goods, and services for its Hala'ula Exploratory Well project and will include this provision in the specifications of all contracts funded for this project.

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5.0 DETERMINATION

5.1 SIGNIFICANCE CRITERIA

Hawaii Administrative Rule §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. Hawaii 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 viewplanes identified in county or state plans or studies; or,*
- 13. Requires substantial energy consumption.*

5.2 FINDINGS

The potential effects of constructing the proposed Hala'ula Exploratory Well described earlier in this document were evaluated using these significance criteria. The findings with respect to these criteria are summarized below:

5.2.1 IRREVOCABLE LOSS OR DESTRUCTION OF VALUABLE RESOURCE

The proposed project would be constructed on a macadamia nut orchard uphill from an existing Department of Water Supply facility. It does not involve the loss of any significant cultural or natural resources.

DETERMINATION

5.2.2 CURTAILS BENEFICIAL USES

Construction of the proposed exploratory well would not curtail beneficial uses of the site. The development affects less than an acre of land and would not preclude or disrupt future use of the surrounding agricultural land.

5.2.3 CONFLICTS WITH LONG-TERM ENVIRONMENTAL POLICIES OR GOALS

The proposed project is consistent with the County of Hawai‘i’s General Plan (see Section 4.1) and with the State’s long-term environmental policies and goals as expressed in Chapter 344, Hawaii Revised statutes and elsewhere in State law.

5.2.4 SUBSTANTIALLY AFFECTS ECONOMIC OR SOCIAL WELFARE

The proposed exploratory well is intended to identify and confirm a viable groundwater source addition to the existing Hāwī-Hala‘ula Water System. It would not have a substantial adverse effect on economic or social welfare. Rather, it allows the DWS to assure its customers that they have access to an adequate supply of high-quality potable water, consistent with the maintenance of environmental quality.

5.2.5 PUBLIC HEALTH EFFECTS

The proposed project would not adversely affect air or water quality. Neither would it generate solid waste or produce other emissions that would have a significant adverse effect on public health. Construction noise has the potential to exceed noise standards at the property line, but the potential adverse effects of this can be mitigated by the noise abatement and attenuation measures that the County would require of the construction contractor.

5.2.6 PRODUCE SUBSTANTIAL SECONDARY IMPACTS

The proposed project would not produce significant secondary impacts. It is not designed to foster population growth or to promote economic development.

5.2.7 SUBSTANTIALLY DEGRADE ENVIRONMENTAL QUALITY

The proposed project would not have substantial long-term environmental effects. Noise from construction and pump testing is the only impact of note, and it would 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 would occur, its effects on nearby properties can be managed.

5.2.8 CUMULATIVE EFFECTS OR COMMITMENT TO A LARGER ACTION

Construction and operation of the proposed exploratory well do not constitute a commitment to a larger action and are not intended to facilitate substantial population growth. Instead, the project is intended to primarily confirm the availability of a viable source of potable water to serve the Hāwī and Hala‘ula Water System.

5.2.9 AFFECTS A RARE, THREATENED, OR ENDANGERED SPECIES

The proposed project would be constructed on a privately owned portion of a macadamia nut orchard that has been heavily disturbed for agricultural use, which is near to an existing DWS facility. It would not utilize a resource needed for the protection of rare, threatened, or endangered species.

5.2.10 AFFECTS AIR OR WATER QUALITY OR AMBIENT NOISE LEVELS

Construction and operation of the proposed exploratory well would not have a measurable effect on air or water quality. Neither would they have a long-term effect on noise levels. The project does have the potential to increase noise levels during the construction phase. Adequate mitigation measures would be taken to limit these to reasonable levels.

5.2.11 ENVIRONMENTALLY SENSITIVE AREAS

There are no environmentally sensitive areas or resources in the immediate vicinity of the proposed project. While the Island of Hawai'i as a whole is subject to certain geologic hazards, such as earthquakes, tsunamis, and lava flows, the project site is in an area that has a relatively low frequency of lava flows and is above the tsunami evacuation zone. All structures would be constructed consistent with the Hawai'i Uniform Building Code for Earthquake Zone 4.

5.2.12 AFFECTS SCENIC VISTAS AND VIEWPLANES

The appearance of the proposed exploratory well would not significantly alter the visual character of the site or change views across it.

5.2.13 REQUIRES SUBSTANTIAL ENERGY CONSUMPTION

Construction and testing of the well would require only modest and temporary amounts of transportation fuels. Should DWS decide to convert the exploration well into a production facility (not included in this proposed action), the energy required for operation of the well would be offset by the gravity-driven delivery of water to the customers of the Hāwī-Hala'ula Water System and should result in a net savings of energy use compared with the existing system.

5.3 DETERMINATION

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

DETERMINATION

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7.0 CONSULTATION & DISTRIBUTION

7.1 CONSULTATION

In the development of the *Draft EA*, DWS consulted with the State Historic Preservation Division and parties listed in Table 7.1.

7.2 DRAFT EA DISTRIBUTION

This DEA was distributed to the individuals and organizations listed in Table 7.1. The written comments received are reproduced, along with DWS's responses, at the end of this Section.

Table 7.1 Preliminary Draft EA Distribution List

Federal Agencies	
Environmental Protection Agency, Pacific Islands Contact Office	District Engineer, U.S. Army Engineer District, Honolulu
U.S. Department of Agriculture, Natural Resources Conservation Service	U.S. Fish & Wildlife Service, Pacific Island Eco-Region
District Chief, Geological Survey, Department of the Interior	
State Agencies	
Office of Environmental Quality Control (2 copies + electronic file)	Department of Business and Economic Development & Tourism, Planning Office
Department of Hawaiian Home Lands	Department of Health, Clean Water Branch
Office of Hawaiian Affairs	Department of Health, Environmental Planning Office
Department of Accounting and General Services	Department of Health, Safe Drinking Water Branch (1 copy-Honolulu, and 1 copy-Hilo)
Department of Agriculture	Department of Land and Natural Resources (5 copies)
Commission on Water Resource Management	DLNR Historic Preservation Division
Department of Transportation (DOT)	Environmental Center, University of Hawai'i
DOT Highways Division	Water Resources Center, University of Hawai'i
County of Hawai'i	
Planning Department	Fire Department
Department of Public Works	Police Department
Department of Parks and Recreation	Department of Environmental Management, Solid Waste Division
Utilities	
Hawaiian Electric Light Company	Hawaiian Telcom
Libraries and Depositories	
Hawai'i State Library Hawai'i Documents Center	Hilo Public Library
University of Hawai'i, Hilo Campus Library	Bond Memorial Public Library , Kapa'au
DBEDT Library	
Non-Government Organizations	
Kohala Hawaiian Civic Club	Bill Shantelle, Surety Kohala

7.3 COMMENTS & RESPONSES ON THE DRAFT EA

The comment period for the Draft EA ended on June 7, 2009. Table 7.2 below lists the parties that submitted written comments on the project. Their comments and DWS’s responses to them are reproduced at the end of this section. DWS is providing a copy of the Final EA to each of the organizations listed, to the Office of Coastal Zone Management and to other parties listed as mandatory by the Office of Environmental Quality Control.

Table 7.2 Written Comments Received on the Draft EA

<i>No.</i>	<i>Name & Title of Commenter</i>	<i>Organization</i>
1	Darryl Oliveira, Chief	Fire Department, County of Hawai‘i
2	George P. Young, P.E., Chief	U.S. Army Corps of Engineers, Honolulu District
3	Micah A. Kane, Chairman	Department of Hawaiian Home Lands
4	BJ Leithead Todd, Director	Planning Department, County of Hawai‘i
5	Abbey Seth Mayer, Director	Office of Planning, DBEDT
6	Harry S. Kubojiri, Police Chief	Police Department, County of Hawai‘i
7	Alec Wong, P.E., Chief	Clean Water Branch, State Department of Health
8	Nancy McMahon, Deputy	State Historic Preservation Division
9	Patrick Leonard, Field Supervisor	Fish and Wildlife Service, U.S. Department of the Interior
10	Morris M. Atta, Administrator	Department of Land and Natural Resources, Land Division
11	Gordon Tribble, Center Director	U.S. Geological Survey, U.S. Department of the Interior
12	Brennon T. Morioka, Director	Department of Transportation, State of Hawai‘i
13	Ernest Y.W. Lau, Administrator	Dept. of Accounting and General Services
14	Kelvin H. Sunada, Manager	State Environmental Planning Office, Department of Health
15	Clyde W. Nāmu‘o, Administrator	Office of Hawaiian Affairs, State of Hawai‘i
Source: Compiled by Planning Solutions, Inc. (2009).		

William P. Kenoi
Mayor



County of Hawai'i
HAWAII FIRE DEPARTMENT
25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720
(808) 981-8394 • Fax (808) 981-2037

COMMENT NO. 01

Darryl J. Oliveira
Fire Chief

Glen P. I. Honda
Deputy Fire Chief

May 12, 2009

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

SUBJECT: Draft Environmental Assessment
Hala'ula Exploratory Well
County of Hawai'i, Department of Water Supply

We have no comments to offer at this time in reference to the above-mentioned draft Environmental Assessment.


DARRYL OLIVEIRA
Fire Chief

JCP:lpc



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

September 9, 2009

TO: Mr. Darryl J. Oliveira, Fire Chief
Fire Department, County of Hawai'i

FROM: Milton D. Pavao, Manager

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII

Thank you for your May 12, 2009 letter concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter. We understand that your Department has no comments to offer on the project at this time.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,


Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
 ATTENTION OF:

May 14, 2009

COMMENT NO. 02

Regulatory Branch

File Number POH-2009-00184

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

Dear Mr. White:

This acknowledges receipt of the draft Environmental Assessment (dEA) which addresses activities and impacts of the proposed Hala'ula Exploratory Water Well, North Kohala District, Hawaii Island (less than 0.99 acres and TMK (3) 5-3-4: por. 01).

The dEA indicates that waters of the United States, as represented by the perennial streams of Waina'ia and Halelua and any wetlands, are absent from the proposed project area. The dEA does state in appropriate sections that there is no potential for waters of the U.S. to be impacted by construction of project structures and associated ground disturbing activities within the proposed improvement area. Based upon this information it is our determination that a Department of Army (DA) permit for Section 404 activities of the Clean Water Act will not be required for the proposed Hala'ula Exploratory Water Well project.

In the future, if changes in the development plan consider options for access which may require the construction of crossing structures in perennial streams, your client should consult with this office regarding DA permit requirements. Thank you for your assessment of potential impacts to the aquatic environment of the Waina'ia and Halelua watersheds. Please contact Mr. Farley Watanabe of my staff at 438-7701, or at Farley.K.Watanabe@usace.army.mil if you have any questions or need additional information and reference the above file number.

Sincerely,


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



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720
 TELEPHONE (808) 961-8050 • FAX (808) 961-8657

September 9, 2009

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

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
 NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your May 14, 2009 letter [your reference File No. POH-2009-00184] concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (dEA)* and preparing your letter.

Thank you for confirming that the perennial streams of Waina'ia and Halelua and any wetlands are absent from the proposed project area. You also confirm that there is no potential for waters of the United States to be impacted by construction of project structures and associated ground disturbing activities within the proposed improvement area. We appreciate your determination that, on the basis of the information provided, a Department of Army (DA) permit will not be required.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,


 Milton D. Pavao, P.E.
 Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
 (w/o enc.) Mr. Perry White, Planning Solutions, Inc.

... Water brings progress...

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LINDA LINGLE
GOVERNOR
STATE OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

COMMENT NO. 03

MICAH A. KANE
CHAIRMAN
HAWAIIAN HOMES COMMISSION
KAILANA H. PARK
DEPUTY TO THE CHAIRMAN
ROBERT J. HALL
EXECUTIVE ASSISTANT

May 20, 2009

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

Dear Mr. White:

Subject: Hala'ula Exploratory Well
North Kohala, Hawaii'i

Thank you for the opportunity to review the subject proposal. The Department of Hawaiian Home Lands has no comment to offer at this time. If you have any questions, please contact our Planning Office at (808) 620-9480.

Aloha and mahalo,


Micah A. Kane, Chairman
Hawaiian Homes Commission



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 98720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

September 9, 2009

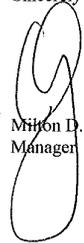
Mr. Micah A. Kane, Chairman
State of Hawaii
Department of Hawaiian Home Lands
Hawaiian Homes Commission
P.O. Box 1879
Honolulu, HI 96805

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your May 20, 2009 letter concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter. We understand that your Department has no comments to offer on the project at this time.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,


Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

... *Water brings progress...*

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William P. Kenoi
Mayor



County of Hawaii

PLANNING DEPARTMENT
Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720
Phone (808) 961-8288 • Fax (808) 961-8742

COMMENT NO. 04

BJ Leithead Todd
Director

Margaret K. Masinaga
Deputy

May 18, 2009

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

Dear Mr. White:

Subject: Review of Draft Environmental Assessment
Project: Hala'ula Exploratory Well Project
TMK: (3) 5-3-004:001; Maulili, North Kohala, Hawaii

Thank you for your letter dated May 6, 2009, requesting comments from this office regarding the Draft Environmental Assessment for the proposed Hala'ula Exploratory Well project.

The subject property is zoned A-20a (Agricultural-20 acre minimum lot size). The property is situated within the State Land Use Agricultural District. The subject area is not within the Special Management Area (SMA).

Please note that the North Kohala Community Development Plan (CDP) was adopted by Ordinance No. 08 151, on November 5, 2008. Your Draft Environmental Assessment should incorporate discussion regarding the proposed project in relation to the vision, goals, and values of the North Kohala CDP.

We have no further comments to offer, at this time. However, please keep us informed and provide our department with a copy of the Final Environmental Assessment for our records.

Mr. Perry J. White
Page 2
May 18, 2009

If you have any further questions or if you need further assistance, please feel free to contact Bethany Morrison at 961-8288, extension 252.

Sincerely,

A handwritten signature in black ink that reads "BJ Leithead Todd".

BJ LEITHEAD TODD
Planning Director

BJM:cs
P:\wpwin60\Bethany\General Zoning Inquiries\drafter\Hala'ulaexploratorywell.doc



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

September 9, 2009

TO: Ms. BJ Leithead Todd, Planning Director
Planning Department

FROM: Milton D. Pavao, Manager

SUBJECT: **DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your May 18, 2009 letter concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter.

Thank you for noting that the North Kohala Community Development Plan (CDP) was adopted by Ordinance No. 08 151 on November 5, 2008. We have incorporated discussion regarding the proposed project in relation to the vision, goals, and values of the North Kohala CDP in Section 4.1.2 of the *Final Environmental Assessment (FEA)* titled "North Kohala Community Development Plan (CDP)" which reads as follows:

The proposed exploratory well is being constructed by DWS in accordance with the North Kohala Community Development Plan (CDP) which supports the following actions:

- *Repair or replace aging water lines.*
- *Create redundancy for Kohala's water system by putting in a new well in Hala'ula.*
- *It will be a matching well to the current wells in Hāwī. They will be connected, which will create redundancy.*
- *In addition, a new well at Makapala will be brought on-line in the near future, and DWS has plans to build and/or replace three enclosed reservoirs in the district.*

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,


Milton D. Pavao, P.E.
Mahaga

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

... Water brings progress...



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

OFFICE OF PLANNING
235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

COMMENT NO. 05

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR
ABBEY SETH MAYER
DIRECTOR
OFFICE OF PLANNING

Telephone: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-12578

May 20, 2009

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

Dear Mr. White:

Subject: Draft Environmental Assessment (DEA) for
Halaula Exploratory Well
TMK: (3)5-3-004:001, North Kohala District, Hawaii

Thank you for the opportunity to review and comment upon the Draft Environmental Assessment (DEA) for the Halaula Exploratory Well. The Office of Planning has no comments at this time. In so stating, the Office offers no judgment of either the adequacy of the document itself or the merits of the proposed project.

If you have any questions, please contact the Land Use Division at 587-2842.

Sincerely,

Abbey Seth Mayer
Director



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

September 10, 2009

Ms. Abbey Seth Mayer, Director
State of Hawai'i
Office of Planning
Department of Business, Economic
Development & Tourism
P.O. Box 2359
Honolulu, HI 96804

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your May 20, 2009 letter [your Ref. No. P-12578] concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter. We understand that your Department has no comments at this time and offer no judgment either to the adequacy of the document itself or to the merits of the proposed project.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy – (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

... *Water brings progress...*

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William P. Kenoi
Mayor



County of Hawai'i

POLICE DEPARTMENT
349 Kapi'olani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

May 13, 2009

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

Dear Mr. White:

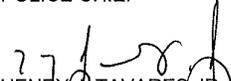
SUBJECT: Hala'ula Exploratory Well

Staff has reviewed the above-referenced project request and has no comment or objections to offer at this time.

Should you have any questions, please contact Captain Richard Miyamoto, Commander of the North Kohala District, at (808) 889-6540.

Sincerely,

HARRY S. KUBOJIRI
POLICE CHIEF


HENRY J. TAVARES JR.
ASSISTANT POLICE CHIEF
AREA II OPERATIONS

RM:dmv

COMMENT NO. 06

Harry S. Kubojiri
Police Chief

Paul K. Ferreira
Deputy Police Chief



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

September 10, 2009

TO: Mr. Harry S. Kubojiri, Police Chief
County of Hawai'i, Police Department

FROM: Milton D. Pavao, Manager

SUBJECT: **DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAI'I**

Thank you for your May 13, 2009 letter concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter. We understand that your Department has no comments or objections to offer on the project at this time.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,


Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

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LINDA LINGLE
GOVERNOR OF HAWAII



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

May 21, 2009

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

Dear Mr. White:

**Subject: Draft Environmental Assessment for the
Proposed Hala'ula Exploratory Well Project
North Kohala District, Island of Hawaii, Hawaii
TMK: (3) 5-3-004:001**

The Department of Health, Clean Water Branch (CWB), has reviewed your letter dated May 6, 2009, regarding the subject project and offers these comments. Please note that our review is based solely on the information provided in your letter for the subject project and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at <http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

COMMENT NO. 07

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

In reply, please refer to:
EMD / CWB

05079PMT.09

Mr. Perry J. White
May 21, 2009
Page 2

05079PMT.09

2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:
 - a. Storm water associated with 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. This includes area used for a construction base yard and the storage of any construction related equipment, material, and waste products. An NPDES permit is required before the start of the construction activities.
 - b. Treated process wastewater associated with well drilling activities effluent.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.

3. For types of wastewater not listed in Item No. 3 above or wastewater discharging into Class 1 or Class AA waters, you may need an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.
4. You must also submit a copy of the 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 CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.

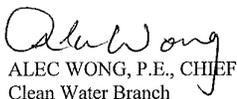
Mr. Perry J. White
May 21, 2009
Page 3

05079PMT.09

5. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage is required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

If you have any questions, please visit our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the Engineering Section, CWB, at 586-4309.

Sincerely,


ALEC WONG, P.E., CHIEF
Clean Water Branch

MT:np



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

September 10, 2009

Mr. Alec Wong, P.E., Chief
State of Hawai'i
Department of Health, Clean Water Branch
P.O. Box 3378
Honolulu, HI 96801-3378

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your May 21, 2009 letter [your reference File No. EMD/CWB 05079PMT.09] concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter.

For purposes of clarity, we have reproduced the comments that expressed specific requirements before each response, numbering them as you did in your letter.

Comment 1:

Any project and its potential impacts to State waters must meet the following criteria:

- a. *Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.*
- b. *Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.*
- c. *Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).*

Response: DWS will comply with all criteria that are applicable to the proposed project.

Comment 2:

You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

- a. *Storm water associated with 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*

... Water brings progress...

Mr. Alec Wong, P.E., Chief
Page 2
September 10, 2009

development or sale. This includes area used for a construction base yard and the storage of any construction related equipment, material, and waste products. An NPDES permit is required before the start of the construction activities.

- b. *Treated process wastewater associated with well drilling activities effluent. You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOT must be submitted 30 calendar days before to the start of construction activities. The NOT forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.*

Response: Construction of the proposed exploratory well would disturb less than an acre of land. Consequently, as indicated in Section 3.2.2.1 of the DEA no NPDES permit coverage will be required. Best Management Practices will be followed to minimize and eliminate introduction of any pollutants into storm water runoff.

Comment 3:

For types of wastewater not listed in Item No. 2 above or wastewater discharging into Class 1 or Class AA waters, you may need an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.

Response: The proposed project would not result in discharges into Class 1 or Class AA waters. If plans change and it becomes necessary to discharge hydrotesting or dewatering, DWS will obtain the required NPDES permit coverage.

Comment 4:

You must also submit a copy of the 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 CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.

Response: A copy of the Draft EA has been sent to SHPD, and their comments will be reproduced in the Final EA. If plans change and it becomes necessary to seek a NOI-C, DWS will send SHPD a copy of the NOI-C that it submits to the Clean Water Branch.

Comment 5:

Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements

Mr. Alec Wong, P.E. Chief
Page 3
September 10, 2009

contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

Response: DWS understands that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the State's Water Quality Standards.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,


Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

COMMENT NO. 08

LAURA H. THELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
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
ENVIRONMENT
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KARAOI AWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

May 22, 2009

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

LOG NO: 2009.1481
DOC NO: 0905MD26
Archaeology

Dear Mr. White:

**SUBJECT: National Historic Preservation Review (NHPA) Section 106 Review –
Section 106 Historic Preservation Review Request for
The Hala`ula Exploratory Well
Halaula Ahupua`a, North Kohala District, Island of Hawaii
TMK: (3) 5-3-004:001 (por.)**

Thank you for the opportunity to comment on the aforementioned undertaking, which we received on April 24, 2009. This project will involve construction of the well drilling pad for the new proposed Halaula Well. We concur that **no historic properties will be affected** by this undertaking because:

- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological inventory survey (AIS) found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other: *SHPD previously reviewed this project and concurred that no historic properties were affected (Log No. 2009.1589, Doc No. 0903MD54).*

In the event that historic resources, including human skeletal remains, cultural materials, lava tubes, and lava blisters/bubbles are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, Hawaii Island Section, needs to be contacted immediately at (808) 933-7653. Please contact Morgan Davis at (808) 933-7650 if you have any questions or concerns regarding this letter.

Aloha,

Nancy McMahon, Deputy SHPO/State Archaeologist
and Historic Preservation Manager
State Historic Preservation Division



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKUAŌA STREET, SUITE 20 • HILO, HAWAII 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

September 10, 2009

Ms. Nancy McMahon
State of Hawai'i
Department of Land and Natural Resources
Deputy SHPO/State Archaeologist and Historic
Preservation Manager
State Historic Preservation Division
P.O. Box 621
Honolulu, HI 96809

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your May 22, 2009 letter [your reference Log No. 2009.1481, Doc No. 0905MD26 Archaeology] concerning the proposed Hala`ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter.

Thank you for confirming that the proposed project will not affect any historic properties. In the unlikely event that undocumented archaeological and/or cultural remains are encountered, the contractor will cease work immediately, protect the inadvertent discovery from additional disturbance and notify SHPD immediately.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

... *Water brings progress...*

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COMMENT NO. 09



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850



In Reply Refer To:
2009-FA-0091

JUN 02 2009

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

Dear Mr. White:

We received a copy of the Draft Environmental Assessment (DEA) for the proposed Hala'ula Exploratory Well Project, North Kohala, Hawaii, on May 7, 2009. The proposed project sponsor is the County of Hawaii Department of Water Supply. The proposed project is to drill, case, and pump test an exploratory well on 100 acres of a current macadamia nut orchard.

The federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) is known to frequent agricultural areas of the island of Hawaii. Hawaiian hoary bats roost and give birth in both exotic and native woody vegetation. We offer the following information to assist you in avoiding impacts to Hawaiian hoary bats. No woody vegetation less than 15 feet off the ground should be disturbed during the bat birthing and pup rearing season (July through September). If you must disturb woody vegetation less than 15 feet off the ground during the the Hawaiian hoary bat pupping season, we recommend conducting biological surveys to determine if bats are present. Please contact our office regarding survey methodology.

We appreciate your concern for fish and wildlife resources and have enclosed a list of standard best management practices for you to consider in relation to your particular proposed action. We recommend that the applicable measures identified in this list be incorporated and made part of the action when it is implemented. This letter should not be taken to indicate our concurrence with your proposed action, and it is possible that we may have other comments or recommendations in the future.

Mr. Perry J. White

2

Thank you for consulting with us on your proposed action. If you have any questions, please contact Michael Molina at (808) 792-9400.

Sincerely,

Patrick Leonard

Patrick Leonard
Field Supervisor

Enclosure

Acting

**U.S. Fish and Wildlife Service
Recommended Standard Best Management Practices**

The Fish and Wildlife Service recommends that the following measures be incorporated into projects to minimize the degradation of water quality and adverse impacts to fish and wildlife resources.

1. Turbidity and siltation from project-related work shall be minimized and contained to within the vicinity of the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse tidal and weather conditions.
2. Dredging/filling in the marine environment shall be scheduled to avoid coral spawning and recruitment periods and sea turtle nesting and hatching periods.
3. Dredging and filling in the marine/aquatic environment shall be designed to avoid or minimize the loss of special aquatic site habitat (coral reefs, wetlands etc.) and any ecological functions unavoidably lost as a result of the project shall be replaced.
4. All project-related materials and equipment (dredges, barges, backhoes etc) to be placed in the water shall be cleaned of pollutants prior to use.
5. No project-related materials (fill, revetment rock, pipe etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, wetlands etc.);
6. All debris removed from the marine/aquatic environment shall be disposed of at an approved upland or ocean dumping site.
7. No contamination (trash or debris disposal, non-native species introductions attraction of non-native pests etc.) of adjacent marine/aquatic environments (reef flats, channels, open ocean, stream channels, wetlands, beaches, forests etc.) shall result from project-related activities. This shall be accomplished by implementing a litter-control plan and developing a Hazard Analysis and Critical Control Point Plan (HACCP – see <http://www.haccp-nrm.org/Wizard/default.asp>) to prevent attraction and introduction of non-native species.
8. Fueling of project-related vehicles and equipment should take place away from the water and a contingency plan to control petroleum products accidentally spilled during the project shall be developed. Absorbent pads and containment booms shall be stored on-site, if appropriate, to facilitate the clean-up of accidental petroleum releases.
9. Any under-layer fills used in the project shall be protected from erosion with stones (or core-loc units) as soon after placement as practicable.
10. Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydros seeding etc.).



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

September 10, 2009

Dr. Loyal Mehrhoff, Ph.D., Field Supervisor
Pacific Islands Fish and Wildlife Office
Fish and Wildlife Service
United States Department of the Interior
300 Ala Moana Blvd., Room 3-122, Box 50088
Honolulu, HI 96850

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your office's June 2, 2009 letter [your reference No. 2009-FA-0091] concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter.

For purposes of clarity, we have reproduced the comments that expressed specific requirements before each response, numbering them as you did in your letter.

Comment 1:

*The federally endangered Hawaiian hoary bat (*Lasiurus cinereus seinotus*) is known to frequent agricultural areas of the island of Hawaii. Hawaiian hoary bats roost and give birth in both exotic and native woody vegetation. We offer the following information to assist you in avoiding impacts to Hawaiian hoary bats. No woody vegetation less than 15 feet off the ground should be disturbed during the bat birthing and pup rearing season (July through September). If you must disturb woody vegetation less than 15 feet off the ground during the Hawaiian hoary bat pupping season, we recommend conducting biological surveys to determine if bats are present. Please contact our office regarding survey methodology.*

Response: Rana Biological Consulting, Inc. has conducted a biological survey of the project site. The survey report, which is included as Appendix C in the FEA, concludes that modification of the current habitat on the Hala'ula site is not expected to result in significant impacts to any botanical, avian or mammalian species currently listed or proposed for listing under either the Federal, or State of Hawaii's endangered species laws. It also finds that the development of the site would not have a significant deleterious impact on native faunal resources found within the North Kohala District. DWS will take appropriate preventative measures to avoid the potential disturbance of nesting Hawaiian hoary bats by initiating the recommendation made in the biological survey report. As a result of a recent consultation with the Fish & Wildlife Service, our consulting biologist informed us that the period between April 15 and August 15 is the preferred period for the birthing and pupping season of the Hawaiian hoary bat.

... Water brings progress...

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410. Or call (202) 720-5964 (voice and TDD)

Dr. Loyal Mehrhoff, Ph.D., Field Supervisor
Page 2
September 10, 2009

Comment 2:

We appreciate your concern for fish and wildlife resources and have enclosed a list of standard best management practices for you to consider in relation to your particular proposed action. We recommend that the applicable measures identified in this list be incorporated and made part of the action when it is implemented.

Response: DWS will employ all applicable standard best management practices provided by the Fish and Wildlife Service in relation to the proposed action.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,



Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

LINDA LINGLE
GOVERNOR OF HAWAII



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

June 3, 2009

COMMENT NO. 10

Laura H. Thiele
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

Planning Solutions
Ward Plaza Suite 330
210 Ward Avenue
Honolulu, Hawaii 96814-4012

Attention: Dr. Charles Morgan

Ladies and Gentlemen:

Subject: Hala'ula Exploratory Well

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Division of Aquatic Resources, Engineering Division, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Morris M. Atta
for Morris M. Atta
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII



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

May 11, 2009

RECEIVED
LAND DIVISION

2009 MAY 21 A 10:17

Laura H. Thiele
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

MEMORANDUM

TO:

- DLNR Agencies:**
- Div. of Aquatic Resources
 - Div. of Boating & Ocean Recreation
 - Engineering Division
 - Div. of Forestry & Wildlife
 - Div. of State Parks
 - Commission on Water Resource Management
 - Office of Conservation & Coastal Lands
 - Land Division -



FROM: *for Morris M. Atta*
SUBJECT: Draft environmental assessment for Hala'ula Exploratory Well
LOCATION: North Kohala, Hawaii
APPLICANT: Planning Solutions on behalf of the Department of Water Supply

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 1, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*
Date: 18 May 2009

AQUATIC RESOURCES: 2336

DIRECTOR	
COMM. FISH.	
AQ RES/ENV	
AQ REC	
PLANNER	
STAFF SVCS	
RCU/WH	
STATISTICS	
AFRC/FED AID	
EDUCATION	
SECRETARY	
OFFICE SVCS	
TECH ASST	<input checked="" type="checkbox"/>
Return to:	
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Due Date:	

R.N.

RECEIVED
MAY 18 2009
DAR - HILO

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 11, 2009

MEMORANDUM

TO: **DLNR Agencies:**
 Div. of Aquatic Resources
 Div. of Boating & Ocean Recreation
 Engineering Division
 Div. of Forestry & Wildlife
 Div. of State Parks
 Commission on Water Resource Management
 Office of Conservation & Coastal Lands
 Land Division -

RECEIVED
LAND DIVISION
2009 MAY 15 P 3:20
DEPARTMENT OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

FROM: *for* Morris M. Atta *Chalewa*
SUBJECT: Draft environmental assessment for Hala'ula Exploratory Well
LOCATION: North Kohala, Hawaii
APPLICANT: Planning Solutions on behalf of the Department of Water Supply

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 1, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *Eric T. Hirano*
Date: 5/15/09

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/MorrisAtta
Ref.:DEAHalaulaExploratoryWell
Hawaii.433

COMMENTS

- We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The Flood Insurance Program does not have any regulations for developments within Flood Zone X.
- Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

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

- Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
- Mr. 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 water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.
- 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 Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: *Eric T. Hirano*
ERIC T. HIRANO, CHIEF ENGINEER
Date: 5/15/09



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

September 10, 2009

Mr. Morris M. Atta, Administrator
State of Hawai'i
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, HI 96809

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your June 3, 2009 letter concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter. The Department of Land and Natural Resources comments consisted of attached memoranda from the Division of Aquatic Resources and the Engineering Division.

We understand that the Department of Land and Natural Resources, including the Division of Aquatic Resources, does not have any comments to offer on the project at this time. We would like to thank the Engineering Division for confirming that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X and that the National Flood Insurance Program does not have any regulations for developments within Zone X.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,


Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy: (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

... *Water brings progress...*

COMMENT NO. 11



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Pacific Islands Water Science Center
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813
Phone: (808) 587-2400/Fax: (808) 587-2401

June 5, 2009

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

Dear Mr. White:

Subject: Draft Environmental Assessment (DEA), Hala'ula Exploratory Well

Thank you for forwarding the subject DEA for review and comment by the staff of the U.S. Geological Survey Pacific Islands Water Science Center. 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
Center Director



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

September 10, 2009

Mr. Gordon Tribble, Center Director
U.S. Geological Survey
United States Department of the Interior
Pacific Islands Water Science Center
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813

DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL NORTH KOHALA DISTRICT, ISLAND OF HAWAII

Thank you for your June 5, 2009 letter concerning the proposed Hala'ula Exploratory Well Project. We understand that due to prior commitments and lack of available staff that your Department was unable to review the *Draft Environmental Assessment (DEA)*.

Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

... *Water brings progress...*

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LINDA LINGLE
GOVERNOR



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

June 4, 2009

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

Dear Mr. White:

Subject: Halaula Exploratory Well Project
Draft Environmental Assessment (DEA)

Thank you for providing the subject project's DEA for the State Department of Transportation's (DOT) review and comments.

DOT understands that the subject project proposes to construct an exploratory well and to perform the required pump and water quality testing to confirm its suitability as a potable water supply for the North Kohala District.

DOT does not anticipate any significant, adverse impacts to State highway facilities, including Akoni Pule Highway.

If there are any questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at (808) 587-2356.

Very truly yours,

BRENNON T. MORIOKA, PH.D., P.E.
Director of Transportation

c: Katherine Kealoha, Office of Environmental Quality Control
Lawrence E. Beck, P.E., Hawaii County Department of Water Supply

COMMENT NO. 12

BRENNON T. MORIOKA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI
JIRO A. SUMADA

IN REPLY REFER TO:

STP 8.3276



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

September 10, 2009

Mr. Brennon T. Morioka, Ph.D., P.E.
Director of Transportation
State of Hawai'i
869 Punchbowl Street
Honolulu, HI 96813-5097

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your June 4, 2009, letter [your reference No. STP 8.3276] concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter.

Thank you for confirming that the Department of Transportation does not anticipate any significant, adverse impacts to State highway facilities, including Akoni Pule Highway.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

... *Water brings progress...*

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LINDA LINGLE
GOVERNOR



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

JUN 15 2009

Mr. Perry J. White
Planning Solutions, Inc.
210 Ward Avenue, Suite 330
Honolulu, Hawai'i 96814

Dear Mr. White:

Subject: Draft Environmental Assessment for Proposed Hala'ula Exploratory Well Project
(TMK 5-3-004:001)

Thank you for the opportunity to provide comments on the Environmental Assessment for the proposed Hala'ula Exploratory Well project. The project does not impact any of the Department of Accounting and General Services' projects or existing facilities. We have no comments to offer at this time.

If you have any questions, please have your staff call Mr. David Deponte of the Planning Branch at 586-0492.

Sincerely,


ERNEST Y. W. LAU
Public Works Administrator

JT:vca
c: OEQC
DAGS-HDO

COMMENT NO. 13

RUSS K. SAITO
COMPTROLLER
BARBARA A. ANNIS
DEPUTY COMPTROLLER
(P)1175.9



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

September 10, 2009

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

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your June 15, 2009 letter concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter. Thank you for confirming that the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities. We understand that your Department has no comments to offer at this time.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,


L Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

... *Water brings progress...*

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LINDA LINGLE
GOVERNOR OF HAWAII



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

June 10, 2009

COMMENT NO. 14

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

In reply, please refer to:
EPO-09-074

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

Dear Mr. White:

SUBJECT: Draft Environmental Assessment for Hala'ula Exploratory Well
North Kohala, Island of Hawaii, Hawaii
TMK: (3) 5-3-004: 001

Thank you for allowing us to review and comment on the subject application. The application was routed to the various branches of the Environmental Health Administration. We have the following Wastewater Branch, Safe Drinking Water Branch and General comments.

Wastewater Branch

The document proposes to drill, case and pump test an exploratory well. The exploration would help the County of Hawaii Department of Water Supply (DWS) determine if the well produces water of sufficient quality and quantity to warrant its development into a production sources for its Hawai-Halaula Water System.

The project is located in the Non-Critical Wastewater Disposal Area (CWDA).

We are concerned with any potential contamination to the wells via improper wastewater treatment and disposal from any nearby source. There are no cesspools or treatment individual wastewater systems located within the vicinity. Therefore, as long as water quality is checked periodically, contamination to the well should be minimized. We have no objections to the proposed exploratory well.

Mr. White
June 10, 2009
Page 2

All wastewater plans must meet Department's Rules, HAR Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. If you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Safe Drinking Water Branch

We understand the County of Hawaii Department of Water Supply (DWS) proposes to drill, case, and pump test an exploratory well. This exploration would help DWS determine if the well produces water of sufficient quality and quantity to warrant its development into a production source for its Hawi-Hala'ula public water system.

We have the following comments:

1. All projects that propose development of new sources of drinking water serving or proposed to serve a public water system must comply with the terms of Section 11-20-29 of the Hawaii Administrative Rules, Title 11, Chapter 20, titled "Rules Relating to Potable Water Systems." This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.
2. The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the state of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.
3. Furthermore, all sources of public water systems must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.

Should you have any questions regarding the potable water system, please contact Kumar Bhagavan of the SDWB Compliance Section at 586-4258 in Honolulu.

Underground Injection Control

Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawaii Administrative Rules, Title

Mr. White
June 10, 2009
Page 3

11, Chapter 23, titled "Underground Injection Control" (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.

Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operating limitations, monitoring and reporting requirements, and other facility management and operational conditions. A completed UIC permit-application form is needed to apply for a UIC permit.

A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term.

Questions about UIC may be directed to Chauncey Hew at 586-4258.

General

We strongly recommend that you review all of the Standard Comments on our website: www.hawaii.gov/health/environmental/envy-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

If there are any questions about these comments please contact Jiakai Liu with the Environmental Planning Office at 586-4346.

Sincerely,



KELVIN H. SUNADA, MANAGER
Environmental Planning Office

c: EPO
WWB
SDWB



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

September 10, 2009

Mr. Kelvin H. Sunada, Manager
State of Hawai'i
Department of Health
Environmental Planning Office
P.O. Box 3378
Honolulu, HI 96801-3378

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your June 10, 2009 letter [your reference File No. EPO-09-074] concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter.

For purposes of clarity, we have reproduced the comments that expressed specific requirements before each response, numbering them as you did in your letter.

WASTEWATER BRANCH

Comment 1:

The project is located in the Non-Critical Wastewater Disposal Area (CWDA).

Response: Thank you for confirming that the proposed project is located in the Non-Critical Wastewater Disposal Area.

Comment 2:

We are concerned with any potential contamination to the wells via improper wastewater treatment and disposal from any nearby source. There are no cesspools or treatment individual wastewater systems located within the vicinity. Therefore, as long as water quality is checked periodically, contamination to the well should be minimized. We have no objections to the proposed exploratory well.

Response: Thank you for confirming that you have no objections to the proposed exploratory well. In addition, you confirm that there are no cesspools or treatment individual wastewater systems located within the vicinity. As indicated in the DEA Section 2.1, the Department of Water Supply (DWS) proposes to pump test the well to determine if its yield is adequate and the quality suitable for use as drinking water.

... Water brings progress...

Mr. Kelvin H. Sunada, Manager
Page 2
September 10, 2009

Comment 3:

All wastewater plans must meet Department's Rules, HAR Chapter 11-62 "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. If you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Response: DWS will ensure that any wastewater plans will comply with the Department's Rules, HAR Chapter 11-62.

SAFE DRINKING WATER BRANCH

Comment 4:

All projects that propose development of new sources of drinking water serving or proposed to serve a public water system must comply with the terms of Section 11-20-29 of the Hawaii Administrative Rules, Title 11, Chapter 20, titled "Rules Relating to Potable Water Systems." This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

Response: If the results of tests of the exploratory well are positive, DWS will prepare an engineering report to certify the well for drinking water use and process it through the SDWB.

Comment 5:

The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the state of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.

Response: The engineering report will include all required components of the report, including water quality analyses and identification and assessment of potential sources of contamination.

Comment 6:

Furthermore, all sources of public water systems must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.

Response: As a part of the engineering report, 2- and 10-year zones of contribution will be delineated and potential sources of contamination in these contributing areas will be identified.

Mr. Kelvin H. Sunada, Manager
Page 3
September 10, 2009

UNDERGROUND INJECTION CONTROL

Comment 7:

Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawaii Administrative Rules, Title 11, Chapter 23, titled "underground Injection Control" (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.

Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operating limitations, monitoring and reporting requirements, and other facility management and operational conditions. A completed UIC permit-application form is needed to apply for a UIC permit. A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term.

Response: No injection well is included in the project.

GENERAL

Comment 8:

We strongly recommend that you review all of the Standard Comments on our website: www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

Response: DWS will comply with any Standard Comments that are applicable to the proposed project.

The Final Environmental Assessment/Finding of No Significant Impact is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,



Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

COMMENT NO. 15

PHONE (808) 594-1888



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

FAX (808) 594-1865

HRD09/4321

July 2, 2009

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

RE: Request for comments on the proposed Hala'ula exploratory well and draft environmental assessment (DEA), North Kohala Hawaii'i, TMK: 5-3-004:001.

Aloha e Perry White,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated May 6, 2009. OHA has reviewed the project and offers the following comments.

We appreciate the assistance of staff at Planning Solutions and their diligence and follow through in the receipt of these comments. We understand that the Department of Water Supply (DWS) proposes to drill, case, and pump test an exploratory well. The exploration would help DWS determine if the well produces water of sufficient quality and quantity to warrant its development into a production source for its Hāwī-Hala'ula Water System.

We do note that DWS may seek federal funding for the project and that this environmental review is meant to comply with both state and federal environmental laws. However, we also ask if a National Historic Preservation Act Section 106 consultation is being done due to the use of federal monies.

OHA points out that approximately 62 trees on over three acres of land would have to be removed and about 43,000 square feet of orchard land cleared to make room for the well pad. DWS estimates that site grading would require the excavation of 3,110 cubic yards of soil and the embankment of 2,725 cubic yards.

Perry White
July 2, 2009
Page 2

As such, we were somewhat disappointed by the complete lack of a faunal survey for the area. (*Section 3.5.1*) OHA sees that other sections such as section 3.7 *Aquatic Resources* includes some data presented for review and we wonder as to why some sections presented surveys and others left blank. OHA understands that this area is a monocultured orchard and that the probability of finding species of concern there is likely to be low; however, we have been surprised before and without having any data at all there is no way for us to assess the potential impacts of this proposal.

Similarly, while we do understand that this project area has been previously disturbed, OHA points out that even in heavily urbanized Honolulu new cultural deposits are still being disturbed by recent projects. Therefore, we urge that in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division shall be contacted.

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at granta@oha.org.

'O wau iho nō me ka 'oia 'i'o,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o".

Clyde W. Nāmu'o
Administrator

C: OHA Hawaii'i CRC



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

September 10, 2009

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

**DRAFT ENVIRONMENTAL ASSESSMENT: HALA'ULA EXPLORATORY WELL
NORTH KOHALA DISTRICT, ISLAND OF HAWAII**

Thank you for your June 10, 2009 letter [your reference File No. HRD09/4321] concerning the proposed Hala'ula Exploratory Well Project. We appreciate the time you and your staff spent reviewing the *Draft Environmental Assessment (DEA)* and preparing your letter.

For purposes of clarity, we have reproduced the comments that contained specific requests before each response.

Comment 1:

We do note that DWS may seek federal funding for the project and that this environmental review is meant to comply with both state and federal environmental laws. However, we also ask if a National Historic Preservation Act Section 106 consultation is being done due to the use of federal monies.

Response: Yes, a National Historic Preservation Act Section 106 consultation is being done. Accompanying this letter is a separate letter from DWS requesting OHA's consultation on the Determination of No Historic Properties Affected for the proposed project. Attached to that consultation letter is a copy of SHPD's determination [also reproduced as Comment Letter No. 08 in the *Final Environmental Assessment (FEA)*] that no historic properties would be affected by the project (SHPD Log no. 2009.1481/Doc. No. 0905MD26/Archaeology). A separate archaeological and cultural impact assessment report is also attached to that letter (and is contained in Appendix B of the FEA). That report addresses comments in your office's July 2, 2009 letter to DWS (your reference HRD09/4321).

Comment 2:

OHA points out that approximately 62 trees on over three acres of land would have to be removed and about 43,000 square feet of orchard land cleared to make room for the well pad. DWS estimates that site grading would require the excavation of 3,110 cubic yards of soil and the embankment of 2,725 cubic yards. As such, we were somewhat disappointed by the complete lack of a faunal survey for the area. (Section 3.5.1) OHA sees that other sections such as section 3.7 Aquatic Resources includes some data presented for review and we wonder as to why some sections presented surveys and others left blank. OHA understands that this area is a monocultured orchard and that the probability of finding species of concern there is likely to be low; however, we have been surprised

... Water brings progress...

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410. Or call (202) 720-5964 (voice and TDD)

Mr. Clyde W. Nāmu'o, Administrator
Page 2
September 10, 2009

before and without having any data at all there is no way for us to assess the potential impacts of this proposal.

Response: Rana Biological Consulting, Inc. has conducted a biological survey of the project site. The survey report, which is included as Appendix C in the FEA, concludes that modification of the current habitat on the Hala'ula site is not expected to result in significant impacts to any botanical, avian, or mammalian species currently listed or proposed for listing under either the Federal, or State of Hawai'i endangered species laws. It also finds that the development of the site would not have a significant deleterious impact on native faunal resources found within the North Kohala District. DWS will take appropriate preventative measures to avoid the potential disturbance of nesting Hawaiian hoary bats by initiating the recommendation made in the biological survey report.

Comment 3:

Similarly, while we do understand that this project area has been previously disturbed, OHA points out that even in heavily urbanized Honolulu new cultural deposits are still being disturbed by recent projects. Therefore, we urge that in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division shall be contacted.

Response: The DWS will comply fully with the provisions of Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules. In the unlikely event that significant undocumented cultural deposits or human skeletal remains are encountered, the contractor will cease work immediately, protect the inadvertent discovery from additional disturbance and notify SHPD immediately.

The *Final Environmental Assessment/Finding of No Significant Impact* is enclosed for your records. Should you have any questions, please call Mr. Lawrence E. Beck at the Department of Water Supply, (808) 961-8070, extension 260.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

LEB:dfg

Enc.

copy - (w/o enc.) Mr. Greg Fukumitsu, Tom Nance Water Resource Engineering
(w/o enc.) Mr. Perry White, Planning Solutions, Inc.

APPENDIX A. HISTORIC PRESERVATION REVIEW

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

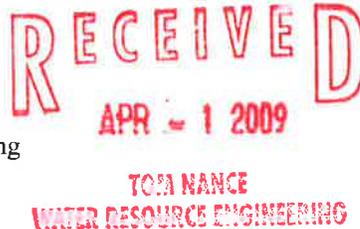
RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
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

March 25, 2009

Greg Fukumitsu
Tom Nance Water Resource Engineering
680 Ala Moana Boulevard, Suite 406
Honolulu, Hawaii 96813-5411



LOG NO: 2009.1589
DOC NO: 0903MD54
Archaeology

Handwritten initials and a red stamp with a grid of names: TN, GF, TY, GS, LT, ACCG, and JOB.

Dear Mr. Fukumitsu:

**SUBJECT: Chapter 6E-8 Historic Preservation Review –
Request for Comment on a Grading Permit Application for the Halaula Well
Development, Phase I
Halaula Ahupua`a, North Kohala District, Island of Hawaii
TMK: (3) 5-3-004:001 (por.)**

Thank you for the opportunity to comment on the aforementioned project, which we received on March 23, 2009. This project will involve construction of the well drilling pad for the new proposed Halaula Well. Please note that the Grading Notes on Sheet C-3 need to be changed: should cultural materials or human remains be encountered, it is SHPD – not the County Planning Department – who must be notified and clear the project to proceed (as detailed below). We determine that **no historic properties will be affected** by this project because:

- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological inventory survey (AIS) found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other:

In the event that historic resources, including human skeletal remains, cultural materials, lava tubes, and lava blisters/bubbles are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, Hawaii Island Section, needs to be contacted immediately at (808) 933-7653. If you have questions about this letter please contact Morgan Davis at (808) 933-7650.

Aloha,

Nancy McMahon, Deputy SHPO/State Archaeologist
and Historic Preservation Manager
State Historic Preservation Division

APPENDIX B. ARCHAEOLOGICAL & LIMITED CULTURAL ASSESSMENT

An Archaeological and Limited Cultural Assessment for the Proposed Development of the Department of Water Supply's Hala'ula Exploratory Well

(TMKs:3-5-3-04:001 portion)

Ma'ulili Ahupua'a
North Kohala District
Island of Hawai'i



DRAFT VERSION

PREPARED BY:

Robert B. Rechtman, Ph.D.
and
Ashton Dircks Ah Sam, B.A.

PREPARED FOR:

Planning Solutions, Inc.
210 Ward Ave., Suite 330
Honolulu, HI 96814

September 2009

RECHTMAN CONSULTING, LLC

507-A E. Lanikaula St. Hilo, Hawaii 96720

phone: (808) 969-6066 fax: (808) 443-0065

e-mail: bob@rechtmanconsulting.com

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL STUDIES

An Archaeological and Limited Cultural Assessment for the
Proposed Development of the Department of Water Supply's
Hala'ula Exploratory Well

(TMKs:3-5-3-04:001 portion)

Ma'ulili Ahupua'a
North Kohala District
Island of Hawai'i

EXECUTIVE SUMMARY

At the request of Planning Solutions, Inc., on behalf of the County of Hawai'i Department of Water Supply (DWS), Rechtman Consulting, LLC conducted an archaeological and limited cultural assessment for the placement of an exploratory well in Ma'ulili Ahupua'a, North Kohala District, Island of Hawai'i. The project area consists of a roughly 1 acre portion of TMK:3-5-3-04:001 located above the communities of Hala'ula and 'Äinakea. DWS intends to construct an exploratory well and perform the pump and water quality testing needed to confirm the suitability of the well as a potable water supply to serve the Hāwī and Hala'ula Water System. The project will also include the removal of existing vegetation, the construction of a small well-drilling pad, and the installation of security fencing. DWS may seek federal funding for the project under the Drinking Water State Revolving Fund (DWSRF) program administered by the Safe Drinking Water Branch of the State Department of Health. Because allocation of DWSRF funds would constitute a federal undertaking, this study was prepared in support of environmental documentation in compliance with both Chapter 343, Hawai'i Revised Statutes and the National Environmental Policy Act (NEPA).

Robert B. Rechtman, Ph. D. and Ashton Dircks Ah Sam, B.A. conducted a systematic field survey of the roughly 1 acre project area on August 13, 2009. As a result of the archaeological field investigation, there were no historic properties identified within the current study area, nor were there any potential traditional resources or evidence of on-going cultural practices observed. Likewise, there were no traditional cultural resources, beliefs, or practices identified during consultation with individuals familiar with the project area. Given the negative findings of the current study, it is concluded that development of the proposed County of Hawai'i Department of Water Supply Hala'ula exploratory well will not significantly impact any known historic properties or any cultural resources and practices of a traditional and customary nature. It is therefore recommended that no further historic preservation work or mitigation is needed.

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INTRODUCTION

At the request of Planning Solutions, Inc., on behalf of the County of Hawai'i Department of Water Supply (DWS), Rechtman Consulting, LLC conducted an archaeological and limited cultural assessment for the placement of an exploratory well in Ma'ulili Ahupua'a, North Kohala District, Island of Hawai'i (Figure 1). The project area consists of a roughly 1 acre portion of TMK:3-5-3-04:001 located above the communities of Hala'ula and 'Ainakea (Figure 2). The proposed well location is on private land owned by Kohala Preserve Conservation Trust, LLC situated about 0.5 kilometers south of and uphill from the DWS existing 0.10 MG Hala'ula Tank (Figure 3). Currently, this area is a producing macadamia nut orchard (Figure 4). Access to the proposed well site is via Hala'ula-Ma'ulili Road off Akoni Pule Highway. Hala'ula-Ma'ulili Road is currently paved to the existing tank site beyond which it is a dirt "plantation" road (Figure 5) partially lined on the eastern side with Norfolk Pines (Figure 6). DWS intends to construct an exploratory well and perform the pump and water quality testing needed to confirm the suitability of the well as a potable water supply to serve the Hāwī and Hala'ula Water System. The project will also include the removal of existing vegetation, the construction of a small well-drilling pad, and the installation of security fencing (Figure 7). If the proposed well produces water of adequate quantity and quality, DWS would in the future pursue the approvals needed to develop the exploratory well into a production well, add storage capacity to the site, and construct a pipeline connecting it with the existing municipal water system.

The study area is situated at an elevation of roughly 775 feet (236 meters) above sea level. The soil in the study area is classified as Ainakea silty clay loam (AaD), a well-drained soil that is 24 to 36 inches thick (Sato et al. 1973). These soils formed in highly weathered tholeiitic lava flows that emanated from Kohala Volcano approximately 250,000-700,000 years ago (Wolfe and Morris 1996). Like most of the relatively old Kohala slopes the area is considered an erosional environment. As mentioned above, the entire project area is within an active macadamia nut orchard, which has been subject to extensive mechanical clearing as part of the current land use as well as during earlier land use associated with sugarcane cultivation. Vegetation within the study area consists of macadamia nut trees and a wide range of grasses and weeds (Figures 8 and 9).

DWS may seek federal funding for the project under the Drinking Water State Revolving Fund (DWSRF) program administered by the Safe Drinking Water Branch of the State Department of Health. Because allocation of DWSRF funds would constitute a federal undertaking, this study was prepared in support of environmental documentation in compliance with both Chapter 343, Hawai'i Revised Statutes and the National Environmental Policy Act (NEPA). Specifically, with respect to federal compliance, this report is intended to satisfy Section 106 of the National Historic Preservation Act; and with respect to state compliance this report is intended to satisfy both Act 50 (approved by the Governor on April 26, 2000) and Hawai'i Administrative Rules 13§13-275. To these ends this study was performed in accordance with the Office of Environmental Quality Control (OEQC) *Guidelines for Assessing Cultural Impacts* adopted by the State of Hawai'i Environmental Council and the *Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports* as contained in Hawai'i Administrative Rules 13§13-276. According to 13§13-275-5(b)(5)(A) when no archaeological resources are discovered during an archaeological survey the production of an Archaeological Assessment report is appropriate. Compliance with the above standards is sufficient for meeting the historic preservation review process requirements of both the State Historic Preservation Officer (SHPO) and the Department of Land and Natural Resources—State Historic Preservation Division (DLNR—SHPD).

This report contains background information outlining the project area's physical and cultural contexts, a presentation of prior studies conducted in the vicinity of the current project area, and current survey expectations based on the information obtained from the previous work. Also presented are an explanation of the project's methods, the findings of the archaeological field survey, the results of consultation, and conclusions and recommendations.

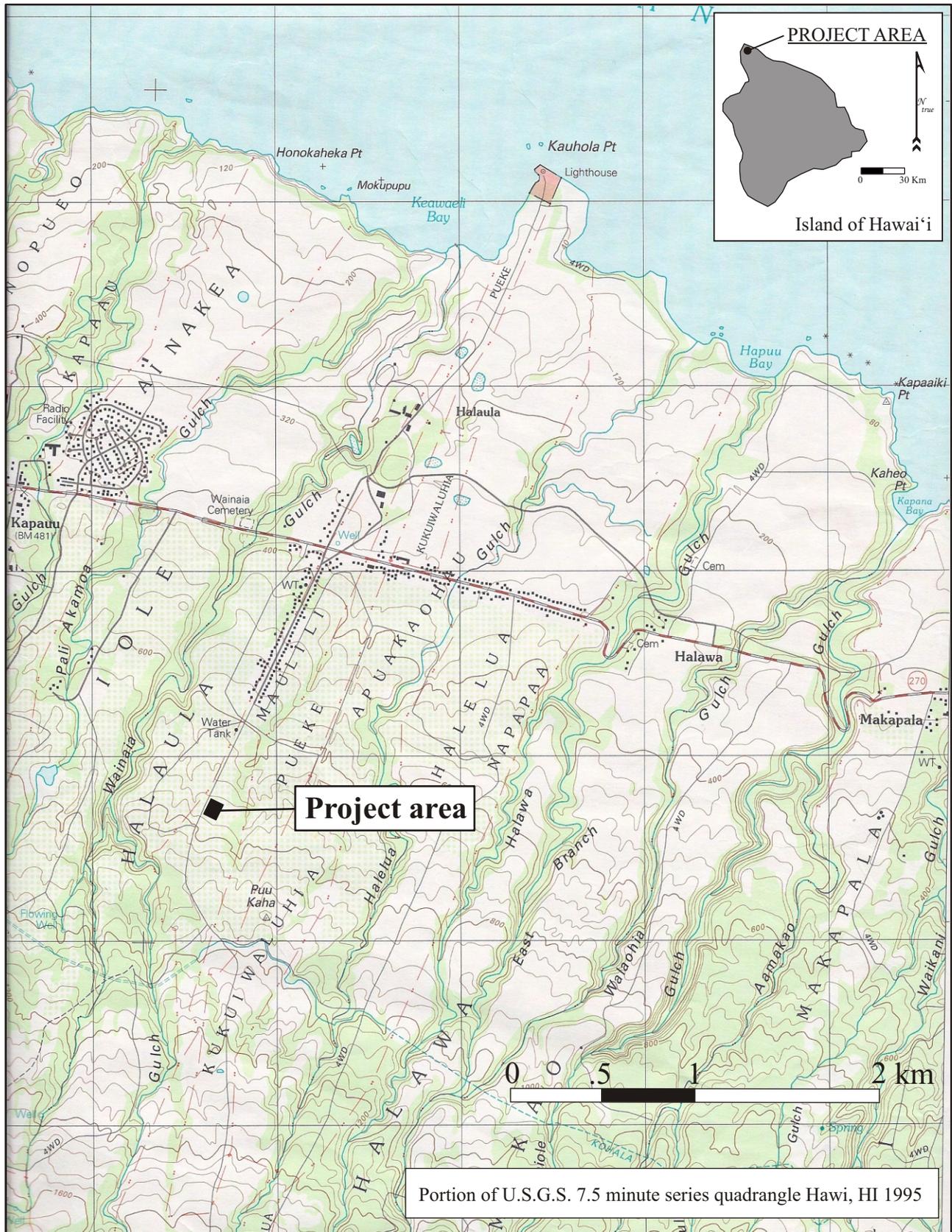


Figure 1. Project area location.



Figure 3. Existing DWS Hala'ula tank.



Figure 4. Typical vegetation within the project area.



Figure 5. Existing plantation road leading to the project area, view to the northwest.



Figure 6. Row of Norfolk pines along eastern edge of existing access road, view from project area to the southwest.

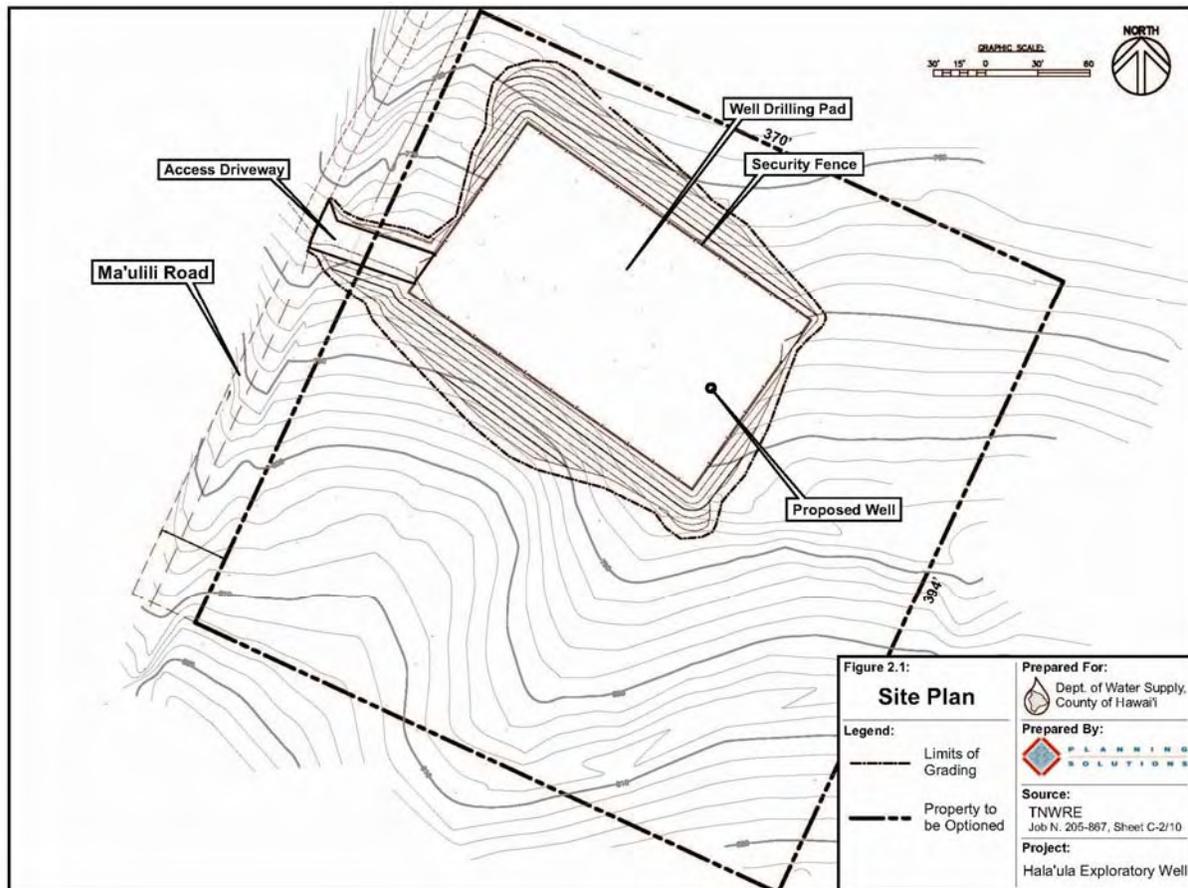


Figure 7. Exploratory well development plan.

BACKGROUND STUDIES

This section of the report describes and synthesizes prior archaeological, cultural, and historical studies that are relevant to the current project area; and provides a brief culture-historical background.

Prior Archaeological Studies

As will be discussed below, only one prior archaeological study involved fieldwork in Ma'ulili Ahupua'a (Erkelens and Athens 1994). Early studies in the general area, first by Thrum (1907a) and later Stokes (Stokes and Dye 1991), describe a *heiau* known as Mulei'ula formerly located on Kauhola Point, along the shore well *makai* (roughly 4 kilometers) of the current study area. Ma'ulili Ahupua'a is wrapped by Hala'ula Ahupua'a and does not extend above 1,200 feet elevation nor does it extend to the coast. According to Thrum (1907b) Mulei'ula Heiau was dismantled in the late 1860s by the Kohala Sugar Company. The building of Mulei'ula is "traditionally credited to Hua, the infamous king of Hana, Maui, when he raided Hawaii" (Thrum 1907b:64).¹ Fornander (1969) related that Mulei'ula later belong to Kamakaohua and was dedicated to Lono. This dedication suggests that perhaps the areas *mauka* of this location (including Ma'ulili) may have been used for traditional agriculture; areas that were later incorporated into the extensive nineteenth and twentieth century sugarcane plantations.

Erkelens and Athens (1994) conducted an extensive archaeological inventory survey for the then proposed Kohala Plantation Village on 720 acres of land owned by Chalon International of Hawaii Inc. Their project area

¹ Perhaps only coincidental, it is interesting to note that there is also an *ahupua'a* in east Maui (in the Kipahulu area facing North Kohala) named Ma'ulili.

spanned eleven *ahupua'a* including Ma'ulili. While the current project area lies *mauka* of their study area, the results of their study are highly relevant for the current undertaking. They discovered that the nearly 100 years of sugarcane cultivation and other historic and modern land use removed most of the evidence for earlier traditional Hawaiian habitation in the area. They concluded that:

Although very little evidence of traditional Hawaiian use of the area was recovered by this inventory survey, valuable historical information was obtained. Documentary research combined with archaeological evidence collected during this project has provided details of the infrastructure created for sugar production and also the impact mechanized cultivation has had on the archaeological record and the Hawaiian landscape. (Erkelens and Athens 1994:iii)

Culture-Historical Background

Archaeologists and historians describe the inhabiting of the Hawaiian Islands in the context of settlement that resulted from voyages taken across the open ocean. For many years, researchers have proposed that early Polynesian settlement voyages between Kahiki (the ancestral homelands of the Hawaiian gods and people) and Hawai'i were underway by A.D. 300, with long distance voyages occurring fairly regularly through at least the thirteenth century. It has been generally reported that the sources of the early Hawaiian population—the Hawaiian Kahiki—were the Marquesas and Society Islands (Cordy 2000; Emory in Tatar 1982:16-18).

For generations following initial settlement, communities were clustered along the watered, windward (*ko'olau*) shores of the Hawaiian Islands. Along the *ko'olau* shores, streams flowed and rainfall was abundant, and agricultural production became established. The *ko'olau* region also offered sheltered bays from which deep sea fisheries could be easily accessed, and near shore fisheries, enriched by nutrients carried in the fresh water, could be maintained in fishponds and coastal waters. It was around these bays that clusters of houses where families lived could be found (McEldowney 1979:15). In these early times, Hawai'i's inhabitants were primarily engaged in subsistence level agriculture and fishing (Handy et al. 1972:287).

Evidence for early occupation of Kohala has been collected from Kapa'anui. Dunn and Rosendahl (1989) recovered radiocarbon samples that potentially date to as early as A.D. 461 (Site 12444). This early date may be related to the establishment of small, short-term camps to exploit seasonal, coastal resources. Data recovered from Māhukona suggest initial occupation there by A.D. 1280 (Burgett and Rosendahl 1993:36). The earliest date range for permanent settlement in Kohala (A.D. 1300) was obtained from Koai'e, a coastal settlement where subsistence primarily derived from marine resources. According to Tomonari-Tuggle (1988:I-13), these resources were probably supplemented by small-scale agriculture.

The period from A.D. 1300–1500 was characterized by population growth and expanded efforts to increase upland agriculture. Rosendahl (1972) has proposed that settlement at this time was related to seasonal, recurrent occupation in which coastal sites were occupied in the summer to exploit marine resources, and upland sites were occupied during the winter months, with a focus on agriculture. An increasing reliance on agricultural products may have caused a shift in social networks as well, according to Hommon (1976). Hommon argues that kinship links between coastal settlements disintegrated as those links within the *mauka-makai* settlements expanded to accommodate exchange of agricultural products for marine resources. This shift is believed to have resulted in the establishment of the *ahupua'a* system. The implications of this model include a shift in residential patterns from seasonal, temporary occupation, to permanent dispersed occupation of both coastal and upland areas.

This pattern continued to intensify from A.D. 1500 to Contact (A.D. 1778), and there is evidence that suggests that there were substantial changes to the political system as well. Within Kohala, the Great Wall complex at Koai'e is organized with platforms in the complex apart from contemporaneous features. Griffin et al. (1971) interpret this as symbolizing class stratification. By A.D. 1600, there is island-wide evidence to suggest that growing conflicts between independent chiefdoms were resolved through warfare, culminating in a unified political structure at the district level. It has been suggested that this unification resulted in a partial abandonment of portions of leeward Hawai'i, with people moving to more favorable agricultural areas (Barrera 1971; Schilt and Sinoto 1980).

By the time of contact, numerous coastal villages and extensive dry land and wetland agricultural systems were in place in North Kohala. The *ahupua'a* system of social organization was also firmly established by this time, with wedge-shaped land units extending from the mountains to the sea. The *ahupua'a* were controlled by local chiefs, and were integrated at the district level. Districts were ruled by paramount chiefs through a system of taxation and redistribution. Social stratification was defined by a class separation between the ruling *ali'i* (chiefs) at one end, and the *maka'ainana* (commoners) at the other. Kamehameha I eventually united the Island of Hawai'i, and ultimately all of the Hawaiian Islands, and freely participated in the European-introduced market economy.

Traditional land use patterns saw a rapid shift after the *Māhele* in 1848. At this time, land ownership was defined by grants and awards by the king (Kamehameha III) to the chiefs and other retainers. By 1850 laws were enacted under which commoners could also own land (*kuleana*) if they could prove that they actually occupied those lands. As a result of the *Māhele*, Ma'ulili appears to have been retained as government land, and there were no *kuleana* applied for within this *ahupua'a*. As the *Māhele* created freehold land, it also paved the way for land to be sold to foreigners.

By the mid-19th century, leeward settlement shifted to the windward side of North Kohala as the leeward, agriculturally marginal areas were abandoned in favor of more productive and wetter sugarcane lands. In addition, native populations were decimated by disease and a depressed birth rate. According to Tomonari-Tuggle (1988:I-37), the remnant leeward population nucleated into a few small coastal communities and dispersed upland settlements. Settlements were no longer based on traditional subsistence patterns, largely because of the loss of access to the full range of necessary resources. At this point most communities were centered on sugar mills and became part of the plantation social hierarchy.

Kohala became a land in transition and eventually a major force in the sugar industry with the arrival of American missionary Elias Bond (KTF 1975). In 1860 Rev. Bond engaged Samuel N. Castle in founding the Kohala Sugar Company on lands owned by Bond and his neighbor Dr. James Wight. The first crop was harvested in January 1865 (KTF 1975). Kohala's transition was a reflection of what was happening elsewhere in Hawai'i as the sugar industry grew. By 1904 six sugar mills were operating in North Kohala (Tomonari-Tuggle 1988:I-40-42) on many thousands of acres including the current project area. This influx not only radically changed the culture, but also drastically altered agricultural lands and destroyed traditional architectural features in the process. The rise of the sugar industry in North Kohala stimulated the growth of other economic enterprises in the region.

Prior to the 1880s, the sugar companies hauled their product by ox-cart to landings at Hāpu'u, Kauhola Point, and Honoipu (Tomonari-Tuggle 1988:42). With the completion of the North Kohala railroad in 1883, all but one of the sugar companies began shipping the processed sugar to the newly improved Māhukona Harbor facility. The lone exception was the Hāwī Mill and Plantation Company and its two sugar growing subsidiaries, Puakea and Homestead Plantations, started by R. R. and John Hind in 1881. The Hāwī Mill, for economic reasons, continued shipping its sugar from Honoipu Landing until 1912 (Tomonari-Tuggle 1988:I-42). Following the decline of the sugar industry other agricultural endeavors were pursued. One of the more successful of these endeavors was the cultivation of macadamia nut trees, which presently dominate the current project area.

CURRENT PROJECT EXPECTATIONS

Proposed settlement patterns for the area (Erkelens and Athens 1994) indicate that the *mauka* regions of the north Kohala *ahupua'a* were loci for pondfield (*lo'i*) taro cultivation and associated dense settlement. The coastal *heiau* data also support this predictive model. However, the locations of such activity were dependent on the presence of well-watered gulches; no such topographic features exist anywhere near the current project area nor perhaps anywhere within Ma'ulili Ahupua'a. This may explain why there were no *kuleana* claimed in Ma'ulili during the *Māhele*. Also, given the history of sugarcane and later macadamia nut cultivation specific to the current project area, in combination with the natural erosional history, it is likely that if any Precontact features ever did exist they are no longer extant. As the project area is within an actively cultivated macadamia orchard, Historic Period features related to the earlier sugarcane cultivation are also likely to no longer be present. Additionally, no resources (landforms, vegetation, etc.) of a traditional cultural nature are expected to exist within the current study area boundary.

CONSULTATION

When assessing potential cultural impacts to resources, practices, and beliefs; input gathered from community members with genealogical ties and/or long-standing residency relationships to the study area is vital. It is precisely to these individuals for whom meaning and value are ascribed to traditional resources and practices. Community members may also retain traditional knowledge and beliefs unavailable elsewhere in the historical or cultural record of a place. As part of the current assessment study several individuals were consulted.

A telephone interview was conducted with Henry Ah Sam on August 31, 2009 (Henry is the maternal grandfather of the co-author of the current study). Henry Ah Sam along with his wife Judith are longtime residents of Hala'ula-Maulili Road, having built their home there in the 1960s. Henry related that he thought that Hala'ula-Maulili Road was originally used to drive to Waimea, connecting to Kohala Mountain Road near "Chi-Chi Mountains" (Kalahikiola). He knew about a pond that used to be somewhere above the existing tank, above and to the southwest of the current study area. He said that kids would go up there to catch frogs. He thought this pond was used for irrigation purposes for the plantation. As long as Henry remembers, the land above his home was planted in sugarcane then later macadamia nut trees.

A telephone interview was conducted with James "Kimo" Bowman on August 31, 2009. Kimo is a longtime resident of Hala'ula-Maulili Road. His is the last home on the road before the Macadamia nut orchards. He lives there with his son Joshua. Kimo clarified that Hala'ula Road-Maulili Road connected to Kehena Ranch, up on Kohala Mountain Road (near Kalahikiola). Kimo worked for Isemoto & Sons during the 1960s and participated in laying the surface water pipes that were used for irrigation. Kimo also knew about the pond that Henry mentioned; the pond he said is called "Watanabe pond," and specified its location to be more toward the Hālawā side of the hill. He said that the pond's namesake, Mr. Watanabe is still alive and is in his 90s.

A telephone interview was conducted with Ika Veā on August 31, 2009. Ika resides on Hala'ula-Maulili Road along with his wife Pualani. Ika is a renowned cultural practitioner of Tongan ancestry who specializes in the production of Hawaiian and Polynesian crafts. Ika had no specific information about the current study area. He did assert that he does not go into the current study area for collecting wood or vegetation, and that he does not know of anyone who collects there.

ARCHAEOLOGICAL FIELDWORK

Robert B. Rechtman, Ph. D. and Ashton Dircks Ah Sam, B.A. conducted a systematic field survey of the roughly 1 acre project area on August 13, 2009. The field investigators walked parallel transects in the "alleys" between the macadamia nut trees (roughly 10 meter spacing). The ground surface was partially obscured by grasses and weeds, however this vegetation was low and the visibility conditions were considered excellent for identifying potential archaeological features. As a result of the pedestrian survey, no archaeological resources of any kind were observed on the surface of the project area, and the likelihood of encountering subsurface archaeological resources is extremely remote given the specific land use history (first sugarcane then macadamia nuts) of the project area along with the natural erosional history. Also, there were no resources (landforms, vegetation, etc.) of a traditional cultural nature observed within the project area.

DISCUSSION OF CULTURAL RESOURCES, BELIEFS, AND PRACTICES

The Office of Environmental Quality Control (OEQC) guidelines identify several possible types of cultural practices and beliefs that are subject to assessment. These include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The guidelines also identify the types of potential cultural resources, associated with cultural practices and beliefs that are subject to assessment. Essentially these are natural features of the landscape and historic sites, including traditional cultural properties. A working definition of traditional cultural property is:

“Traditional cultural property” means any historic property associated with the traditional practices and beliefs of an ethnic community or members of that community for more than fifty years. These traditions shall be founded in an ethnic community’s history and contribute to maintaining the ethnic community’s cultural identity. Traditional associations are those demonstrating a continuity of practice or belief until present or those documented in historical source materials, or both.

The origin of the concept of traditional cultural property is found in National Register Bulletin 38 published by the U.S. Department of Interior-National Park Service. “Traditional” as it is used, implies a time depth of at least 50 years, and a generalized mode of transmission of information from one generation to the next, either orally or by act. “Cultural” refers to the beliefs, practices, lifeways, and social institutions of a given community. The use of the term “Property” defines this category of resource as an identifiable place. Traditional cultural properties are not intangible, they must have some kind of boundary; and are subject to the same kind of evaluation as any other historic resource, with one very important exception. By definition, the significance of traditional cultural properties should be determined by the community that values them.

It is however with the definition of “Property” wherein there lies an inherent contradiction, and corresponding difficulty in the process of identification and evaluation of potential Hawaiian traditional cultural properties, because it is precisely the concept of boundaries that runs counter to the traditional Hawaiian belief system. The sacredness of a particular landscape feature is often times cosmologically tied to the rest of the landscape as well as to other features on it. To limit a property to a specifically defined area may actually partition it from what makes it significant in the first place. A further analytical framework for addressing the preservation and protection of customary and traditional native practices specific to Hawaiian communities resulted from the *Ka Pa‘akai O Ka‘āina* v. Land Use Commission court case. The court decision established a three-part process relative to evaluating such potential impacts: first, to identify whether any valued cultural, historical, or natural resources are present; and identify the extent to which any traditional and customary native Hawaiian rights are exercised; second, to identify the extent to which those resources and rights will be affected or impaired; and third, specify any mitigation actions to be taken to reasonably protect native Hawaiian rights if they are found to exist.

As a result of the systematic archaeological field investigation, there were no historic properties identified within the current study area, nor were there any potential traditional resources or evidence of on-going cultural practices observed. Likewise, there were no traditional cultural resources, beliefs, or practices identified during consultation with individuals familiar with the project area.

CONCLUSION AND RECOMMENDATIONS

Given the negative findings of the current study, it is concluded that development of the proposed County of Hawai‘i Department of Water Supply Hala‘ula exploratory well will not significantly impact any known historic properties or any cultural resources and practices of a traditional and customary nature. It is therefore recommended that no further historic preservation work or mitigation is needed.

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APPENDIX C. BIOLOGICAL SURVEY REPORT

Biological Surveys Conducted on the Hala‘ula
Exploratory Well Site,
North Kohala District, Island of Hawai‘i.

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August 18, 2009

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Introduction

The County of Hawai'i Department of Water Supply (DWS) proposes to drill, case, and pump test an exploratory water on an approximately 0.99 acres of land that is identified as TMK: (5-3-004:001) (Figure 1). The exploration would help DWS determine if the well produces water of sufficient quality and quantity to warrant its development into a production source for its Hāwī-Hala'ula Water System. The project site is located in Hala'ula, North Kohala District, Island of Hawai'i.

This report summarizes the findings of the botanical, avian and mammalian surveys that were conducted on the project site on August 13, 2009, as part of the environmental disclosure process. The primary purpose of the surveys was to determine if there were any botanical, avian or mammalian species currently listed as endangered, threatened, or proposed for listing under either the federal or the State of Hawai'i's endangered species programs on, or within the immediate vicinity of the well and reservoir site. Federal and State of Hawai'i listed species status follows species identified in the following referenced documents (Division of Land and Natural Resources (DLNR) 1998, Federal Register 2005, U. S. Fish & Wildlife Service (USFWS) 2005, 2009).

Avian phylogenetic order and nomenclature follows *The American Ornithologists' Union Check-list of North American Birds 7th Edition* (American Ornithologists' Union 1998), and the 42nd through the 50th supplements to *Check-list of North American Birds* (American Ornithologists' Union 2000; Banks et al. 2002, 2003, 2004, 2005, 2006, 2007, 2008, Chesser et al., 2009). Mammal scientific names follow *Mammals in Hawaii* (Tomich 1986). Plant names follow *Manual of the Flowering Plants of Hawai'i* (Wagner et al., 1990, 1999) for native and naturalized flowering plants, and *A Tropical Garden Flora* (Staples and Herbst, 2005) for crop and ornamental plants. Place names follow *Place Names of Hawaii* (Pukui et al., 1974).

Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text.

General Project and Site Description

The roughly 0.99-acre site is located east of the unpaved portion of Ma'ulili Road, in Hala'ula, at an approximate elevation of 244 meters (800-feet) above sea level (Figure 1). DWS is proposing to drill and then test the exploratory water well. As a part of this action DWS will be grading an approximately 0.27-acre pad, and an approximately 18 meter (60 foot) long access road onto the site off of Ma'ulili Road (Figure 1).

The site is located on an active commercial macadamia nut (*Macadamia integrifolia*) orchard. As such the site has been highly modified by agricultural activities and almost no native vegetation remains on the property (Figure 2).

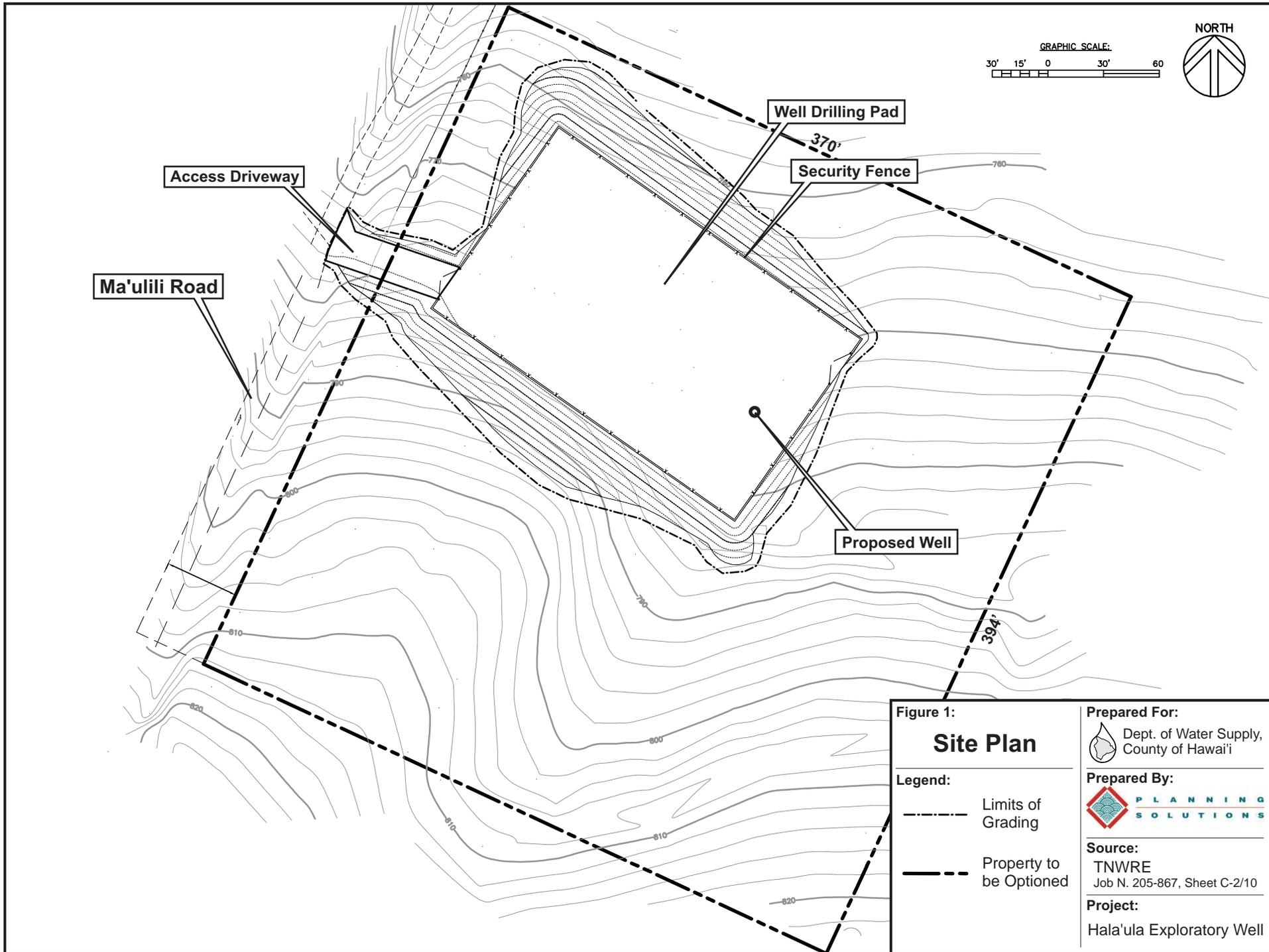


Figure 1:
Site Plan

- Legend:
- Limits of Grading
 - Property to be Optioned

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

Prepared By:
 **PLANNING SOLUTIONS**

Source:
 TNWRE
 Job N. 205-867, Sheet C-2/10

Project:
 Hala'ula Exploratory Well

Figure 1 Site Plan 2020-05-06.cdr



Figure 2 – Hala'ula well site, showing macadamia trees and the highly tended habitat present on the site

Botanical Survey Methods

A reconnaissance level botanical survey was conducted within the site, primarily to characterize the vegetation present and to determine whether any botanical species currently listed or proposed for listing under either federal or State of Hawai'i endangered species statutes were present on the site. A species list was kept of all species recorded; these data are presented in Table 1.

Botanical Survey Results

A total of 32 species of plants were recorded on the site (Table 1). Two species, *pala'ā* and manyspike flatsedge (*Cyperus polystachyos*) are indigenous to the islands. The remaining 30 species recorded are all considered to be alien, naturalized species. No species currently listed, or proposed for listing under either the federal or State of Hawai'i endangered species statutes was recorded on the site.

Table 1 - Plants Recorded on the Hala'ula Well Site

<i>Scientific Name</i>	<i>Common Name</i>	<i>ST</i>
FERNS & FERN ALLIES		
LINDSAEACEAE		
<i>Sphenomerus chinensis</i> (L) Maxon	<i>pala'ā</i>	Ind
NEPHROLEPIDACEAE		
<i>Nephrolepis multiflora</i> (Roxburgh) Jarrett ex Morton	common sword fern	N
FLOWERING PLANTS DICOTYLEDONES		
ACANTHACEAE		
<i>Thunbergia fragrans</i> Roxb.	sweet clock vine	N
AMARANTHACEAE		
<i>Altenanthera pungens</i> Kunth	khaki weed	N
<i>Amaranthus spinosa</i> (L.) DC	spiny amaranth	N
ASTERACEAE (COMPOSITAE)		
<i>Bidens pilosa</i> L.	beggar's-tick	N
<i>Conyza bonariensis</i> (L.) Cronq.	hairy horseweed	N
<i>Emilia fosbergii</i> Nicolson	Flora's paintbrush	N
<i>Sphagneticola trilobata</i> (L.) Pruski	wedelia	N
<i>Taraxacum officinale</i> W.W. Weber ex Wigg.	common dandelion	N
<i>Youngia japonica</i> (L.) DC	oriental hawkbeard	N
BRASSICACEAE		
<i>Lobularia maritime</i> (L.) Desv.	sweet alyssum	N
CECROPIACEAE		
<i>Cecropia obtusifolia</i> Bertol.	guarumo	N
EUPHORBIACEAE		
<i>Chamaesyce hirta</i> L.	garden spurge	N
<i>Euphorbia heterophylla</i> L.	<i>kaliko</i>	N
<i>Ricinus communis</i> L.	castor bean	N
FABACEAE		
<i>Crotalaria micans</i> Link	rattlepod	N
<i>Crotalaria pallida</i> Aiton	smooth rattlepod	N
<i>Desmodium cf. incanum</i> DC	Spanish clover	N
<i>Melilotus alba</i> Medik.	white sweet clover	N
<i>Mimosa pudica</i> L.	sensitive plant	N
MYRTACEAE		
<i>Psidium cattleianum</i> Sabine	strawberry guava	N
PRIMULACEAE		
<i>Anagalis arvensis</i> L.	scarlet pimpernel	N

Table 1 Continued

<i>Scientific Name</i>	<i>Common Name</i>	<i>ST</i>
PROTEACEAE		
<i>Macadamia integrifolia</i> Muell.	macadamia nut	
VERBENACEAE		
<i>Stachytarpheta urticifolia</i> (Salisb.) Sims	-----	N
<i>MONOCOTYLEDONES</i>		
CYPERACCEAE		
<i>Cyperus polystachyos</i>	manyspike flatsedge	Ind
POACEAE (GRAMINEAE)		
<i>Chloris radiata</i> (L.) Sw.	radiate fingergrass	N
<i>Dactylis glomerata</i> L.	cocksfoot	N
<i>Melinis minutiflora</i> P. Beauv.	molasses grass	N
<i>Melinis rupens</i> (Willd.) Zizka	Natal redtop	N
<i>Paspalum conjugatum</i> Bergius	Hilo grass	N
<i>Urochloa maxima</i> (Jacq.) Webster	Guinea grass	N

Key to table 1

- ST** Status
- Ind Indigenous – native to the Hawaiian Islands, but also found elsewhere naturally
- N Naturalized – an alien species now naturalized in the Hawaiian Islands

Avian Survey Methods

A record was kept of all avian species detected while within the project site. Additionally, two eight-minute point counts were made at opposite ends of the property. Field observations were made using Leitz 10 X 42 binoculars, and by listening for vocalizations. Time not spent counting was used to search the study site for species and habitats that were not detected during count sessions.

Avian Survey Results

During the course of the avian survey I recorded 22 individual birds of seven separate species representing seven families (Table 2). One of the species recorded, Hawaiian Hawk (*Buteo solitarius*) is listed as an endangered species under both federal and state of Hawai'i endangered species statutes. The remaining six species recorded are considered to be alien to the Hawaiian Islands

Avian diversity and densities recorded were low, though in line with what one would expect in an active macadamia nut orchard. Hwamei (*Garrulax canorus*), was the most frequently detected avian species accounted for 50 percent of the total number of birds recorded.

Table 2 - Avian Species Detected at the Hala'ula Well Site

<i>Common Name</i>	<i>Scientific Name</i>	<i>ST</i>	<i>RA</i>
FALCONIFORMES			
ACCIPITRIDAE - Hawks, Kites, Eagles & Allies			
Accipitrinae - Kites, Eagles & Hawks			
Hawaiian Hawk	<i>Buteo solitarius</i>	EE	1.00
COLUMBIFORMES			
COLUMBIDAE - Pigeons & Doves			
Zebra Dove	<i>Geopelia striata</i>	A	1.00
PASSERIFORMES			
TIMALIIDAE - Babblers			
Hwamei	<i>Garrulax canorus</i>	A	5.50
ZOSTEROPIDAE - White-eyes			
Japanese White-eye	<i>Zosterops japonicus</i>	A	0.50
STURNIDAE - Starlings			
Common Myna	<i>Acridotheres tristis</i>	A	0.50
CARDINALIDAE - Cardinals & Allies			
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	1.00
FRINGILLIDAE - Fringilline and Carduleline Finches & Allies			
Carduelinae - Carduline Finches			
House Finch	<i>Carpodacus mexicanus</i>	A	1.50

Key to table 2

ST Status

A Alien – Introduced to the Hawaiian Islands by humans

EE Endangered Endemic – Native and unique to the Island of Hawaii, also listed as endangered

RA Relative Abundance –Number of birds detected divided by the number of count stations (2)

Mammalian Survey Methods

All observations of mammalian species were of an incidental nature. With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or 'ōpe'ape'a as it is known locally, all terrestrial mammals currently found on the Island of Hawai'i are alien species, and most are ubiquitous. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate species observed and heard within the study area.

Mammalian Survey Results

A rat (*Rattus* sp.), of indeterminate identification was seen being consumed by a Hawaiian Hawk within the site. Several dogs (*Canis f. familiaris*) were heard barking from areas outside of the study site. Additionally, track, sign and scat of pigs (*Sus s. scrofa*), was encountered within the study site.

Discussion

Botanical Resources

A total of 32 species of plants was recorded on the site, two of which are native to the Hawaiian Islands. Both of the native species recorded, *pala'ā* and manyspike flatsedge are relatively common indigenous species. The remaining 30 species recorded are all considered to be alien to the Hawaiian Islands. No species currently listed, or proposed for listing under either the federal or State of Hawai'i endangered species statutes was recorded on the site.

The site is located within an active macadamia nut orchard. The vegetation on the well site is typical of that found in macadamia orchards, namely macadamia nut trees, with weedy ruderal species growing in the path and roadways. Regular mowing between the rows of trees controls the vegetation. This habitat is illustrated in Figure 2. The modification of the vegetation on the site will not affect any listed species; neither will it result in significant impacts to native vegetation within the greater Hāwī/ Hala'ula, area.

Avian Resources

Avian diversity and densities were low, even lower than one would ordinarily expect to record in an active macadamia orchard. This finding is likely due to the fact that a lone Hawaiian Hawk was actively foraging for prey over the site and the immediate surrounding area during the time that I was on the property. Small passerines are well aware of the potential danger that a foraging Hawaiian Hawk poses to them, and usually become very quiet while a raptor is foraging close to their location.

All but one of the seven avian species detected during the course of this survey are considered to be alien to the Hawaiian Islands. The lone native species recorded, Hawaiian Hawk is listed as an endangered species under both federal and state of Hawai'i endangered species statutes.

Hawaiian Hawk. A single adult male, light phase Hawaiian Hawk was seen foraging on the property. It was first seen dismembering a rat, and then was seen landing first in a Cook pine (*Araucaria columnaris*) just to the north of the well site, then foraging over the site and surrounding area, and then finally landing in an ironwood (*Casuarina equisetifolia*) grove located to the east of the site.

Hawaiian Hawks are currently found in nearly all habitats on the island that still have some large tree components. They are regularly seen foraging in the general project area. Hawk densities are highest in mature, native species dominated forests, with grassy under-stories. This habitat, with

high amounts of forest edge, supports large populations of game birds and the four species of introduced rodents known from the island, all of which are prey items for the hawk. Additionally, this type of habitat also provides numerous perches and nesting sites suitable for this species (Klavitter 2000).

The Hawaiian Hawk, or 'io, is the only extant *falconiforme* in Hawai'i. It is currently endemic to the Island of Hawai'i. Sub-fossil remains indicate that it was also formerly found on Moloka'i and Kaua'i (Olson & James 1997). Several incidental unconfirmed sightings of this species exist from Kaua'i (Dole 1879, Beaglehole, 1967) and Maui (Banko 1980c). This species was first mentioned in the western literature by Cook and King in 1784 and was scientifically described by Peale in 1848 from a specimen collected in "Kealakekua" (Medway 1981, Peale 1848).

Current population estimates based on John Klavitter's research extrapolates that there are currently 1,450 Hawaiian Hawks living in the wild. That number is, in his estimation, is equal to or higher than the number present in pre-contact times (Klavitter 2000). The Hawaiian Hawk breeding season starts in late March, chicks hatch in May, and begin to fledge in July (Griffin et al. 1998). Although hawks use resources in most forest habitats they usually nest in 'ōhi'a trees (*Metrosideros polymorpha*). Of 112 nests found during the 1998 and 1999 nesting seasons, 82 percent of the nests were located in 'ōhi'a trees (Klavitter 2000). There are no appropriate nesting trees present on the project site for this species. The USFWS published a proposed rule to delist the Hawaiian Hawk in the *Federal Register* on August 6, 2008. The proposal is still open (*Federal Register* 2008).

Hawaiian Petrel and Newell's Shearwaters. Although not recorded during the course of this survey, it is possible that small numbers of the endangered endemic Hawaiian Petrel (*Pterodroma sandwichensis*), or ua'u, and the threatened Newell's Shearwater (*Puffinus auricularis newelli*), or 'a'o, over-fly the project area between the months of May and November (Banko 1980a, 1980b, Day et al. 2003a, Harrison 1990). There is no suitable nesting habitat within or close to the proposed project site for either of these pelagic seabird species.

Hawaiian Petrels were once common on the Island of Hawai'i (Wilson and Evans 1890–1899). This pelagic seabird reportedly nested in large numbers on the slopes of Mauna Loa and in the saddle area between Mauna Loa and Mauna Kea (Henshaw 1902), as well as at the mid to high elevations of Mount Hualālai. It has, within recent historic times, been reduced to relict breeding colonies located at high elevations on Mauna Loa and, possibly, Mount Hualālai (Banko 1980a, Banko et al. 2001, Cooper and David 1995, Cooper et al. 1995, Day et al. 2003, Harrison 1990, Hue et al. 2001, Simons and Hodges 1998).

Newell's Shearwaters, another pelagic seabird species were formerly common on the Island of Hawai'i (Wilson and Evans 1890–1899). This species breeds on Kaua'i, Hawai'i and Moloka'i in extremely small numbers. Newell's Shearwater populations have dropped precipitously since the 1880s (Banko 1980b, Day et al., 2003b). This species nests high in the mountains in burrows excavated under thick vegetation, especially *uluhe* (*Dicranopteris linearis*) fern.

Mammalian Resources

The findings of the mammalian survey are in keeping with the habitat present on the site, and the current management of the property.

Hawaiian hoary bat. Although, no Hawaiian hoary bats were detected during the course of this survey, it is probable that bats do occasionally use resources within the general project area. Hawaiian hoary bats are regularly seen in the general project area on a seasonal basis (David 2009). Unlike nocturnally flying seabirds, which sometimes collide with man-made structures, bats are uniquely adapted to avoid collision with most obstacles, man-made or natural. They navigate and locate their prey primarily by using ultrasonic echolocation, which is sensitive enough to allow them to locate and capture small volant insects at night.

Recent research on this species has shown that the species is present on the Island of Hawai‘i on a seasonal basis in almost all areas on the Island where dense vegetation and tree cover is present. The research also indicates that the bat is a human commensal species often associated with tree farms and other agricultural efforts. They are also attracted to outdoor lights, which attract volant insects on which this species forages (Bonaccorso et al. 2004, 2007).

The one rat that was recorded during this survey was no longer identifiable to species as it was being actively dismembered by a Hawaiian Hawk when seen. It is probable that the four established alien rodents known from the Island of Hawai‘i roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiiensis*), and European house mice (*Mus musculus domesticus*), use resources on the project site as rodents are particularly fond of nuts.

Potential Impacts to Protected Species

Hawaiian Hawk

The principal potential impact that the development of the proposed well poses to Hawaiian Hawks would be during the clearing and grubbing phase of the project that an active Hawaiian Hawk nest tree could potentially be removed. It is not expected that the development of the proposed well will result in deleterious impacts to Hawaiian Hawks. This opinion reflects the fact that the trees that will need to be cleared to build this project are predominantly relatively short macadamia nut trees, a substrate that is not usually associated with Hawaiian Hawk nesting activity. Individual foraging hawks may be temporarily disturbed by construction activity. Such potential disturbance to foraging Hawaiian Hawks is not likely to be significant, as there are miles of suitable foraging habitat surrounding the very small project site.

Hawaiian Petrel and Newell’s Shearwater

Development of this site as proposed could have the potential to adversely affect Hawaiian Petrels and Newell’s Shearwaters only if it involved an increase in outdoor lighting. As no such lighting is planned, there appears to be no risk to these species.

Hawaiian Hoary Bat

The principal potential impact that the development of the proposed well and reservoir poses to bats is during the clearing and grubbing phases of construction as vegetation is removed. The removal of vegetation within the project site may temporarily displace individual bats, which may use the vegetation as a roosting location. As bats use multiple roosts within their home territories the potential disturbance resulting from the removal of the vegetation is likely to be minimal. During the pupping season female carrying their pups may be less able to rapidly vacate a roost site as the vegetation is cleared. Additionally adult female bats sometimes leave their pups in the roost tree while they themselves forage. Very small pups may be unable to flee a tree that is being felled. Potential adverse effects from such disturbance can be avoided or minimized by not clearing during the pupping season, between April 15 and August 15, the period in which bats are potentially at risk from vegetation clearing.

Conclusions

The modification of the current habitat on the Hala'ula site is not expected to result in significant impacts to any botanical, avian or mammalian species currently listed as threatened, endangered or proposed for listing under either the Federal, or State of Hawai'i endangered species programs. Furthermore, the development of the site is not expected to have a significant deleterious impact on native faunal resources found within the North Kohala District.

Recommendations

While the risk that project-related activities could adversely affect Hawaiian bats is small, it is present if vegetation clearing is conducted during the pupping season. The risk to this protected species can be completely eliminated by avoiding such work between April 15 and August 15.

Glossary

Alien - Introduced to Hawai'i by humans.

Commensal – Animals that share humans' food and lodgings, such as rats and mice.

Diurnal – Daytime.

Endangered – Listed and protected under the ESA as an endangered species.

Endemic – Native and unique to the Hawaiian Islands.

Falconiforme – Diurnal birds of prey – 271 species worldwide.

Indigenous - Native to the Hawaiian Islands, but also found elsewhere naturally.

Mauka – Upslope, towards the mountains.

Naturalized – A plant or animal that has become established in an area that it is not indigenous to

Nocturnal – Nighttime, after dark.

Ruderal – Disturbed, rocky, rubbishy areas, such as old agricultural fields and rock piles

Sign – Biological term referring tracks, scat, rubbing, odor, marks, nests, and other signs created by animals by which their presence may be detected

Threatened - Listed and protected under the ESA as a threatened species.

Volant – Flying, capable of flight - as in flying insect.

ASL – Above mean sea level.

DWS – Hawai'i County Department of Water Supply.

ESA – Endangered Species Act of 1973, as amended.

USFWS – U.S. Fish & Wildlife Service

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