



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

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

June 27, 2007
Honolulu, Oahu

Ko Olina Intangibles, LLC/Ko Olina Development, LLC
APPLICATION FOR A WATER USE PERMIT

Ko Olina Saltwater Well (Well No. 1906-12), TMK 9-1-057:024, WUPA No. 810
New Use for 6.525 mgd of Saltwater (Initial fill, Make-up, and Tank Cooling for a Marine
Attraction; Air Conditioning Heat Exchange for Buildings; and Bottled (Desalted) Water)
Ewa-Kunia Ground Water Management Area, Oahu

APPLICANT:

Ko Olina Intangibles, LLC
1100 Alakea St., Ste. 2500
Honolulu, HI 96813

LANDOWNER:

Ko Olina Development, LLC
1100 Alakea St., Ste. 2500
Honolulu, HI 96813

SUMMARY OF REQUEST:

The applicant requests that the Commission approve a water use permit for an allocation of 6.525 million gallons per day (mgd) of saltwater from a new well for the initial fill, make-up, and tank cooling for a marine attraction; air conditioning heat exchange for buildings; and bottled water.

LOCATION MAP: See Exhibit 1

BACKGROUND:

On March 22, 2006, the Commission issued an exploratory well construction permit for the proposed Ko Olina Saltwater Well (Well No. 1906-12). The Hawaii Well Construction and Pump Installation Standards (HWCPIS) define a saltwater well as a well that produces water with chloride content greater than 17,000 mg/L. HWCPIS requirements for saltwater wells include installation of a solid casing and grouting through the entire fresh- and brackish-water portion of the lens to ensure that the overlying aquifer will not be impacted by the saltwater withdrawal.

On February 26, 2007, a completed water use permit application was received from Ko Olina Intangibles, LLC, in conjunction with landowner Ko Olina Development, LLC, by the Commission on Water Resource Management (Commission). Additional information regarding the source, use, notification, objections, and field investigation(s) is provided in Attachment A.

ANALYSIS/ISSUES:

Section 174C-49(a) of the State Water Code establishes seven (7) criteria that must be met to obtain a water use permit. An analysis of the proposed permit in relation to these criteria follows:

(1) Water availability

This application is for use of saltwater from a proposed new well to be drilled within the boundaries of the Ewa-Kunia Aquifer System Area; however, the well will tap only the underlying saltwater at depth. Saltwater wells are required to be constructed such that the solid casing and grout will extend through the entire fresh and brackish water portion of the basal lens to prevent any fresher portion of the ground water (<17,000 mg/L) from entering the well. Water availability is not an issue as the proposed well must be constructed such that it will not impact the fresh or brackish portion of the Ewa-Kunia Aquifer System Area and will instead tap the saltwater from the ocean underlying the basal aquifer. However, because the proposed well falls within the boundaries of a water management area, the use must be permitted and withdrawals, chlorides, and end uses should be monitored to ensure that only saltwater is pumped.

(2) Reasonable-beneficial

Section 174C-3 HRS defines "reasonable-beneficial use" is

"...the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is both reasonable and consistent with the state and county land use plans and the public interest".

I. Purpose of Use

The applicant is requesting the use of saltwater for the initial fill, make-up, and tank cooling for a marine attraction, air conditioning heat exchange for buildings, and bottled (desalted) water. These are considered commercial and industrial uses of water. The desalt by-product brine water and heated saltwater (after passing through the cooling system) will be disposed through shallow caprock injection wells in the vicinity of the new saltwater well.

DOH's Safe Drinking Water Branch (SDWB) commented that the subsurface disposal of waste water from the attraction, heat exchange, or bottled (desalted) water operations may be subject to Underground Injection Control (UIC) regulations. The applicant should contact the UIC program at 586-4258. SDWB also commented that the processing and approval of bottled water falls under the jurisdiction of the Food and Drug Branch (586-4725).

II. Quantity Justification

The applicant is requesting a total of 6.525 mgd of saltwater over the next four years. The ultimate demand for saltwater is projected to be 11.614 mgd. Exhibit 2 provides a breakdown of the end use locations, types, and time frames. Of the total water requested over the next four years and to build out, only 0.439 mgd is projected to be used for the marine attraction and for bottling water. The balance will be used for air conditioning heat exchange. The Commission does not have any guidelines for these types of uses. However, the applicant claims the projected demands are based on industry standards or experience (i.e., NELHA desalted bottled water). Exhibit 3 provides a breakdown of the demands for the various end uses and includes the calculations and assumptions used to estimate demands.

III. Efficiency of Use

Economics (cost of operating the pump) is a major incentive for efficient saltwater use. In addition, the plans call for installing a series of pumps of varying capacities that will automatically shut on and off, depending on demand. Demand will be met using the smallest capacity pump or combination of pumps.

The major portion of the pumped saltwater will be used for air conditioning heat exchange. The permittee is projecting the saltwater to be about 63° F when it comes out of the well. After passing through the cooling system, the saltwater will heat up to about 84° F. This warmer water is no longer usable for air conditioning heat exchange. However, the applicant is exploring the possibility of recycling the saltwater for use in the marine attraction.

IV. Analysis of Practical Alternatives

The applicant claims there are no practical alternatives to the proposed uses of saltwater. For cooling uses, Ko Olina has a need for a very large quantity of cool water for heat exchange. City water is not cool enough and cannot be supplied in large enough

quantities for the type of cooling system desired. The proposed use of cool saltwater conserves both higher quality water and energy. There would be a tremendous cost increase if HECO power were to be used for conventional air conditioning.

The aquarium requires saltwater; therefore, an alternative that provides fresh water is not a true alternative. Furthermore, saltwater (ocean water found at depth) is abundant compared to fresh water resources and, in the context of water resource management, is more appropriately considered an alternative to the use of fresh water resources, where feasible (e.g., cooling water).

The 2000 Legislature amended the Water Code to include a new section, §174C-51.5 HRS that provides the Commission with the authority to require dual line (potable and non-potable) water supply systems in new industrial and commercial developments located in designated water management areas. In this case, the applicant is already proposing to install a dual system for the proposed saltwater uses. Therefore, this provision does not need to be invoked.

(3) Interference with other existing legal uses

Exhibit 1 shows the proposed saltwater well will be located near the shoreline at Ko Olina. There are no downgradient wells. Other wells within a 1 mile radius have either been sealed or are observation wells, except for upgradient Well Nos. 2006-01 to 11 & 13, which provide brackish water for industrial and irrigation uses. The proposed use of saltwater should not result in interference with these brackish water uses or other existing legal uses. Exhibit 4 contains a list and description of all wells in grids 1906, 1907, 2006, and 2007.

(4) Public interest

Public interest is defined under §174C-2 - Declaration of policy, as follows:

“(c) The state water code shall be liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as domestic uses, aquaculture uses, irrigation and other agricultural uses, power development, and commercial and industrial uses. However, adequate provision shall be made for the protection of traditional and customary Hawaiian rights, the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture, and navigation. Such objectives are declared to be in the public interest.”

The use of water for commercial and industrial purposes is supported by the above declaration of policy. Staff is unaware of any negative impacts to other objectives declared to be in the public interest that would result from these proposed uses of saltwater. No adverse impacts to water resources or existing legal uses are anticipated.

Therefore, these proposed uses are deemed to be in the public interest.

(5) State & county general plans and land use designations

The proposed uses are in the State Land Use Urban District. Pursuant to section 205-2(b) HRS, activities or uses within the Urban District are the jurisdiction of the respective counties as provided by their ordinances or regulations.

The current zoning for TMK 9-1-057:022 is B-2 Community Business District. Tax Map Keys 9-1-057:20, 23, & 33 are in the A-2 Medium Density Apartment District. Tax Map Key 9-1-057:010 is in the Resort District.

The original application requested water for air conditioning heat exchange for condos at TMK 9-1-057:022 in the B-2 Community Business District. The City and County of Honolulu, Department of Planning and Permitting (DPP) commented that condo (time sharing or transient vacation units) is not a permitted use within the B-2 Community Business District. The applicant amended its application to exclude the condo uses at TMK 9-1-057:022. This amendment did not affect the projected 4-year demands, but did reduce the ultimate saltwater demand.

DPP has confirmed that all other proposed end uses are permitted uses within their respective zoning designations and that all Special Management Area issues have been addressed.

Therefore, these proposed uses are consistent with state and county general plans and land use designations.

(6) County land use plans and policies

DPP has commented that the proposed new uses will support the growth and development of Ko Olina Resort, which is consistent with the vision for Ewa's future.

Honolulu Board of Water Supply has no objections to this application because the water is deep, salty ground water similar to ocean water. Use of saltwater will have no adverse impacts on fresh ground water resources.

Therefore, these proposed uses are consistent with county land use plans and policies.

(7) Interference with Hawaiian home lands rights

All permits are subject to the prior rights of Hawaiian home lands. The Department of Hawaiian Home Lands (DHHL) has reviewed this application and indicated that it had no objections or comments on this application. Standard water use permit conditions 3.g., 6., and 9.f. notify all water use permittees that their permits are subject to and cannot interfere with Hawaiian home land rights.

Therefore, this application will not interfere with Hawaiian home lands rights.

Other issues

Normal agency review includes:

- 1) the State's Department of Land and Natural Resources (DLNR) and its State Parks, Aquatic Resources, Historic Preservation, and Land Divisions; the Department of Health (DOH) and its Clean Water, Safe Drinking Water, and Wastewater Branches; the Department of Hawaiian Home Lands (DHHL); Land Use Commission (LUC); and the Office of Hawaiian Affairs (OHA).
- 2) the Mayor's Office, the County Department of Planning and Permitting, and Honolulu Board of Water Supply.

All relevant comments were discussed in the sections above. No other substantive comments were received, and no objections were raised through this review.

RECOMMENDATION:

Due to the applicant's ability to demonstrate consistency with the criteria to obtain a water use permit, staff recommends that the Commission approve the issuance of Water Use Permit No. 810 to Ko Olina Intangibles, LLC/Ko Olina Development, LLC for the reasonable and beneficial use of 6.525 million gallons per day of saltwater for initial fill, make-up, and tank cooling for marine attraction; air conditioning heat exchange for buildings; and bottled water from the Ko Olina Saltwater Well (Well No. 1906-12), subject to the standard water use permit conditions listed in Attachment B and the following special conditions:

1. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.
2. Standard Condition 16, requiring the submittal of a water shortage plan, is waived.
3. Standard Condition 10 is modified to exempt the permittee from the requirement to install a flowmeter and submit monthly water data reports. The permittee may estimate pumpage and submit annual reports using the attached form (Attachment C).
4. The applicant should contact the Underground Injection Control program at 586-4258 regarding the subsurface disposal of waste water from the attraction, heat exchange, or bottled water operations.

Respectfully submitted,



W. ROY HARDY
Hydrologic Program Manager

Attachment(s): A (Water Use Permit Detailed Information)
 B (Water Use Permit Standard Conditions)
 C (Water Use Reporting Form)

Exhibit(s): 1 (Location Map)
 2 (Proposed End Uses)
 3 (Demand Calculation)
 4 (Other Nearby Wells)

APPROVED FOR SUBMITTAL:



ALLAN A. SMITH
Interim Chairperson